

Annex 3: delivery schedule grading

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Delivery schedule grading: further information on ESOQ11

ESOQ11: Do you agree with our grading of the ESO's RIIO-2 aims and delivery schedule for 2021-23?

Role 1: Control centre operations

What	Assessment	Role 1
RIIO-2 aims	Ambition (1-5)	5
Two-year delivery schedule	Minimum requirements met (Yes / No)	No
	Ambition (1-5)	3

Figure 1: Summary of assessment – Control centre operations

Role summary

- We are pleased to note Ofgem’s views “that the aims for Role 1 are very ambitious” and “If the ESO’s proposed new processes and systems can provide it with the ability to efficiently operate (and restore if needed) a carbon free system in 2025, then this would strongly exceed our expectations.”
- We also acknowledge Ofgem’s comment that “it is vital that there is evident and tangible progress made towards delivering these aims in the first Business Plan period”. We will provide further clarity on how we will deliver this progress in our updated delivery schedule, to be published in October.

1(a) System operation

Assessment of two-year delivery schedule

1(a) System operation

Relevant deliverables	Met minimum requirements?	Assessment against Ofgem expectations
A1 (excluding D1.1.7, D1.4.1) A2 A15.7	No	Meets

Figure 2: Summary of assessment - System operation

ESO response to activity grading: We are pleased that our activities in this area meet expectations and will provide further information in an updated delivery schedule to meet minimum expectations.

Activities: A1 Control Centre Architecture and Systems; A2 Training and Simulation; A15.7 Deliver an operable zero carbon system

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
Deliverables for Control Centre Architecture and Systems (A1 and A15.7) are not well specified. In the majority of cases, it is not clear what specific outputs and outcomes are being delivered by March 2023. Some	Overall, the ESO’s deliverables for this activity do not sufficiently explain the progress it aims to make against its ambitious RIIO-2 role 1 aims. We recognise that the ESO is proposing to adopt an agile approach	The ESO needs to demonstrate how it will make tangible progress during BP1 against its RIIO-2 ambition to have the ability to operate the system carbon free by 2025. Deliverables need to be more tangible and	<ul style="list-style-type: none"> • We will provide greater clarity on the specific outcomes and outputs to be delivered by March 2023 through our updated delivery schedule. This will also demonstrate how the milestones in BP1 will

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
<p>deliverables (D1.1.4 - D1.1.6, D.1.34, D.1.2.3) do not have milestones or success measures when we consider they should do. Deliverables for Enhanced balancing capability (A1.2) and transform network control (A1.3) have dates and success measures, but it is not clear what additional system functionality will be delivered and by when. This is because the milestones focus on further steps of engagement and unstipulated design work. Milestones that are open ended (eg, "continue design work") are not sufficiently specific. D1.3.2 has an example of a firmer milestone ("first set of tools of tools delivered and integrated with data platform"), but lacks details on what these tools are or what they achieve.</p> <p>Control Centre training and simulation deliverables (A2) are better specified, but still contain instances of milestones and success measures which are too general and open ended. These deliverables would benefit from a greater articulation of the outcomes achieved by 2023, including how in practice they will contribute to the ESO's overall aim to operate carbon free by 2025.</p>	<p>to IT system development and that the precise solutions are still to be defined. However, there is too little detail on the tangible outputs and system functionality the ESO aims to put in place by the end of BP1. As a result, it is very difficult for us to conclude that the BP1 delivery schedule matches the ambition shown by the RIIO-2 plan.</p> <p>Regular engagement with the Design Authority and stakeholders over IT system development is very important but is something we expect the ESO to do to meet our expectations. Additionally, incremental upgrades to RIIO-1 legacy systems and tools (such as inertia measurement), and/or the implementation of projects delayed from RIIO-1, will meet but not exceed our expectations.</p> <p>The transformational investments under A1, A2 and A15.7 have the potential to exceed expectations, but as discussed, are insufficiently specified for us to conclude they will do for BP1.</p>	<p>specific so that they clearly articulate what the ESO will achieve in each area by March 2023. This means demonstrating through the plan:</p> <p>The practical improvements to system operation that will be achieved by March 2023 and what this means for both balancing cost savings and carbon emissions.</p> <p>For longer term projects, how the milestones proposed at the end of BP1 will ensure the delivery the 2025 aims are on track (building in contingency for delays and unforeseen consequences).</p>	<p>ensure longer term projects are on track to ensure delivery of the 2025 aims.</p> <ul style="list-style-type: none"> • However, it should be noted that delivery of the systems and tools the Control Centre needs to operate a carbon free system will be through an agile delivery method. This means that while we will be able to share the high level functionality to be deployed over the period, detailed milestones will only be available on a rolling basis as the deployment backlog is periodically prioritised. • We see a role for the Technology Advisory Council (previously called the RIIO-2 Design Authority) providing Ofgem and stakeholders further clarity and detail while we adopt an agile approach. The establishment of the Technology Advisory Council will provide independent challenge, guidance and ensure that the roadmaps (high level milestones) are set out to deliver to stakeholder and customer requirements, and through regular review, remain on track with the agreed schedules. <p>Transparency of the Technology Advisory Council discussions and minutes will be readily available and could be used to monitor formally progress against the ambition.</p>

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
			<ul style="list-style-type: none"> Our CBA report details, per year, the reduction in balancing costs and carbon emissions (than would otherwise have been the case) for our activities in this area.

Figure 3: Summary of assessment - Activities: A1 Control Centre Architecture and Systems; A2 Training and Simulation; A15.7 Deliver an operable zero carbon system

1(b) System restoration

Assessment of two-year delivery schedule

1(b) System restoration

Relevant deliverables	Met minimum requirements?	Assessment against Ofgem expectations
A3	No	Meets

Figure 4: Summary of assessment - System restoration

ESO response to activity grading: We are pleased that our activities in this area meet expectations and will provide further information in an updated delivery schedule to meet minimum expectations.

Sub activities: A3.1.5 Fully competitive Black Start procurement

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
A fully competitive Black Start procurement process (D3.1.5) should be a key area for progress during BP1, particularly given the ESO’s aims for competition everywhere by 2025. This deliverable has no milestones, success measures or		<p>To exceed during RIIO-2 we expect to see fully competitive procurement of black start services that is fair and open to all market participants and technologies. This means the ESO taking full advantage of non-traditional sources of generation at all voltage levels to maximise efficiency and minimise restoration times.</p> <p>We therefore expect to see a delivery schedule which:</p> <p>Clearly specifies what system and process changes will be made during BP1 to make tangible progress against these expectations.</p>	<ul style="list-style-type: none"> We understand the need for further clarity on how we will include Black Start procurement in the delivery of Competition Everywhere across the wider range of services. We will provide greater clarity on the milestones, success measures and end dates through our updated delivery schedule. However, it should be noted the ability to take full advantage of non-traditional sources of generation at all voltage levels is highly dependent on the outcomes of the Distributed ReStart Project and the reactions of multiple network companies to those lessons learned.

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
end dates and is therefore not time bound or specified.			

Figure 5: Summary of assessment - A3.1.5 Fully competitive Black Start procurement

Sub activity A3.2 Restoration standard

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
Most restoration standard deliverables (D3.2.1 to D3.2.3) are sufficiently specified. The decision-making support tool (D3.2.4) needs more detail on what will be achieved by the end of BP1 as the milestones (“engage with design”) and the success measures (“tool design underway”) are too open ended.	The implementation of a restoration standard meets our expectations. The decision-making support tool has the potential to exceed our expectations but there is insufficient detail on what will be achieved in this area by the end of BP1. Given the ESO’s view in its technology investment report that current methods for creating restoration plans will become inefficient without this tool, we consider the BP1 milestones are currently unambitious.	To exceed during RIIO-2 we expect to see dynamic, continuously adjusted restoration plans and processes. We therefore expect to see a delivery schedule which: Clearly specifies what system and process changes will be made during BP1 to make tangible progress against these expectations. Clearly articulates the additional functionality introduced by the decision-making support tool, with key design work concluded by BP1.	<ul style="list-style-type: none"> • We are pleased to note Ofgem’s view that “Most restoration standard deliverables (D3.2.1 to D3.2.3) are sufficiently specified.” and “The implementation of a restoration standard meets our expectations.” • We understand the need for further detail on how we will develop and deliver the decision-making support tool (D3.2.4). • We will provide greater clarity on the system and process changes to be made during BP1 in our updated delivery schedule. • We will also address the additional functionality to be introduced by the decision-making support tool in our updated delivery schedule. • However, it should be noted that delivery of the decision-making support tool will be through an agile delivery method. This means that while we will be able to share the high level functionality to be deployed over the period, detailed milestones will only be available on a rolling basis as the deployment backlog is periodically prioritised.

