

Guidance

RIIO-ED2 Business Plan Guidance

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This document sets out the information that should be included in electricity distribution network operators' RIIO-ED2 Business Plans and how we will assess those plans.

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1. Introduction

- 1.1. RIIO-ED2 will last for five years, starting on 1 April 2023. This will be a critical period in supporting the decarbonisation of the energy system and the wider economy and vital for the UK's ambitions to hit Net Zero targets.
- 1.2. In the RIIO-ED2 price control, we will set regulated revenues and required outputs for the electricity distribution network operators (DNOs). To do this, we need information from the companies on the activities that they intend to undertake in RIIO-ED2, and their associated costs. Companies will provide this information to us in the form of a Business Plan, which we will then assess. Under the Business Plan Incentive (BPI), companies may earn a reward or be penalised based on our assessment of their plans.
- 1.3. The DNOs will submit draft Business Plans to the RIIO-2 Challenge Group on 1 July 2021 and final Business Plans to Ofgem on 1 December 2021. In developing their plans, it is essential that companies carry out robust and high quality engagement with their stakeholders.¹ Through the enhanced engagement framework, companies should also engage with the RIIO-2 Challenge Group and the Customer Engagement Group (CEG) that each company has established.
- 1.4. This document sets out the information that should be included in companies' Business Plans and how we will assess those plans.

¹ By stakeholders, we mean individuals, organisations or communities that are impacted by the activities of the network company. Stakeholder engagement should consider the needs of existing and future consumers.

2. An open and transparent approach to Business Plans

Track-record and Business Plan commitment

- 2.1. In assessing Business Plans, we will consider how deliverable the plans are in the context of past performance and the level of commitment provided for delivering the activities and outcomes set out in the plan.
- 2.2. For the avoidance of doubt, we will not be assessing RIIO-ED2 Business Plans on the basis of past performance. However, we believe it is appropriate for us, and for other stakeholders, to consider proposals for RIIO-ED2 in the context of each company's past performance.
- 2.3. As a minimum requirement under Stage 1 of the BPI, Business Plans must therefore include an explanation of:
 - delivery against RIIO-ED1 output targets and incentive mechanisms including, where appropriate, how performance compared against any targets/ambition declared by the company in their final RIIO-ED1 Business Plan. This must include an explanation of performance in the areas of: Connections (Time to Connect Incentive and Incentive on Connections Engagement), Social Obligations and Customer Service (Customer Satisfaction Survey, Stakeholder Engagement and Consumer Vulnerability Incentive and Complaints Metric), Reliability and Availability (Customer Interruptions and Customer Minutes Lost under the Interruption Incentive Scheme), Environment (Business Carbon Footprint, SF₆, fluid filled cables, management of losses and the use of the visual impact allowance) and Safety.
 - how expenditure within the control period differed from allowances set at the outset of RIIO-ED1.
 - what factors contributed to differences between allowances and expenditure, and how these factors have been considered in preparing the RIIO-ED2 Business Plans. Business plans must include this information in respect of (at least) the following cost categories: Network Reinforcement, Replacing & refurbishing equipment, Network Faults, Operational Support & Business Support

- the returns companies earned over the RIIO-ED1 period, and key drivers behind these returns. These must be expressed in terms of Return on Regulatory Equity (RoRE).
 - the level of profit payment distributed to investors over the RIIO-ED1 period.
- 2.4. Where a DNO is forecasting a significant increase (in comparison to RIIO-ED1) in either an activity or a level of performance, these forecasts must be accompanied by a description of the arrangements that will need to be put in place to support the increase, together with supporting evidence. For example, this could include evidence that the DNO has considered the implications that the increase may have on its workforce and supply chain.
- 2.5. Our assessment will also take into account the level of commitment set out in the plan for delivering the outcomes it contains. The Business Plan must set out how the company intends to structure pay and reward within the organisation to achieve the delivery of commitments set out in its Business Plan.
- 2.6. To satisfy the minimum requirement in this area, the Business Plan must contain assurance from sufficiently independent directors that the plan and associated costs have been tested for accuracy, ambition and efficiency.