Figure 6: Summary of assessment - A3.2 Restoration standard

Sub activities: A3.3 Distributed ReStart (Innovation project in restoration)

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
Innovation projects (A3.3) are partially specified, but D3.3.2 lacks detail on outcomes.	Completing and assessing learnings from innovation project ReStart meets our expectations but does not exceed them. We do not consider the current outputs or timelines for developing the next steps from this project are ambitious enough. More tangible progress is needed before the end of BP1 to give us confidence that the ESO will meet its aims to deliver competition everywhere and have the ability to restore a zero carbon system by 2025.	<p>To exceed during RIIO-2 we expect to see fully competitive procurement of black start services that is fair and open to all market participants and technologies. This means the ESO taking full advantage of non-traditional sources of generation at all voltage levels to maximise efficiency and minimise restoration times. We also expect to see dynamic, continuously adjusted restoration plans and processes.</p> <p>We therefore expect to see a delivery schedule which: Reaches conclusions and next steps from project ReStart on an accelerated timeline, and achieves a measurable increase in types of restoration providers by March 2023.</p>	<ul style="list-style-type: none"> • We note Ofgem’s view that “Completing and assessing learnings from innovation project ReStart meets our expectations”. • We will provide greater clarity on the expected outputs and the timeline for developing next steps in our updated delivery schedule. • However, it should be noted the ability to take full advantage of non-traditional sources of generation at all voltage levels for system restoration is highly dependent on the success of the demonstration phase, and the reactions of multiple network companies and potential Black Start providers to the lessons learned through the innovation project.

Figure 7: Summary of assessment - A3.3 Distributed ReStart (Innovation project in restoration)

1(c) Transparency, Data and Forecasting

Assessment of two-year delivery schedule

1(c) Transparency, Data and Forecasting

Relevant deliverables	Met minimum requirements?	Assessment against Ofgem expectations
D1.1.7 D1.4.1 D15.4.1 A15.6 (excluding D15.6.7) A17	No	Meets

Figure 8: Summary of assessment – transparency, data and forecasting

ESO response to activity grading: We are pleased that our activities in this area meet expectations and will provide further information in an updated delivery schedule to meet minimum expectations.

Sub activity: A1.1 Ongoing activities – D1.1.7 produce and publish detailed forecasts, including for national demand and wind generation, provide data and insight to inform Control Centre decision making and performance review and integrate relevant IT projects into business as usual

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
Deliverables on forecasting (D1.4.1) are not specified or time bound.	There is no detail on how the ESO intends to improve its short term forecasting capabilities and by when - this area therefore does not meet our expectations.	Clear deliverables that show how and when the ESO will use innovative new processes to deliver step-changes in forecasting accuracy, both at the GB and regional level.	<ul style="list-style-type: none"> • We believe the relevant deliverables are D1.1.7 not D1.4.1 • We understand Ofgem’s expectations for demand forecasting. We will provide further detail on how we will apply new tools and techniques to improve demand forecasting accuracy in our updated delivery schedule, to be published in October.

Figure 9: Summary of assessment - A1.1 Ongoing activities – D1.1.7 produce and publish detailed forecasts

Sub activity:

- **The data and analytics platform (IT investment reference 220 Data and analytics platform) - (D1.4.1)**
- **A15.4 Manage our operational data and modelling capabilities to underpin all the offline network analysis within the ESO**
- **A15.6 Transform our capability in modelling and data management (excluding D15.6.7 more extensive system access arrangements across the transmission – distribution interface)**

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
Work on the foundational data analytical platform (D1.4.1, A17) is sufficiently specified with clear milestones and success measures. However, details are lacking on what will be achieved with work on ESO-DSO data exchange (D15.4.1, A15.6) during BP1.	<p>The data analytical platform is a key deliverable that if delivered on time with positive user feedback, would exceed our expectations.</p> <p>We welcome the RIIO-2 aim to incorporate ESO-DNO data exchange into the data platform. However, there is insufficient information on what will be delivered in this area by the end of BP1. Given the importance of effective ESO-DNO</p>	Clearer milestones and success measures, which demonstrate more tangible progress in BP1 on ESO-DNO data exchange. This should include specific details on how and when the ESO will work with DNOs to ensure RIIO-2 Business Plans on data exchange are coordinated.	<ul style="list-style-type: none"> • We are pleased that Ofgem view the data and analytics platform as a development that would exceed expectations. • We will provide further information on what can be achieved with work on ESO-DSO data exchange in our updated delivery

coordination to zero carbon operation, we do not think the current timelines are ambitious enough.

schedule in October.

Figure 10: Summary of assessment – Sub activities D1.4.1, A15.4 and A15.6

Sub activity: A17 Digitalisation and open data

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
NA	There is no detail on how the ESO will increase transparency and ensure market participants understand its short term operational decisions – this area therefore does not meet our expectations.	Clear initiatives which demonstrate how the ESO will ensure stakeholders have a high degree of understanding of its real time operational decision making (going beyond opening up data).	<ul style="list-style-type: none"> • We understand the need for further information on how we will increase transparency across our operations. We will be providing details of a Transparency Roadmap as part of our updated delivery schedule in October. • In advance of RII0-2 (Q4 2020-21), we will be publishing significant new and additional information that will drive a step change in transparency and market understanding of our short-term operational decision making. • Our Operational Decision-Making Transparency deliverable will provide details on both actions taken and actions not taken, as well as data and a summary of actions taken out of merit order for operational reasons. Further information on this is provided in our response to ESOQ13.

Figure 11: Summary of assessment - A17 Digitalisation and open data

Role 2: Market development and transactions

Summary of assessment

What	Assessment	Role 2
RIO-2 aims	Ambition (1-5)	4
Two-year delivery schedule	Minimum requirements met (Yes / No)	No
	Ambition (1-5)	3

Figure 12: Role 2 market development and transactions summary of assessment

2(a) Market Design

Assessment of aims

We welcome Ofgem’s support for closer to real time markets and the “ambitious well-formed aims in this area”.

We understand Ofgem’s need for further clarity on “Competition Everywhere” and the need to provide further information on how this applies to other services such as stability, thermal and reactive. We will provide further clarity on our approach to operability services markets in our updated delivery schedule, to be published in October. However, it should be noted that the scope and timing for the delivery of competitive mechanisms for some of the services will remain subject to stakeholder engagement and detailed analysis and design.

We also acknowledge Ofgem’s comments on “to which extent this aim applies across the whole system, including how the ESO intends to interface with emerging distribution-level markets”. We will provide further clarity on our approach to applying whole-system thinking to this aim in our updated delivery schedule, to be published in October. However, it should be noted that much of the activity to achieve consistent and aligned markets and platforms for flexibility services across transmission and distribution sits outside of the ESO’s control.

Assessment of two-year delivery schedule

2 (a) Market Design

Relevant deliverables	Met minimum requirements?	Assessment against Ofgem expectations
A4	Yes	Exceeds

Figure 13: Role 2 assessment of two-year delivery schedule

ESO response to activity grading: We welcome Ofgem’s grading of this activity and agree that it should exceed expectations.

Sub activity: A4.3 Frequency Reform (Response and reserve); And “Competition Everywhere” more broadly

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
<p>The schedule meets our minimum requirement. It is generally clear what the key milestones are during BP1 and the outcomes achieved by March 2023.</p>	<p>A single day-ahead response and reserve market and a single integrated platform for the ESO markets, if implemented on time in a joined up manner with wider system changes and with positive user feedback, would exceed our expectations.</p> <p>We consider the ESO could be more specific on how its markets will introduce ‘competition everywhere’. Those comments equally apply to our two-year assessment.</p>	<p>The ESO could include more specific and measurable deliverables on:</p> <ul style="list-style-type: none"> how it plans to improve its communication of procurement needs its plans for stability, restoration and thermal services during BP1 how in practice it will ensure ESO run-markets are fully coordinated with the evolution of any flexibility markets at the distribution level, to ensure efficient, whole system procurement of system services. 	<p>Communication of procurement needs</p> <ul style="list-style-type: none"> As we engage with stakeholders on the co-creation of new markets and products, we will communicate market volumes at the earliest opportunity. In addition, we are active in the Open Networks WS1A Product 2 (Procurement Processes) workstream, which is currently developing thinking on coordinated market communications and procurement timetables. We will ensure that the outcomes of this work are accounted for in ESO developments. <p>Competition Everywhere</p> <ul style="list-style-type: none"> We understand the need for further clarity on how we will deliver Competition Everywhere across the wider range of services and will provide this through our updated delivery schedule in October. However, it should be noted that where we are developing world-

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
			<p>first markets for complex operational services, there is a lot of detailed modelling, stakeholder engagement and market design work that needs to be done before we can specify a detailed delivery plan.</p> <p>Coordination with distribution markets</p> <ul style="list-style-type: none"> • We are committed to ensuring that markets for transmission system needs are coordinated with the development of distribution level markets. We will provide further information on our approach to this through our updated delivery schedule in October. • It should be noted that our aim to be coordinated with distribution level markets is highly dependent on the actions of multiple network companies.