Giving consumers a stronger voice

- 2.7. We expect DNOs to work with their CEGs and the RIIO-2 Challenge Group to seek challenge and scrutiny of their Business Plan proposals.
- 2.8. As a minimum requirement under Stage 1 of the BPI, Business Plans must set out how they have been designed using the enhanced engagement processes. To do this, Business Plans must include evidence of:

- appointment of CEGs – including timely appointment of groups, governance arrangements at appointment and on an ongoing basis, among other things as described in the enhanced engagement guidance document.²
- effective engagement with CEGs and the Ofgem RIIO-2 Challenge Group.
- robust and high-quality engagement with stakeholders by the company in designing the plan.

2.9. In assessing DNO engagement with CEGs and the Ofgem RIIO-2 Challenge Group, Ofgem will take into account the extent to which effective engagement has been facilitated by companies providing a draft of their Business Plans in July 2021 that reflects the guidance in place at that time.

2.10. Additionally, in order to facilitate stakeholder engagement ahead of the planned open hearings, each company must publish its final Business Plan on its website. In doing so, companies should ensure maximum transparency by publishing the plans in as full a form as possible. Where companies redact information from the published plans on grounds of commercial confidentiality (or any other reason), the reasons for such redactions must be clearly and comprehensively set out in an explanatory statement published alongside the plan. For example, if information is redacted on grounds of commercial confidentiality, we would expect to see an explanation of the particular commercial interest that the company considers would be prejudiced by disclosure.

2.11. In assessing the company's compliance with the minimum requirements on enhanced engagement set out in paragraph 2.8, Ofgem will take into account stakeholder feedback it receives on the level of transparency demonstrated by companies and reasoning given for any redactions amongst other relevant considerations.

2.12. Separately, as a minimum requirement under Stage 1 of the BPI, the Business Plan must set out the company's approach to ongoing stakeholder engagement in RIIO-ED2, including a strategy for engagement as well as a set of proposed commitments to deliver the strategy within RIIO-ED2. This must recognise the changing demands on

² [Enhanced Stakeholder Engagement Guidance for RIIO-ED2 - Version 1](#)

the local grids expected from users and consumers in line with Government's climate change ambitions. Each company's strategy must:

- be strategic and proportionate, including through setting out how the company's approach reflects the particular circumstances of the company's geographic regions and its various network users, both domestic and industrial.
- be inclusive of all stakeholders, including through a consideration of the needs of both existing and future consumers as well as vulnerable and hard-to-reach groups.
- be responsive to stakeholder needs, including through setting out how the company will maintain an up-to-date understanding of stakeholders' needs as well as how it will ensure views are captured and incorporated into the day-to-day operation of the business.
- include clearly defined performance commitments (relating to stakeholder engagement) which are appropriate, well-evidenced and stretching.
- be transparent, including through setting out how the company will measure progress against its stakeholder engagement commitments as well as any consequences of non-delivery of commitments.
- demonstrate senior-level buy-in and that engagement runs through all levels of the organisation.
- incorporate and build on the best practice methods learned in RIIO-ED1 and consider best practice methods employed in other industries.
- include effective RIIO-ED1 engagement initiatives as business as usual (BAU) activities.

3. Delivering value for money services for customers

Introduction

- 3.1. In our RIIO-ED2 Framework Decision, published in December 2019,³ we stated that we would consolidate the six RIIO-ED1 output categories into three consumer-facing output categories. These are:
- meet the needs of consumers and network users.
 - maintain a safe and resilient network.
 - deliver an environmentally sustainable network.
- 3.2. The Framework Decision set out our overarching framework for outputs and incentives to deliver these outcomes. It said that we will:
- set minimum standards of performance which we will impose through the introduction of Licence Obligations (LOs).
 - capture outputs directly associated with baseline funding through Price Control Deliverables (PCDs).
 - apply Output Delivery Incentives (ODIs) where these may be in the interests of consumers and other network users.
- 3.3. In our Sector Specific Methodology Decision, published in December 2020, we confirmed the common output and incentive arrangements that will apply to the DNOs in RIIO-ED2.⁴ We also confirmed that companies have the opportunity to propose

³ In January 2020 we issued an update to the [RIIO-ED2 Framework Decision](#), to correct a reference in paragraph 1.16. Both versions are available on our website.