Figure 14: Summary of assessment - A4.3 Frequency Reform (Response and reserve); and Competition Everywhere

2(b) EMR

Assessment of aims

We welcome Ofgem’s support for our aim to transform access to the Capacity Market (CM) and accept Ofgem’s need for further clarity on the deliverables for the activities relating to both the CM and Contracts for Difference (CfD).

We will provide further clarity on our approach to delivering a step change in the end-to-end experience of participants, implementation of policy changes, and the sophistication and accuracy of procurement recommendations for the CM in our updated delivery schedule in October.

It is important to note though, that the successful implementation of policy and regulatory changes by the Delivery Body (and other EMR Delivery Partners) is dependent on the extent, nature and timing of changes determined by Ofgem and BEIS. This has been recognised by the CM Policy and Delivery Board, chaired by BEIS, which has agreed to manage and prioritise the programme of regulatory change to ensure that it is coordinated and deliverable. This coordination and prioritisation work will need to span across policy and regulation for the CM and CfD regimes.

The amount of policy and regulatory change considered by BEIS and Ofgem is very significant. Some of this has evolved and become clearer since the ESO Business Plan was prepared; for example, the requirements arising from BEIS’s State Aid commitments regarding the CM, including its commitment to implement direct foreign participation in capacity markets. BEIS and Ofgem are also progressing their Five Year Reviews of the CM, which will likely to lead to further regulatory change requirements for the EMR Delivery Body.

As EMR Delivery Body, we always strive to support policy and regulatory change by BEIS and Ofgem, and implement these changes in a timely and efficient manner. We have demonstrated our willingness and ability to be agile and respond swiftly to changing requirements, most recently when helping to shape and deliver rapid regulatory changes required to bring the CM out of suspension and then further to implement rule ‘easements’ to support customers in dealing with the impact of COVID-19. For these urgent and complex requirements, the EMR Delivery Body worked with BEIS in the end-to-end process. We undertook impact assessment, rule drafting and development, customer guidance and then finally implementation into systems and processes. Whilst we are always willing to respond swiftly to changing regulatory requirements by Ofgem and BEIS, it is important to recognise the impact such changes can have on our existing work and change programme, and the improvements and outputs that we aim to deliver.

In assessing our aims, deliverables and performance, Ofgem and the performance panel should take account of this important context.

Assessment of two-year delivery schedule

2 (b) EMR

Relevant deliverables	Met minimum requirements?	Assessment against Ofgem expectations
A5	No	Below

Figure 15: EMR – Summary of assessment of two-year delivery schedule

ESO response to activity grading:

We are disappointed that our proposals for EMR are not considered to meet minimum requirements or expectations.

We believe our plans for RIIO-2 will continue to enhance the customer experience and the overall performance in our role as EMR Delivery Body. We will provide further detail on this in our updated delivery schedule. It is important to note that there have been some significant changes in the policy and regulatory framework since our Business Plan was drafted last year. These include:

- In October 2019, the European Commission confirmed State Aid approval of the Great Britain Capacity Market (CM). BEIS have made several commitments regarding the CM for delivery prior to this year’s CM prequalification process and beyond. We have been working with BEIS, Ofgem and other Delivery Partners to fully scope out what is required to deliver these commitments. Many of these commitments

have required changes to the EMR portal and our processes prior to this year’s prequalification process. Further changes will be required to implement BEIS’s commitments which impact CM agreement management activities.

- Ofgem and BEIS have both considered further changes as part of their Five Year Reviews of the CM. We have supported this work by analysing and discussing change proposals and undertaking impact assessments in terms of our processes and systems.
- The requirements regarding foreign participation in capacity markets have also become clearer as EU-wide methodologies have been developed by ENTSO-E. Some of the requirements and delivery timescales are now clearer, for example the need to put in place common registers by July 2021. We have been working with BEIS and Ofgem on how these requirements could be implemented in Great Britain, including in respect of changes to CM rules and regulations, and are currently assessing the impact of this on our EMR portal and processes during 2020/21 and beyond.
- The COVID-19 pandemic has added a new level of uncertainty and change. The Delivery Body team has adapted to the challenges involved in order to keep day-to-day operations going as much as is possible. We actively support BEIS in their work on easements to mitigate the impact of the pandemic on the CM.
- BEIS are also considering the future arrangements and requirements for CfD and the important role this mechanism can play in meeting the net zero ambition. Among other things, this could mean a greater frequency in CfD rounds and an increase in the number of participants in the qualification and auction processes.

We have risen to these challenges and have been supporting BEIS, Ofgem and our customers through the period of change. As discussed with BEIS and Ofgem, unavoidably, this has had an impact on our work programme and deliverables for 2020/21 and the expected ‘RIIO-1 end point’. These changes will also impact on the deliverables and resource requirements for RIIO-2. We will cover this in our updated delivery schedule.

Sub activity: A5.1 EMR stakeholder and Compliance, CM and CfD auctions

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
Ongoing EMR Delivery Body work (A5.1) needs more granular deliverables each with their own, year by year success measures. In particular, there are no deliverables or success measures on the delivery of policy and system change following CM regulation and rules decisions.	Implement CM policy and system changes in a timely manner (and no later than 12 months following the relevant rules or regulations are laid, unless otherwise stated by Ofgem). Support providers through the Contracts for Difference (CfD) and CM prequalification and auctions by providing accurate and timely guidance on processes and rules. It should ensure a level playing field by adapting engagement strategies and providing targeted support to smaller or newer providers where needed. Readily and accurately present information demonstrating the ongoing effective	The current deliverables under A5.1 are not specific or measurable Deliverables and associated success measures which provide confidence that the ESO will deliver continuous and responsive improvements to prequalification and auction delivery, resulting in the full removal of barriers to entry and measurable improvements in the experience of all parties. Deliverables which commit the ESO undertaking an annual prioritisation exercise of all expected system change requirements by Delivery Partners, which results in a predictable, transparent and	<ul style="list-style-type: none"> • It is our understanding that Ofgem have reached their assessment principally because of a perceived lack of detail in the Business Plan and delivery schedule, rather than because of more fundamental difference in expectations. • As requested by Ofgem, we will provide a more granular view of deliverables and success measures for the CM and CfD processes, as well as policy and compliance work in our updated delivery schedule. • We have highlighted to Ofgem that some

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
	operation of the CM processes with Delivery Partners.	achievable roster of changes to be delivered.	<p>of the expectations set out in the draft determinations are unclear or leave room for interpretation. We will continue to work with Ofgem ahead of the final determinations to seek clarification and a shared understanding of what is expected.</p> <ul style="list-style-type: none"> As part of our updated delivery schedule, we will provide greater clarity on our approach to delivering policy and system change following CM and CfD regulation and rules decisions. As noted above, our work programme and how we deliver this successfully will depend to a significant extent on the nature and extent of regulatory changes required by BEIS and Ofgem, as well as the timing of when these changes are required. We note Ofgem's expectation that policy and system changes should be implemented no later than 12 months following the relevant rules or regulations being laid. This mirrors the commitment Ofgem have made as part of their Five Year Review of the CM to allow a 12 months implementation period, other than for urgent changes. We welcomed this commitment but note that historically this

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
			<p>has not been achieved by Ofgem or BEIS. The EMR Delivery Body has always sought to deliver policy and regulatory change required by Ofgem and BEIS but we have also highlighted the risks and inefficiencies arising from short implementation timelines. The ESO stands ready to deliver on these expectations but would urge Ofgem and BEIS to facilitate this through a coordinated, well-planned change programme.</p>

The Figure 16: Summary of assessment - A5.1 EMR stakeholder and Compliance, CM and CfD auctions

Sub activity: A5.2 Deliver an enhanced platform for the Capacity Market within the single, integrated ESO markets platform (shared with A4.4)

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
<p>The enhanced platform for the CM (A5.2) is partially specified with clear milestones. However, more detail is needed on the specific functionally the platform is aiming to deliver. The ESO should include success measures that relate to the quality of the user experience.</p>	<p>Run a user friendly and accessible EMR IT portal that removes barriers to entry and provides a step change in user experience from RIIO-1. This portal should be adaptable and enable the ESO to respond quickly and cost efficiently to policy changes.</p>	<p>Details which explain how in practice the ESO will develop a highly accessible EMR portal which seamlessly integrates with other ESO markets within the single market platform. This could include the ESO providing more details on its aim in the main Business Plan to 'use the latest data technologies' to help participants understand how they can participate in the CM and guide them through the process.</p>	<ul style="list-style-type: none"> As above, it is our understanding that Ofgem have reached their assessment principally because of a perceived lack of detail in the Business Plan and delivery schedule, rather than because of more fundamental difference in expectations. We will provide greater clarity on the EMR portal development in our updated delivery schedule in October. This will demonstrate that the portal will

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
			<p>deliver a step change in user experience and be adaptable to respond quickly to change. It will also provide further information on how we will help participants understand how they can participate in the CM and CfD regimes.</p> <ul style="list-style-type: none"> In our updated delivery schedule, we will also reflect the impact of the policy and regulatory changes referred to above, and what they mean for the RII0-1 'end point' and for the deliverables and resource requirements for RII0-2. It should be noted that delivery of the single markets platform, and its CM and CfD functionality, will be through an agile delivery method. This means that we will share the high level functionality to be deployed over the period. Detailed milestones will follow on a rolling basis, as the deployment backlog is periodically prioritised.

Figure 17: Summary of assessment - A5.2 Enhanced platform for the Capacity Market within the single, integrated ESO markets platform (shared with A4.4)

Sub activity: A5.3 Improve our security of supply modelling capability

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
Improving security of supply modelling (A3.3) is reasonably specified but could contain more detail on the specific changes to	The ESO's work on improved security of supply modelling, based on the current level of specification	More specific details on improvements the ESO has itself identified to security of supply model inputs and methodologies	<ul style="list-style-type: none"> We are pleased that our work on improved security of supply modelling meets Ofgem's expectations.

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
<p>modelling planned and what accuracy improvements they should achieve by the end of BP1.</p>	<p>and success measures, meets our expectations.</p>	<p>for BP1. The ESO should aim not just to seek endorsement from the Panel of Technical experts (PTE), but to deliver step change improvements in demand forecast accuracy. This could include the ESO expanding on commentary to explain the steps, dates and delivered outcomes involved with:</p> <ul style="list-style-type: none"> enhancing the modelling for distributed generation, duration-limited storage and demand response improving European market modelling in response to interconnection maximising the use of the data from the Distribution Connection and Use of System Agreement modification in RIIO-1. 	<ul style="list-style-type: none"> • We will provide further information, where possible, on the specific changes to modelling and accuracy in our updated delivery schedule in October. We should highlight that potential modelling improvements are influenced by developments in the market and in policy, and so are subject to change. We have already established an annual prioritisation process that involves BEIS, Ofgem and the Panel of Technical Experts (PTE). We will continue to use this process to deliver the improvements expected to have the highest impact on our recommendations. • We note the comment that we “should aim not just to seek endorsement from the PTE, but to deliver step change improvements in demand forecast accuracy”. Whilst it is certainly our intention to deliver step change improvements in forecasting accuracy, we consider this endorsement critical in our role as trusted partner to BEIS and as it serves to provide confidence to wider industry in our modelling.

Figure 18: Summary of assessment - A5.3 Improve our security of supply modelling capability

2(c) Industry codes and charging

Assessment of aims

- We welcome Ofgem’s support for a Digitalised whole system Grid Code and our aims to transform our approach to code management.
- We intend to provide further examples of we could proactively shape markets and frameworks through our updated delivery schedule in October.

Assessment of two-year delivery schedule

2 (c) Industry codes and charging

Relevant deliverables	Met minimum requirements?	Assessment against Ofgem expectations
A6 Develop codes and charging arrangements that are fit for the future A12 Review of the SQSS A15.3 Provide technical expertise into the development of codes and standards. A15.8 Provide technical support to DSO and whole electricity system alignment	No	Meets

Figure 19: Industry codes and charging summary of assessment of two-year delivery schedule

ESO response to activity grading: We are pleased to see that our proposals across codes and charging meet Ofgem’s expectations. We hope that the additional information that will be provided as part of our updated delivery schedule in October will both meet minimum requirements for the two year business plan and exceed expectations.

Sub activity: A6.1 Code management / market development and change; A6.2 EU code change and relationships; A6.3 Industry Revenue Management

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
Several of the deliverables are not specific enough and lack clear measures of success. Ongoing code development revenue management (A6.1 to A6.3) have milestones, but no success measures.	Implementation of code modifications, facilitation of EU driven code changes, implementation of the Charging and Billing system, and work to support the BSUoS task force, is work continued from RIIO-1 that meets our expectations. The ESO has also not provided details on how it will provide insight on charging through its roles in Charging Futures or take a leading role in the Access SCR delivery group. This area of the	Tangible examples of the ESO using its unique insight to organise, convene, build consensus to develop GB industry arrangements in the best interests of consumers (including wholesale market rules, charging methodologies, access rules and technical standards). This includes using its position in ENTSO-E to influence European developments that impact GB. The ESO should also demonstrate the clear consideration of the links	<ul style="list-style-type: none"> • We understand the need to provide tangible examples of how we will drive market and frameworks change in the interests of consumers. We will include an articulation of potential focus areas in our updated delivery schedule in October. • We will also review our deliverables on ongoing code development and revenue management to define measures of

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
	ESO's needs to go further to meet and exceed our expectations.	and dependencies between different markets and across the transmission-distribution boundary. The plan for Final Determinations should include a greater articulation of potential areas of focus.	<p>success in terms of the outcomes we will aim to deliver in the BP1 period.</p> <ul style="list-style-type: none"> We will continue to facilitate the charging debate with industry via frequent Charging Futures forums, in person or virtually, encouraging industry to engage on charging reforms. We aim for these to be held quarterly, but this is subject to suitable content being available. In addition, we will provide further detail on the development of thought pieces to support Ofgem's thinking on the Access SCR, including how this could be implemented in practice.

Figure 20: Summary of assessment - A6.1 Code management / market development and change; A6.2 EU code change and relationships; A6.3 Industry Revenue Management

Sub activity: A6.4 Transform the process to amend our codes

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
Work to transform the codes process (A6.4) has clear milestones and reasonably clear success measures, but would benefit from greater alignment with the aims set out on page 74 of the main Business Plan.	The ESO's work to transform its role in codes has the potential exceed our expectations, subject to further clarity on which of the aims set out in the main Business Plan would be delivered by March 2023.	<p>The deliverables for transforming the codes process clearly commits the ESO to delivering the outcomes set out in its main Business Plan (section 5.4.3.1) by March 2023.</p> <p>Footnote: We note that there is close interaction with the ESO's proposals and wider work on the BEIS-Ofgem Energy Codes Review. While we support the ambitions and encourage the ESO</p>	<ul style="list-style-type: none"> We welcome Ofgem's support for our proposals to Transform the process to amend our codes and agree that these proposals commit us to delivering the outcomes set out in the Business Plan. We will provide further clarity on which of the aims will be delivered by March 2023 in our

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
		<p>progress its thinking further, we will reserve judgement on the detailed proposals. We encourage the ESO to closely engage with us as their thinking progresses.</p>	<p>updated delivery schedule in October.</p> <ul style="list-style-type: none"> Given the ongoing BEIS and Ofgem Energy Codes Review, we will continue to engage with Ofgem, and wider stakeholders, on evolving thinking and plans in this area. Our Business Plan is predicated on the assumption that our proposals are in-line with the outcomes for the Review. If this turns out not to be the case, we may need to adapt our Business Plan accordingly.

Figure 21: Summary of assessment - A6.4 Transform the process to amend our codes

Sub activity: A6.5 Digitalised whole system Grid Code

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
<p>Work on the digitalised grid code (A6.5) is reasonably well specified, but more details could be provided on the level of definition that will be achieved in the associated IT plans by March 2023.</p>	<p>A digitalised whole system technical code exceeds our expectations for RIIO-2, the current delivery plan does not appear to commit the ESO to enough tangible progress during BP1 to exceed our expectations for this period.</p>	<p>A firmer milestone for the digitalised whole system Grid Code for Q4 2023, as well as more tangible deliverables that demonstrate how the ESO will input system operation expertise into distribution-level rules and frameworks.</p>	<ul style="list-style-type: none"> We welcome Ofgem’s support for our proposals to deliver a Digitalised whole system Grid Code We will review our proposals with a view to defining tangible progress that could be made by March 2023 and provide further details in our updated delivery schedule in October. We will review our proposals on the whole system Grid Code; Transform the process to amend our codes; the SQSS Review and providing technical support on codes more broadly, to ensure that the

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
			volume of change is deliverable in this period.