⁴ For a summary of common output and incentive arrangements for RIIO-ED2, see the Overview document and Annex 1 of our [RIIO-ED2 Sector Specific Methodology Decision](#). A summary table of outputs and incentives set out in the RIIO-ED2 Sector Methodology Decision also appears at Appendix 6 to this Business Plan Guidance.

bespoke outputs in collaboration with their stakeholders and CEGs in their Business Plan.⁵

- 3.4. As a minimum requirement under Stage 1 of the BPI, the Business Plan must set out whether each output (common or bespoke) the company will deliver is an ODI, LO or a PCD. The BP must also set any additional resourcing requirements associated with the delivery of outputs, where the resource required is clearly identifiable within the Business Plan and expected to increase significantly from historical levels.⁶

Proposals for bespoke outputs

- 3.5. As mentioned above, companies have the opportunity to propose bespoke outputs in collaboration with their stakeholders and CEGs in their Business Plans. Bespoke outputs can take the form of LOs, ODIs or PCDs.
- 3.6. Where relevant, company proposals for bespoke outputs should:
- reflect the network services that existing and future consumers/network users and/or wider stakeholders require.
 - be as complete as possible in capturing the activities and costs of the company in the relevant area.
 - be measurable and reportable.
 - allow comparison of performance across companies, where there is sufficient commonality.
 - capture the long-term nature of outputs, including how they will deliver, or facilitate the delivery of, benefits beyond the RIIO-ED2 price control period.

⁵ Common outputs apply to all or some of the network companies, whereas bespoke outputs apply to one company.

⁶ In our [Sector Specific Methodology Decision](#), published in December 2020, we confirmed the common output and incentive arrangements that will apply to the DNOs in RIIO-ED2.

- set stretching targets which are well-evidenced and deliver clear outcomes/outputs.

3.7. Where bespoke outputs are proposed, companies should also address the following points as part of their justification:

- why the activity in question is best dealt with through the RIIO-ED2 price control.
- how the proposal is backed by robust evidence and justification (such as cost-benefit analyses).⁷
- why the output is required in addition to the common RIIO-ED2 arrangements. This should include DNOs setting out why the suite of RIIO-ED2 outputs and incentives will not drive the outcomes to be delivered by the bespoke output proposal.
- what value consumers will receive from a proposed new service level and, by extension, the potential associated reward and/or penalty, and the extent to which these are symmetrical, in terms of value and likelihood of outcome.
- the extent to which an independent measure of the existing level of service that consumers receive is available and the degree to which the target level being proposed represents an improvement on this.
- the level of service that is provided by other companies/comparators (where available) in the area of activity in question.
- the activities (and indicative cost) associated with achieving the targeted level of service.
- the proposed consequences to the DNO if performance falls below target level.
- whether any costs associated with the bespoke output have been included elsewhere in companies' expenditure proposals. Any such costs should be clearly identified to avoid double counting.

⁷ Please see our requirements for cost-benefit analysis in Section 5 of this guidance.

- 3.8. The value of bespoke ODIs should be at least 0.25% and up to 1% of base revenue (ie the maximum reward or penalty available under a bespoke ODI should be at least 0.25% but not more than 1% of base revenue). Bespoke PCDs should have a value of at least £15m per project.⁸

Meeting the needs of consumers and network users

Vulnerability Strategy

- 3.9. Submitting a Vulnerability Strategy is a minimum requirement under Stage 1 of the BPI. A Vulnerability Strategy in the Business Plan must set out the company's proposed approach to protecting consumers in vulnerable situations and delivering support associated with the activities of the DNO in RIIO-ED2. It must address the three primary areas of focus as outlined in the SSMD: vulnerability to a loss of supply; being in, or at risk of, fuel poverty and the risk of being left behind by the energy system transition towards Net Zero. As a minimum requirement under Stage 1 of the BPI, DNOs' strategies must:
- include an assessment of the vulnerability issues prevalent in the company's region and evidence of how this informs its proposed approach.
 - set out a clearly articulated vision for addressing vulnerability issues identified, identifying links between the proposed deliverables and outcomes and the benefits these aim to deliver.
 - demonstrate how the company will deliver the standard of service outlined in the principles and baseline expectations in Appendix 1.
 - include deliverables which are specific, time bound and relevant.⁹ A company should indicate if in their view a deliverable exceeds the baseline expectations and

⁸ We recognise that companies will not know the exact monetary value of 0.25% or 1% of base revenue when developing bespoke proposals in their Business Plans. We will, therefore, ask that DNOs exercise their judgement by referring to RIIO-ED1 and incorporating assumptions for RIIO-ED2 when attributing values to bespoke ODI proposals. Where a DNO operates more than one licensee, these thresholds will be based on the sum of the base revenues of the licensees to which the bespoke ODI would apply.