Figure 22: Summary of assessment - A6.5 Digitalised whole system Grid Code

Sub activity: A12 Review of the SQSS; A15.3 Provide technical expertise into the development of codes and standards; A15.8 Provide technical support to DSO and whole electricity system alignment

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
The review of technical standards (A12, D15.8.2) is not well specified. Milestones and success measures focus on general engagement and provide little clarity on the outcomes achieved by March 2023. Likewise, providing technical support to distribution codes (D15.8.1) is not well specified as it does not provide details on what changes might be needed.	We do not think the ESO has demonstrated enough examples of proactively identifying and influencing necessary changes to GB industry frameworks to remove distortions and to ensure a level playing field. We recognise the ESO’s targeted review of the SQSS is dependent on BEIS’ conclusions on technical standards. However, the ESO’s current timelines and evidence of thinking on potential issues fall below our expectations. This is particularly given how important the ESO’s insight to this work is, and also previous commitments to start considering options in 2018/19	Firmer progress and clear direction for the SQSS review, including potential solutions and their timeframes agreed by Q4 2021/22, with quick win changes implemented by March 2023. The plan for Final Determinations should include a greater articulation of potential areas of focus.	<ul style="list-style-type: none"> We will review our proposals for the SQSS review and our provision of technical support for distribution codes in our updated delivery schedule in October. Our proposed approach is to take a strategic view of requirements and to engage with stakeholders on proposals before committing to specific changes, which demand significant time and industry input to deliver.

Figure 23: Summary of assessment - A12 Review of the SQSS; A15.3 Provide technical expertise into the development of codes and standards; A15.8 Provide technical support to DSO and whole electricity system alignment

Sub activity: A6.6 Fixed BSUoS

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
BSUoS task force work (A6.6) is poorly specified, as it assumes an end outcome that is not directly within the ESO’s control and does not consider what success for	NA	NA	<ul style="list-style-type: none"> Success through the BSUoS Taskforce would result in a set of robust and justified recommendations to Ofgem that allow them to direct a way forward for BSUoS

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
the ESO looks like through this work.			<p>charging that is in the interest of consumers.</p> <ul style="list-style-type: none"> • The recommendations will consider the structure and trade offs associated with changes to BSUoS charges, and the potential feasibility of the ESO sharing risk with market participants with regard to BSUoS volatility. • The ESO will work with Ofgem to raise modifications to the CUSC, allowing implementation in line with the Taskforce’s recommendations.

Figure 24: Summary of assessment - A6.6 Fixed BSUoS

Role 3 System insight, planning and network development

Summary of assessment

What	Assessment	Role 3
RIIO-2 aims	Ambition (1-5)	3
Two-year delivery schedule	Minimum requirements met (Yes / No)	No
	Ambition (1-5)	2

Figure 25: Role 3 summary of assessment

Role summary

- We are disappointed in Ofgem’s grading of Role 3 on our delivery schedule. Our Role 3 proposals are vital to each of our four ambitions, particularly our ambition to operate a carbon free system by 2025. Role 3 must provide the modelling, analysis and ultimately the tools (many of which have never been developed before) to support system operation in real time, albeit they are developed in longer term timescales.
- Similarly, we are disappointed in Ofgem’s grading of the Long-Term Network Planning aspects of our plan. Work in this area to broaden the range of potential solutions to system needs, the providers of those solutions, and the development of new complex and bespoke tools to assess their cost and suitability, has already been recognised externally as world-leading and very ambitious.
- We will work with Ofgem to understand their feedback in more detail and to provide a clearer articulation of the collective aims of Role 3, alongside additional detail on our proposals, in our updated delivery schedule in October.
- We agree with Ofgem that any future plans for greater coordination in offshore networks or for early competition in transmission networks may further shape the aims of Role 3 in the future.
- The extent to which we are able to extend our proposed / established processes across the whole system is not entirely within our control, but we will work with our stakeholders to do this where possible.

3(a) Connections and access

Assessment of aims

- Our Connections proposals seek to improve the connections process for both transmission and distribution connecting customers, recognising that DNOs manage connections to distribution networks. Distribution connected customers below 1 MW do not currently come through to the ESO. Our proposals are ambitious in that we must work with all network parties to improve, automate and enhance the customer experience.
- Establishing how we will proactively identify challenges and potential longer-term responses to connection planning issues, particularly in response to offshore transmission and interconnection, are currently being considered as part of our Offshore Coordination Project. Our plans in this area will be developed further following the outputs of that project.
- We do not agree with Ofgem that our RDP proposals do not present a step change from our RIIO-1 work. As we capture learning from our ongoing work on aligned and consistent markets for flexibility, we will be increasingly looking in RIIO-2 at how we can efficiently scale our RDPs for broader roll-out across each DNO area. We believe this is a step change from the approach in RIIO-1, where we set out to develop initial projects to test new ways of working. In RIIO-2, building on this, and also the 2020 work in the Open Networks project, work will further evolve to deliver standardised markets for flexibility services which embed operational co-ordination with DNOs. This is a significant and new piece of work for the industry. Through efficient scaling we will minimise the overall cost of IT infrastructure and impact on both

transmission and distribution control centres. We will also be using RDPs to trial new use cases, for example market development across DNO licence areas. It should also be noted that RDPs are a collaboration vehicle between us and potentially a number of network parties for any one RDP. Progress of these is therefore heavily reliant on all parties involved driving them forward.

- We recognise Ofgem’s requirement for further information with respect to our Connections hub, DER function, and deeper access planning proposals, in particular. We will provide further detail in our updated delivery schedule in October. However, we note that our ability to make changes to system access processes during BP1 is not wholly within our control and will require commitment from other network parties.

Assessment of two-year delivery schedule

3(a) Connections and Access

Relevant deliverables	Met minimum requirements?	Assessment against Ofgem expectations
A14 Taking a whole electricity system approach to connections	No	Meets
A15.2 Provide technical support to the connections process		
A15.5 Ongoing RDPs		
A15.6.7 Deeper Outage Planning go live in Offline Network Modelling		
A16 Delivering consumer benefits from improved network access planning		

Figure 26: Connections and access – summary of assessment of two-year delivery schedule

Activity: A14 Connections

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
14.3 (Establish new DER function) Deliverables to enhance the customer connection experience are reasonably specified, but would benefit from a greater articulation of existing issues for Distributed Energy Resources (DER) and how a new account management function and seminars will address them.	Managing a growing number of connections, establishing account managers for DER and engaging more widely through seminars are steps that meet our expectations. Similarly, establishing forums to coordinate with DNOs (such as the RDPs) to facilitate efficient whole system connections meets our expectations, but in itself does not appear to present a step change from steps taken in RIIO-1.	Clear explanation of the changes that will be made during BP1 to provide a seamless connections experience to all electricity networks across GB, including those connected to the distribution system.	<ul style="list-style-type: none"> • Our proposals seek to improve the connections process for both transmission and distribution connecting customers, recognising that DNOs manage connections to distribution networks. Distribution connected customers below 1 MW do not currently come through to the ESO. • To date we have done a lot of work to bring forward connections through the Appendix G process, which gives greater control to the DNOs while providing visibility to ESO of what is connecting. We will work more closely with DNOs and put in place code modifications/processes to

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
<p>14.4 (Connections hub) The connections hub has milestones but needs details on what functionality phase 1 will deliver.</p>	<p>The connections hub has the potential to exceed our expectations, but needs better specification.</p>	<p>[Clear explanation of the changes that will be made during BP1 to provide a seamless connections experience to all electricity networks across GB, including those connected to the distribution system.] The connections hub has the potential to achieve this, but the ESO should better specify phase 1, including what specific functionality users will benefit from by Q4 2023.</p>	<p>facilitate implementation of Appendix G.</p> <ul style="list-style-type: none"> • Examples of issues that DER customers face include what financial/contracting commitments they are making and what charges they will be exposed to; commercial understanding of the wider industry; understanding of what works might be required to facilitate their connection and understanding operational context. • We can also provide information on commercial arrangements and DSO markets potential. • The new DER function will provide the customer more support on the above areas, bearing in mind that they are not our direct customers. Hence, we have milestones to build closer working relationships with the DNOs to support delivery of this activity. <p>.</p> <ul style="list-style-type: none"> • We will provide more detail of the functionality associated with Phase 1 of the connections hub in our updated delivery schedule. • Essentially the hub will move the existing manual contracting process onto an online system. Transmission users will be able to log into the hub to access their existing connection contracts and to track progress of any new contracts through the process. We will provide further details in our updated delivery schedule. • We consider that the more ambitious aspect of the connections hub deliverable will be working

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
		<p>Details on how the ESO will proactively identify challenges and potential longer-term responses to connection planning issues, particularly in response to offshore transmission and interconnection.</p>	<p>with other network companies (TOs in the first instance) to ensure that different systems can interface with each other/data can be exchanged as required throughout the connections process – this is essential for the process to feel seamless for customers.</p> <ul style="list-style-type: none"> • We will engage with DNOs, in the lead up to RIIO-ED2, to understand how our hub could/should interface with any proposed DNOs systems in future. • Through our engagement with stakeholders such as customers, developers and local government, we have brought many of these issues to the fore in RIIO-1. • The issues in relation to offshore transmission and coordination are currently being considered as part of our Offshore Coordination Project. This forms part of BEIS’s Offshore Transmission Network Review, which will determine what the offshore regime looks like in future. This will direct any changes to our role and we will develop plans accordingly.