⁹ By this we mean: Specific – it should be clear what is being delivered in practice in order for successful delivery to be measured; Time bound – it should contain clear dates and milestones; Relevant – there should be an identifiable link between the company's review of prevalent issues, the company's long term objectives for the output area (ie Vulnerability, Major Connections Customers or DSO) and where appropriate, the DNOs role.

whether it will require additional funding. Whether the DNO is funded for a deliverable will be relevant for the ex post assessment under the ODI.¹⁰

- propose relevant performance measures which will enable stakeholders and Ofgem to evaluate the DNO's progress in delivering its Vulnerability Strategy and associated outcomes. A performance measure could be attributed to a specific baseline expectation or more broadly to a principle or area of a DNO's strategy. Performance measures could be quantifiable metrics, including those which may be common to all DNOs, or other performance measures such as qualitative assessment, or a combination of performance measures. The DNO should make it clear how the performance measure is relevant to the baseline expectation(s), how the performance measure is calculated and why it is the appropriate measure of success.¹¹
- where a DNO indicates the relevant performance measure is a quantifiable metric, it should include a baseline performance benchmark with justification to support this. This performance benchmark may be a single value or a range.
- be developed with stakeholder and CEG input and developed in line with the company's wider business planning processes and decisions.

Major Connections Strategy

3.10. Submitting a Major Connections Strategy is a minimum requirement under Stage 1 of the BPI. A Major Connections Strategy in the Business Plan must set out the company's proposed approach to meeting the needs of major connections customers in RIIO-ED2.

3.11. As a minimum requirement under Stage 1 of the BPI, DNOs' strategies must:

- include an assessment of the connection issues prevalent in the company's region and evidence of how this informs its proposed approach.

¹⁰ See Section 6 of [Annex 1 to the RIIO-ED2 Methodology Decision](#) for information on the proposed ex post assessment approach.

¹¹ This information will inform Ofgem's assessment within period of how effectively the Vulnerability Strategy has been delivered.

- set out a clearly articulated vision for addressing connections issues identified, identifying links between the proposed deliverables and the outcomes and the benefits these will deliver.
- demonstrate how the company will deliver the standard of service outlined in the principles and baseline expectations in Appendix 2.
- include deliverables which are specific, time bound and relevant.¹² A company should indicate if in their view a deliverable exceeds the baseline expectations and whether it will require additional funding. Whether the DNO is funded for a deliverable will be relevant for the ex post assessment under the ODI.¹³
- propose relevant performance measures proposals which will enable stakeholders and Ofgem to evaluate the DNO's progress in delivering its Major Connections Strategy and associated outcomes. A performance measure could be attributed to a specific baseline expectation or more broadly to a principle or area of a DNO's strategy. Performance measures could be quantifiable metrics, including those which may be common to all DNOs, or other performance measures such as qualitative assessment, or a combination of performance measures. The DNO should make it clear how the measure is relevant to the baseline expectation(s), how the performance measure is calculated and why it is the appropriate measure of success.¹⁴
- where a DNO indicates the relevant performance measure is a quantifiable metric, it should include a baseline performance benchmark with justification to support this. This performance benchmark may be a single value or a range.
- be developed with stakeholder and CEG input and developed in line with the company's wider business planning processes and decisions.

3.12. For the purpose of incentive arrangements in RIIO-ED2, major connection customers are connection customers in relevant market segments (RMS) where there is an

¹² See footnote 9

¹³ See Section 5 of [Annex 1 to the RIIO-ED2 Methodology Decision](#) for information on the proposed ex post assessment approach.

¹⁴ This information will inform Ofgem's assessment within period of how effectively the Major Connections Strategy has been delivered.

absence of effective competition. Therefore, for draft Business Plans, DNOs should include all RMS that did not pass the DPCR5 Competition Test in their Major Connections Strategies. We may review this requirement in the guidance following our ongoing review of competition in connections.

- 3.13. Even in market segments where there is effective competition, we note that DNOs are still responsible for completing non-contestable connection activities. To ensure that DNOs deliver best practice in the provision of non-contestable activities, DNOs should also capture these activities in their strategies.

Maintaining a safe and resilient network

Asset resilience

- 3.14. As a minimum requirement under Stage 1 of the BPI, Business Plans must set out the company's views on asset health, criticality and replacement priorities at each of:

- the start of the price control period, effectively reflecting their view on the asset health, criticality and risk of assets on the network.
- the end of the price control period with no intervention, effectively reflecting their view on asset degradation over the period.
- the end of the price control period with intervention.

- 3.15. We also expect companies to explain their long-term risk objectives and strategy, as well as the long-term benefits delivered by their proposed interventions.

- 3.16. Monetised Risk objectives must be informed by stakeholder engagement and cost-benefit analysis (CBA), and demonstrate that selected investment options both efficiently meet their stakeholder-driven objectives and efficiently deliver sufficient net benefit for existing and future consumers.

Workforce resilience

- 3.17. As a minimum requirement under Stage 1 of the BPI, Business Plans must include a workforce resilience strategy that demonstrates how companies will develop a modern, diverse, high-quality, well-trained workforce fit for the future. These must refer to the

extent of any company engagement with CEGs, Trade Unions and other relevant stakeholders that has informed the workforce resilience strategy.

3.18. Although we are not prescribing the precise content of these strategies, companies should consider how their approaches will lead to:

- improving inclusion, diversity and equality.
- improving workforce satisfaction.
- improving workforce motivation and productivity.
- attracting people to the energy sector and developing the skills needed for a technology driven, low carbon energy system.
- upskilling and multi-skilling the existing workforce.
- ensuring the health, safety and mental wellbeing of the workforce.

Cyber resilience

3.19. As a minimum requirement under Stage 1 of the BPI, Business Plans must demonstrate how companies will take appropriate and proportionate technical and organisational cyber security measures to manage risks associated with the security of their operational technology (OT)¹⁵ and information technology (IT)¹⁶ network and information systems. Business Plans must demonstrate how DNOs will prevent and minimise the impact of incidents on these essential services, to ensure a safe and resilient network.

3.20. In doing so, Business Plans must include the following two sections:

- A Cyber Resilience IT Plan – focused primarily on cyber resilience IT improvements on companies' networks (looking at both their current risk positions, and when compared to their own acceptable risk tolerances), and

¹⁵ Operational Technology covers the network and information systems that are deemed necessary to the delivery of essential services, such as the Supervisory Control and Data Acquisition (SCADA) systems.

¹⁶ Information Technology cover the network and information systems that are used within business functions, such as word processing.

- A Cyber Resilience OT Plan – which is incremental expenditure focused primarily on OT, identifying the need for cyber OT improvements on its network when compared with the National Cyber Security Centre (NCSC) Cyber Assessment Framework outcomes, as well as compared with the company’s own acceptable business risk tolerances .
- 3.21. DNOs must consider the ‘RIIO-2 Cyber Resilience Guidelines’ in developing their Cyber Resilience OT Plans and Cyber Resilience IT Plans.¹⁷ Companies are encouraged to engage with us to assist with the development of their Cyber Resilience OT Plans and Cyber Resilience IT Plans.
- 3.22. The Cyber Resilience OT Plan and Cyber Resilience IT Plan included in a company’s RIIO-ED2 Business Plan will be assessed against the minimum requirements for quality as set out in Chapter 8.
- 3.23. Ofgem would expect general technology refresh or end of life replacements to form part of more general system investment plans, which should already include appropriate cyber security protection, rather than to be included as part of Cyber Resilience OT or IT plans.
- 3.24. For the Cyber Resilience OT Plan, IT security measures for business as usual are generally considered out of scope. However, Ofgem will consider crossover within the Cyber Resilience OT Plan, where an associated risk is highlighted, for example around the interconnection between business IT and OT.
- 3.25. In general, both Cyber Resilience OT Plans and Cyber Resilience IT Plans should include efficient, appropriate and proportionate costs to deliver necessary enhancements to the cyber security and resilience of the systems used to operate essential services. Current risks, vulnerabilities, threats and mitigation options are expected to be documented, together with the relative benefits of the options considered.