Figure 27: Summary of assessment - A14 Connections

Activity: A15.5 Ongoing RDPs

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
<p>A15.5 Work associated with Regional Development Programmes (RDPs) is unclear and not well specified. More</p>	<p>[Managing a growing number of connections, establishing account managers for DER and engaging more</p>		<ul style="list-style-type: none"> • We agree that further detail can be added into our work on RDPs in the delivery schedule. • As the DSO transition develops, so our approach to RDPs evolves. In the last 18

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
<p>explanation is needed on what outcomes and benefits the RDPs will achieve by March 2023, which regions they will focus on and why, how the timelines have been selected and regions prioritised, how in practice IT project 340 will support the March 2023 outcomes, and why each RDP requires its own IT design phase.</p>	<p>widely through seminars are steps that meet our expectations.] Similarly, establishing forums to coordinate with DNOs (such as the RDPs) to facilitate efficient whole system connections meets our expectations, but in itself does not appear to present a step change from steps taken in RIIO-1.</p>		<p>months our focus on RDPs has evolved from creating additional capacity for DER to the delivery of co-ordinated flexible markets for transmission and distribution system needs which brings a greater level of complexity. This work is being developed alongside the 2020 work of Open Networks, ensuring consistency and alignment ahead of RIIO-ED2 in 2023.</p> <ul style="list-style-type: none"> • As our learning from aligned national and local markets develops, we will be increasingly looking in RIIO-2 at how we can efficiently scale our RDPs for broader, standardised role out within each DNO area. This will include working with DNOs and TOs in the development and delivery of co-ordinated service provision for transmission and distribution system needs. Whilst this will build on the work of Open Networks and initial initiatives such as ODFM, we believe this is a step change from the approach in RIIO-1 which saw the initiation of the first RDPs. Through efficient scaling we will minimise the overall cost of IT infrastructure and impact on both transmission and distribution control centres. • New RDPs will also be created to trial new use cases, for example issues across multiple DNO areas. These will be instigated as required. • RDPs are a collaboration vehicle between us and potentially a number of network parties for any one RDP. Progress of these are therefore heavily reliant on all parties' input to collaborate, provide resource and develop IT and communications infrastructure. Timelines have

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
			<p>been developed based on experience to date.</p> <ul style="list-style-type: none"> • We will provide further details on where the RDPs in the BP1 period will focus, what the benefits will be and how investment 340 will support the outcomes in our updated delivery schedule. The Business Plan took a base case number of RDPs; this will be reconsidered in the updated delivery schedule based on latest information. • It should however be recognised that RDPs are an approach to solving particular network needs, some of which have not yet been identified. They will be developed to respond to particular need cases as we move through the RIIO-2 period. • In addition to the six new RDPs that we have committed to in the RIIO-2 period, we will also be completing the IT infrastructure build for two RDPs from RIIO-1. For completeness, these will be added to the updated delivery schedule. • IT investment 340 supports implementation of each RDP. As far as possible this will be a standard solution across all DNOs, but each RDP design phase will consider any specific requirements where DNOs may have different dispatch/interface systems.

Figure 28: Summary of assessment - A15.5 Ongoing RDPs

Activity: A16 Network Access Planning

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
A16.2 Enhancing the NAP could be better	Ensuring NAP processes are consistent across	More measurable commitments to change	<ul style="list-style-type: none"> • We are having ongoing discussions

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
<p>specified – details are needed on how in practice the ESO will increase the visibility of outage costs.</p>	<p>Scotland and England and Wales transmission networks is a minimum step that partially meets our expectations for whole system outage planning.</p>	<p>existing process to deliver optimal whole system access planning, including:</p> <p>Details on specific changes needed to provide visibility and common understanding on the costs and benefits associated with outage changes.</p> <p>Evidence of the ESO taking a proactive role in the development of new and improved NAP processes, influencing (and if necessary pushing back) proposals so they promote consumer’s interests</p>	<p>with TOs and Ofgem on NAP processes, KPIs and any associated incentives – as this work is happening in the lead up to RIIO-2, the detail will not necessarily feature in our two-year delivery schedule.</p> <ul style="list-style-type: none"> • Related to this, we are aware that our current methodology for providing a cost forecast for outage change projects identified under STCP 11-4, needs to be modified to incorporate potential boundary reductions for outages that have not been included in the outage plan but we would reasonably expect to have. This new methodology will need to be developed and approved. This will be detailed within our updated delivery schedule. • With regard to other specific changes needed to provide cost visibility, these are to be determined from an ongoing innovation project. In September, we will work with Edinburgh University to develop an Optimal Outage Planning System, which will support faster outage decision making including integration of a risk-based approach into outage planning (including visibility of costs). • As part of this, we will need to work with the

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
<p>A16.3, A16.4 (and A15.6.7) Deliverables on whole system network access have milestones and success measures, but it is not clear on what deeper access planning means in practice and what additional outcomes will be achieved by Q4 2023. Likewise, it is unclear what level of additional functionality and/or design firmness will be achieved in IT projects 350 and 360 during BP1.</p>	<p>At the moment, there is insufficient information on how in practice outage planning will be extended to account for distributed resources and the timelines for BP1 appear unambitious. To meet our expectations, it is important that detailed thinking is carried out in sufficient time to inform DNO ED-2 Business Plans, and to exceed them, tangible changes to processes should be made during BP1.</p>	<p>A clear articulation of what the ESO envisions by deeper, whole system access planning and the benefits and outcomes achieved in this area during BP1 (including how they build on deeper access planning delivered at the end of R110-1).</p>	<p>TOs to determine what information would be useful, including what time horizons the cost information would cover, whether the cost information was ex ante or ex post and how granular the information would be.</p> <ul style="list-style-type: none"> Further details of the outcomes to be achieved from greater cost visibility will be included in our updated delivery schedule. We will provide a clearer articulation of what we mean by deeper access planning, the timescales and outcomes involved, and what the IT projects will deliver in our updated delivery schedule.

Figure 29: Summary of assessment - A16 Network Access Planning

3(b) Strategy and Insights

Assessment of Aims

- We disagree with Ofgem’s view that we should monitor and evaluate previous analysis/scenarios, including by back casting. Due to the evolving nature of the FES process coupled with the pace at which the external political, regulatory and operational environment changes this would difficult to achieve and of little benefit.
- We consider that the FES annual process already covers much of Ofgem’s expectations in terms of working with other licensees to deliver a whole system publication and providing accurate and consistent Great Britain data into European processes.
- We will provide additional information on our proposed new models to support the FES process and how the SOF may evolve in our updated delivery schedule.

Assessment of two-year delivery schedule

3(b) Strategy and Insights

Relevant deliverables	Met minimum requirements?	Assessment against Ofgem expectations
D1.1.6 (sits in Role 1) - Assessment of future operability challenges communicated through the Operability Strategy Report A13 – Leading the debate A15.1 - Develop the <i>System Operability Framework (SOF)</i> and provide solutions up to real time of ownership of network related operability issues. D15.4.2 - Technical modelling for use across the ESO – ongoing development and support of system data and models used to analyse future network needs and operability solutions by different teams in the ESO A15.9 - Identify Future operability needs across whole energy system	No	Meets

Figure 30: Strategy and Insights – summary of assessment of two-year delivery schedule

Activities: A15.1, D15.4.2 and A15.9 Future operability needs

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
Deliverables on the System Operability Framework (SOF) (D1.1.6, A15.1) and to identify future operability needs (A15.9) are poorly specified, lacking clear milestones and success measures. The ESO should set out what improvements will be made and when.	The continued consideration and communication of future operability challenges (including the production of SOF and Operability Strategy Reports) meets our expectations.	We also expect to see details on how the ESO will ensure all stakeholders have a strong understanding of its future operational strategy and what this means for their future participation in ESO markets and the NOA. In particular, we expect to see all insight and scenarios documents (including the <i>FES</i> , <i>ETYS</i> , Operability Reports, and the <i>SOF</i>) working together seamlessly to present a clear and accessible view of all future needs across the whole electricity system, to maximise the number solutions that come forward.	<ul style="list-style-type: none"> • Currently our SOF publications provide a technical view of future system operation challenges and the Operability Strategy report sets out how we will respond to these challenges. The Operability Strategy Report also sets out how stakeholders can participate in the NOA pathfinders. • We intend to undertake a review of our publications to ensure that they work together as a suite of documents. This review is looking to ensure that our publications are accessible and transparent to stakeholders and clearly set out future requirements. • We will provide further milestones

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
			and success measures for the SOF and identification of future operability needs in our updated delivery schedule.