¹⁷ RIIO-2 Cyber Resilience Guidelines, available here: <https://www.ofgem.gov.uk/publications-and-updates/riio-2-cyber-resilience-guidelines>.

- 3.26. We will assess these plans, considering whether the measures proposed are appropriate, proportionate and efficient. Any allowances for cyber resilience provided in the RIIO-ED2 final determinations will be based on this assessment.

Physical security

- 3.27. As a minimum requirement under Stage 1 of the BPI, Business Plans must demonstrate how companies will meet any requirements associated with assets deemed as Critical National Infrastructure (CNI). Companies must submit any costs relating to the physical security of CNI sites as part of their Business Plans.

Climate resilience

- 3.28. As a minimum requirement under Stage 1 of the BPI, Business plans must include a dedicated climate resilience strategy, outlining how DNOs plan to adapt to the impacts of climate change on their networks over the long term. This strategy must include the use of adaptation pathways and be used to inform the programmes of work that the DNO will need to carry out over the price control. The strategy should serve to identify the steps that the DNO needs to take to ensure its network remains resilient to the effects and risks of climate change.
- 3.29. One climate resilience strategy must be produced per DNO group. In developing this strategy and planning the actions it will need to take over the RIIO-ED2 period and in the longer term, the DNO must consider a range of plausible climate change projections and the impacts for its region, as demonstrated through the adaptation pathway approach. At a minimum, the DNO must consider the assumptions of temperature rises and/or relevant risks as outlined by the Paris Agreement,¹⁸ the National Infrastructure Commission,¹⁹ the UK Government²⁰ and Committee on Climate Change,²¹ or other equivalent bodies.
- 3.30. We expect an underlying consistency in the assumptions that all DNOs make, that will underpin the planning the DNO undertakes. Where possible, the DNO should

¹⁸ <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

¹⁹ <https://nic.org.uk/app/uploads//Anticipate-React-Recover-28-May-2020.pdf>

²⁰ Such as the latest climate change risk assessment of 2017 <https://www.gov.uk/government/publications/uk-climate-change-risk-assessment-2017>

²¹ Findings and recommendations from reports such as their progress and evidence reports <https://www.theccc.org.uk/publication/progress-in-preparing-for-climate-change-2019-progress-report-to-parliament/>

coordinate with other parties (both within the energy sector, such as transmission or gas distribution companies, and in other sectors, such as the water or transport sectors) local authorities, and/or other DNOs to develop its strategy and plan the steps it will need to take in RIIO-ED2. We expect this to help when a DNO considers the impacts of climate change in relation to cascading and escalating failures of infrastructure across independent sectors.

- 3.31. While we are not prescribing the structure or content of the strategy, the DNO must identify the steps that it expects to take over the course of RIIO-ED2, and how these steps fit in with the DNO's longer-term planning and other activities. It should also identify how the DNO has considered the impacts on its network(s) and how it proposes to mitigate these impacts. We expect the DNO to outline how it will contribute to cross-sector work on climate resilience, such as through a climate resilience working group. We also expect the DNO to outline its initial plan for demonstrating progress against the strategy.

Delivering an environmentally sustainable network

- 3.32. Submitting an Environmental Action Plan (EAP) is a minimum requirement under Stage 1 of the BPI. An EAP in the Business Plan should encompass activities DNOs intend to undertake in RIIO-ED2 to decarbonise the electricity distribution network and to reduce the wider impact of network activity on the environment. As a minimum requirement under Stage 1 of the BPI, a DNO's EAP must:

- include a methodology that has been used to assess the environmental impacts of the company's network and Business Plan in RIIO-ED2. The assessment methodology must set out:
 - a review of the significant environmental impacts arising from its network activity.
 - the opportunities and challenges for addressing material impact areas.
 - an options analysis to identify the value for money of initiatives to reduce its environmental impact.
 - evidence that consideration of impacts was coordinated with the company's wider business planning processes and decisions.