Figure 31: Summary of assessment - A15.1, D15.4.2 and A15.9 Future operability needs

Activity: A13 Leading the Debate

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
<p>Deliverables in A13 are not well specified. The majority do not have success measures.</p>	<p>(A13.1-3) The continued production (with incremental year-on-year improvements) of the <i>Future Energy Scenarios (FES)</i>, <i>Winter Outlook and Review</i>, <i>Summer Outlook</i> and other thought pieces would meet our expectations. As part of this, we expect to see clear coordination with other Licensees (e.g. GSO, DNOs) to ensure cross-sectoral interactions are clearly taken into account in future scenario development processes. We also expect to see the ESO providing accurate and consistent GB data into European processes via its ENTSO-E membership.</p>	<p>For the <i>FES</i> we expect to see the ESO monitoring and evaluating previous analysis/scenarios, including by back casting, to improve accuracy and explaining clearly the reasons for deviations between forecast and realised outcomes. To provide this confidence, the ESO should include more details on changes to demand models and the specific improvements expected during BP1.</p> <p>We would also expect to see the ESO proactively bringing together as many industry parties as possible to identify consistent pathways to achieving scenarios that meet decarbonisation targets, across the whole system. The ESO should more clearly explain the link between the ambition to support DNOs to develop a regional <i>FES</i> and the deliverables in the delivery schedule.</p> <p>We also expect to see details on how the ESO will ensure all stakeholders have a strong understanding of its future operational strategy and what this</p>	<ul style="list-style-type: none"> • We disagree with Ofgem’s feedback in terms of actions needed to exceed expectations around back casting as this would be impossible to achieve at a meaningful level. • Firstly, the <i>FES</i> is a credible range of scenarios built from stakeholder feedback, research and expert knowledge. It is intended to give a credible range and not a forecast. One would therefore assume that acceptable performance would be for outturns to be within that range. However, situations occur that could not, or historically, have not been possible to forecast. For example the introduction of Feed In Tariffs for solar which saw massive increases in capacity not expected by anyone in the market, or more recently, the corona virus outbreak. It should be noted that

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
		<p>means for their future participation in ESO markets and the NOA. In particular, we expect to see all insight and scenarios documents (including the <i>FES</i>, <i>ETYS</i>, Operability Reports, and the <i>SOF</i>) working together seamlessly to present a clear and accessible view of all future needs across the whole electricity system, to maximise the number solutions that come forward.</p>	<p>we are also reflecting and amending the scenarios based on stakeholder views.</p> <ul style="list-style-type: none"> • There are also practicalities as to what is involved in back casting. While we can compare our forecasts and outturn system demands and generation this needs to be done on a weather corrected basis and can only be done at a transmission level without full detail of the nature of the demand and generation. Our process involves bottom up forecasting, many aspects of this do not have reliable actual data points or these are not available until a considerable time after the event. Therefore, we cannot identify the areas of variance within our scenarios to a detailed level. Once we know some differences, we would only be able to infer what caused some of these changes. • The way in which we undertake the FES currently is to adjust our bottom up process outputs each year to system actuals to keep them as close to outturn as possible. Using our bottom up processes we include as much actual data as possible. Where this does not behave as we expect we

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
			<p>investigate and engage to understand this to reflect our scenarios. We begin with the scenario framework, assessing its suitability each year. The process is consulted upon and documented in our scenario framework document giving reason for changes and how this will be applied to the new scenarios. Each year we make modelling improvements as well as collate new information. For demand including embedded generation and demand side response we report on the changes to our modelling methodology and the performance of the recent outturn winter peak demand to Ofgem as part of the Capacity Mechanism process.</p> <ul style="list-style-type: none"> Ofgem has clarified that back casting would involve a lessons learnt process, looking at what has happened since scenario development that may lead to different 'actual' outcomes. We will continue to have discussions with Ofgem on their expectations on this prior to final determinations and, depending on the extent of additional outputs required, assess the feasibility of the requirements and need for

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
			<p>additional resource to meet them.</p> <ul style="list-style-type: none"> • As part of our demand forecasting for EMR we will continue to report on the performance of our forecasts in the shorter term and report on the improvements we make in our electricity shorter term forecasting. • We go through a process annually to assess the performance and relevance of our bottom up models and make improvements as required. We have proposed development of a new electricity model, currently called AEDAS which pulls together all the individual aspects of demand and some supply. Providing a more robust solution allowing for greater granularity of information to be aggregated and stored. This is also likely to include some sort of database and platform for sharing this data. • We will seek to provide greater clarity on changes to demand models in our updated delivery schedule in October. • The areas that Ofgem describe in their 'meeting expectations' category already form part of the annual FES process, namely

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
			<p>working with other licensees (given the whole system nature of the document) and feeding into European processes.</p> <ul style="list-style-type: none"> • We are fully supportive of the distribution <i>FES</i> process and the data sharing progress we have seen so far. The <i>FES</i> pulls together a GB picture based on views of the energy industry and more widely including those on a local level. We will support the DNOs to build their <i>FES</i> with the knowledge we have from our own <i>FES</i> process. More details will be provided on this in our delivery schedule. • The development of the <i>FES</i> already includes coordination across DNOs and GSOs. This has been enhanced this year with the introduction of the network forum. We will continue to build on this and align where appropriate with the work from Open Networks, further increasing the building block inputs and data sharing. This will then start to increase knowledge sharing on a geographical basis which will feed in to the <i>ETYS</i> and <i>NOA</i> and other deliverables in our RIIO-2 proposals. • As set out above, we intend to undertake a central review of our publications to ensure

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The ESO does not explain what insights beyond <i>FES</i> (A13.4) will be provided in practice and there is no information to understand how extensive these will be.	Whilst the provision of ‘deeper’ whole system insights and analysis ‘beyond <i>FES</i> ’ could potentially exceed expectations, the lack of information means we cannot conclude that these measures exceed our expectations now.	<ul style="list-style-type: none"> • We will provide further details on this deliverable in our updated delivery schedule. 	that they work together as a suite of documents. This review is looking to ensure that our publications are accessible and transparent to stakeholders and clearly set out future requirements.

Figure 32: Summary of assessment - A13 Leading the Debate

3(c) Long term network planning

Assessment of Aims

We are very disappointed in Ofgem’s grading of the Network Development aspects of our plan. Work in this area has already been recognised externally, from a NIA project with the University of Melbourne, as world-leading and very ambitious.

As for Role 2, we understand Ofgem’s need for further clarity on “Competition Everywhere” in relation to network planning and how our proposed activities come together to meet the aims set out in our business plan. We will provide further clarity on how our approach to expanding the *NOA*, enhancing competition in network planning and developing new tools will all come together, in our Updated delivery schedule to be submitted in October.

Analytical tools timelines are already challenging because the main tool that supports the *NOA* process, the economic assessment tool, is already stretching the capability of available assessment techniques due to the number of aspects we need to evaluate and the size of the system they need to be assessed for. The new tools we are developing have not been developed anywhere in the world before, are largely bespoke and technically challenging and require input from academia to build. We therefore believe we are adopting an efficient and pragmatic approach and do not propose to revise the timescales associated with their development in our plan.

Our plans also account for the need to retender for our economic assessment tool in BP1 following the current tool contract expiration. The other new tools that we are developing will be affected by this. They would potentially need to be developed to work alongside a new economic assessment tool, depending on the outcome of the retendering process, so we would want to ensure that the retender process occurs prior to development of other new complex tools.

Key outcomes in this area for the BP1 period are:

- NOA and NOA pathfinders projects will remain separate processes but be brought together under the NOA umbrella; with learning from the NOA pathfinder projects incorporated into the NOA methodology on an ongoing basis
- We will take steps to widen the NOA to study more of the network and give more recommendations generating more consumer value. We will work with DNOs and TOs to identify and seek resolution to regulatory funding challenges associated with broadening participation in our NOA and NOA pathfinder work
- We will start to engage with DNOs, providing bespoke support to help them implement their own NOA-type activity
- And lastly, the new tools will enable the above to come together: By March 2023, we will have retendered our Economic Assessment tool, the core tool for the NOA, and implemented Probabilistic Modelling. The new Voltage Optimisation tool will be at the testing phase and the Stability Assessment tool will be ready to go into the testing phase.

Assessment of two-year delivery schedule

Relevant deliverables	3 (c) Long term network planning	
	Met minimum requirements?	Assessment against Ofgem expectations
A7 Network Development	No	Below
A8 Implement and enhance competition to enable all solution types to compete to meet transmission needs		
A9 Extending NOA to end-of-life asset replacement decisions and connections wider works		
A10 Support decision making investment at the distribution level		
A11 Enhance our analytical capabilities to support these activities		

Figure 33: Long term network planning – Summary of assessment of two-year delivery schedule

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
A7 – A11 Overall, the deliverables in this category lack clear milestones and success measures. The ESO needs to clearly explain how deliverables across A7 to A11 come together to form a clear set of aims for this role, making sure the statements in the main Business Plan and delivery schedule are aligned.	As a minimum expectation we expect to see the ESO identifying and assessing options (based on robust cost benefit analysis) for solutions to ensure efficient long term design and operation of electricity transmission system, encompassing onshore, offshore and interconnection. It should proactively identify and assess all types of solutions (including transmission, distribution network	A clearer articulation of how activities in this area come together to deliver overall role aims The ESO’s deliverables should clearly demonstrate how, by the end of BP1, the ESO will be able to perform an annual co-optimised assessment of all solutions to all transmission network needs.	<ul style="list-style-type: none"> • We are disappointed with Ofgem’s scoring of this area of the delivery schedule. This area of work is currently world leading and therefore very ambitious by its nature. • The timescales associated with the development of new tools to support our proposed long term network planning processes are dictated by the need

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
<p>A7 There is no articulation of the enhancements will be made to the <i>ETYS</i> or <i>NOA</i></p>	<p>solutions and non-network solutions) on a coordinated and consistent basis.</p> <p>Finally, it should procure longer-term balancing/network solutions through well-defined, timely, clear needs specifications.</p> <p>While it is possible that the ESO's deliverables (A7 to A11) seek to achieve this, they are currently insufficiently specified for us to conclude this. We cannot see enough clear progress from work initiated in RIIO-1 under the network development roadmap for this work to meet our expectations, particularly considering the increase in requested funding for this role.</p>	<p>We expect to see details on how the ESO will ensure all stakeholders have a strong understanding of its future operational strategy and what this means for their future participation in ESO markets and the <i>NOA</i>. In particular, we expect to see all insight and scenarios documents (including the <i>FES</i>, <i>ETYS</i>, Operability Reports, and the <i>SOF</i>) working together seamlessly to present a clear and accessible view of all future needs across the whole electricity system, to maximise the number solutions that come forward.</p>	<p>for the tools to work coherently together. Once developed rigorous testing phases are also required to ensure they improve on our existing analysis. Due to the cutting-edge nature of the work we are doing, these tools are largely bespoke.</p> <ul style="list-style-type: none"> • However, we agree that there is more detail we can add to the updated delivery schedule to demonstrate progression and transparency of work in this area. • We will therefore add further clarity around the aims of Network Development and how these fit with the ambition when we submit our updated delivery schedule. • Stakeholder engagement forms a part of our publication process for <i>ETYS</i> and <i>NOA</i> each year and we look to demonstrate year on year where we have made improvements in response to stakeholder feedback. • By RIIO-2 we will have redesigned our Network Development roadmap website with dedicated pages for each <i>NOA</i> pathfinder project. This will help ensure our stakeholders have a strong understanding of our <i>NOA</i> pathfinder

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
			<p>projects and how they can get involved.</p> <ul style="list-style-type: none"> • In a review of ESO publications this year, we will look at how our publications come together as a package and look to make improvements to the way we give information to stakeholders. The review will focus on the transparency and accessibility of our documentation, including the <i>ETYS</i> and <i>NOA</i>. • We also intend to develop our processes to allow offshore wider works (OWW) to be assessed within the <i>NOA</i> and we will provide further details on this in our updated delivery schedule. • We believe that our insights documents have consistently highlighted the linkages between themselves in a coherent and coordinated way shedding light on future system needs. We have taken this a step further with our Pathfinder projects which package up the most pressing needs allowing industry participants to provide solutions to be assessed through competitive tender. The next evolutionary step is likely to come from the Early Competition Plan through the introduction of frameworks to

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
<p>A8 The deliverables to enable all solution types to complete in the NOA provide very limited tangible detail on what the ESO plans to do in practice or the outcomes and benefits it hopes to achieve by the end of March 2023.</p>	<p>As a minimum expectation we expect to see the ESO identifying and assessing options (based on robust cost benefit analysis) for solutions to ensure efficient long term design and operation of electricity transmission system, encompassing onshore, offshore and interconnection. It should proactively identify and assess all types of solutions (including transmission, distribution network solutions and non-network solutions) on a coordinated and consistent basis. Finally, it should procure longer-term balancing/network solutions through well-defined, timely, clear needs specifications.</p>	<p>The ESO’s deliverables should clearly demonstrate how, by the end of BP1, the ESO will be able to perform an annual co-optimised assessment of all solutions to all transmission network needs. Additionally, the ESO should demonstrate how it plans to proactively encourage new and innovative solutions from an increasingly diverse range of providers to in order to maximise the solutions considered. Specific changes to the plan include: details of what tenders will be run, why they have been prioritised, and what benefits they will create details on how in practice tenders will be improved details on the specific blockers and regulatory hurdles the ESO needs to address during BP1 and how it intends to address them</p>	<p>effectively support more 3rd party solutions into the NOA annual process.</p> <ul style="list-style-type: none"> • It is important to note that not all network needs can currently be managed and assessed via the single annual NOA process due to the vast complexity that this creates. We will provide greater insight into how we believe the annual NOA process and NOA pathfinder projects will work together under a single methodology document in our updated delivery schedule. • We will provide further details on proposed tenders in line with our updated <i>Network Development Roadmap</i> where the need has been identified • However, due to the nature of the process, we may not be able to identify all future system needs and hence tender requirements. This is because system requirements are not identified only in long term planning. Our control room experience and short term operability analysis may also identify issues as the network evolves and new NOA pathfinder projects may be used to resolve these. We

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
<p>A9 Deliverables to expand <i>NOA</i> to end of life replacement and connection wider works contain unspecific milestones and success measures (e.g. “review existing network planning processes” and “yield benefits for consumers”).</p>			<p>will continue to learn from each tender process that we undertake and these learnings will be incorporated into the <i>NOA</i> methodology, becoming BAU as each project matures.</p> <ul style="list-style-type: none"> • We are already in discussion with Ofgem’s charging teams about some of the blockers that we have identified following recent pathfinder tenders. However, we will provide further details of how we propose to address the blockers that are within our control in our updated delivery schedule. • We will provide further milestones and success measures within our updated delivery schedule.
<p>A10 Supporting DNO’s to make <i>NOA</i> type assessments contains no detail or success measures.</p>	<p>Assisting the DNOs to develop network planning is an area where the ESO could provide significant expertise and benefits, and in doing so exceed our expectations, but the details of A10 are at this stage not defined. The proposed timelines appear inconsistent with the development timelines for the DNO’s Business Plan.</p>	<p>A firmer, more detailed plan on how the ESO will assist DNOs on network planning, including when and how it will input to DNO’s RII0-2 Business Plans.</p>	<ul style="list-style-type: none"> • We will provide further milestones and success measures within our updated delivery schedule.
<p>A11 Enhancements to analytical capabilities has some clear milestones, but success measures are too generic and there is no clear explanation of</p>	<p>We do not consider enough progress is being made to develop and build the Stability Assessment and Voltage Optimisation tools during BP1. The ESO</p>	<p>An explanation of how economic and technical studies will be contained within a single platform, with clear associated deliverables on this</p>	<ul style="list-style-type: none"> • The timelines we currently have for the voltage and stability tools are already very ambitious due to the scale and complexity

Minimum requirements feedback (Ofgem)	Expectations (Ofgem)	Key actions needed to exceed expectations (Ofgem)	ESO response
<p>the specific outcomes achieved by the end of BP1. The main Business Plan makes reference to the ESO integrating these tools with other ESO network planning tools to better optimise decision making, as well as “combining the economic and technical studies within a single platform”, but the delivery schedule does not appear to address these aims.</p>	<p>should be including stability and voltage considerations within a coordinated network needs assessment by the end of BP1 at the latest to meet our expectations.</p>	<p>More ambitious timelines for including stability and voltage tools within the network assessment process.</p>	<p>of the analysis they need to perform. Timings are also affected because the main tool that supports the NOA process, the Economic Assessment tool, is needs to be retendered in BP1 to ensure we continue to get the benefit of the efficient procurement of ‘off the shelf’ functionality where it is available.</p> <ul style="list-style-type: none"> • The other new tools that we are developing will potentially need to be developed to work alongside a new economic assessment tool. These new tools are highly complex and have not been developed anywhere in the world before, hence we are working with academia to do this. It is expected that unknown challenges and setbacks will occur during development, plus adequate time needs to be set aside for rigorous testing, therefore we do not propose revising the already challenging timescales associated with their development. • Our reference to a single platform does not directly translate to having a single tool - the future state will not be just one tool that assesses all network needs and all solutions at the same

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			<p>time, but rather more of a modular approach where tools can interface with each other. When the process is considered holistically we will be able to make informed decisions in a co-ordinated manner. We will add more to the delivery schedule on this.</p> <ul style="list-style-type: none"> • The University of Melbourne NIA project supports our points on complexity. The project has highlighted some of the challenges with tool development such as striking the correct balance of NOA review frequency, system operation representation versus computation complexity and analysis automation.

Figure 34: Summary of assessment - Long term network planning