- evidence that wider stakeholders have been involved in the assessment.
 - clarify the DNO's long-term overall targets/objectives for the network's environmental impacts, beyond the RIIO-ED2 period.
 - include an assessment of the network's potential environmental impacts in RIIO-ED2 without intervention, in comparison to its current impacts.
 - set out the role the company envisages playing in supporting the low carbon energy transition.
 - set out the deliverables, outputs and environmental benefits the company proposes to deliver from implementing the EAP.
 - set out clear links between the impact areas it has prioritised in the EAP, the deliverables and targets in RIIO-ED2, and how these are linked to the company's long-term environmental targets/objectives.
- 3.33. We expect that EAPs will draw together the direct carbon impacts claimed in any relevant Engineering Justification Papers (EJPs) and Cost Benefit Analysis (CBA) submissions (for example losses, Electric Vehicle fleet) and will include a list of all such submissions where:
- carbon reduction is the main driver of the proposal.
 - carbon reduction contributes to a substantial part of the benefits claimed by the projects.
- 3.34. In developing their EAPs to meet the minimum requirement of Stage 1 of the BPI, companies must ensure their actions to address the specific activities in scope of the EAP demonstrate a level of ambition in line with the respective baseline expectation. The activities in scope and baseline expectations are outlined in Appendix 3.

4. A smart, flexible energy system

Modernising Energy Data

Digitalisation Strategy and Action Plan

- 4.1. The Licence Obligation to publish a Digitalisation Strategy and Action Plan (DSAP) is to make information publicly available about the DNO's intentions and plans for digitalisation of their energy network and associated services for data.²² DSAPs were updated by DNOs in December 2020.²³
- 4.2. The DSAP is to be updated regularly, with the Digitalisation Strategy updated at least every 2 years and the Digitalisation Action Plan updated every 6 months. We expect the next update and publication to DNO Digitalisation Action Plans to take place no later than the deadline for draft business plans, in July 2021.
- 4.3. The effectiveness of the DSAP hinges on high quality information and insight about stakeholders and their needs
- 4.4. DNOs must identify, learn about and understand the data-related needs of their staff and external stakeholders, including those who currently make use of Energy System Data,²⁴ and those who seek to use that data now or in the future.
- 4.5. Those needs are to have been researched and for ongoing research to take place. This research of needs is to be integrated into regular business activity and the learnings from this to inform the basis of the DSAP. Subject to consultation, our DSAP guidance is expected to include a principle requiring this focus on stakeholders' needs and a summary of the distilled insight gained from this research to be included in the published DSAP.

²² See Section 5 of the [RIIO-ED2 Methodology Decision: Overview document](#) for information the approach to modernising energy data in RIIO-ED2

²³ To view the DSAPs, see here: <https://www.ofgem.gov.uk/publications-and-updates/digitalisation-strategies-modernising-energy-data>

²⁴ Our working definition of Energy System Data has evolved from the definition provided by the Energy Data Task Force and is "facts and statistics collected together that describe the energy system (current, historic and forecast), including: the presence and state of infrastructure, its operation, associated market agreements and their operations, policy and regulation." See: [Energy Data Taskforce: A Strategy for a Modern Digitalised Energy System](#)

4.6. Business Plans, as a minimum requirement under Stage 1 of the BPI must set out how the DNO has approached, and will continue to approach its work to develop its DSAP (particularly its identification of the stakeholders who seek to use data controlled by a DNO and how it engages those stakeholders to understand their data-related needs).

As part of this, Business Plans must include:

- a description of a methodology(ies) that the DNO has used to identify its stakeholders and to engage with them to learn their data and digitalisation needs.
- separately, a description of any planned changes to the ongoing use of this methodology.
- the evidence accrued through the application of this methodology, including demonstration of how the Digitalisation Action Plan of the DSAP has been derived from this evidence.
- evidence of DNO communication and feedback events or activities with stakeholders about how their needs have been interpreted and formed the basis of the DSAP.
- plans of any future DNO communication and feedback events or activities with stakeholders about how their needs have defined the DSAP objectives and associated actions.

4.7. The approaches referred to in the above paragraph must be:

- strategic and proportionate, taking advantage of recognised practices, for example through defining personas that characterise stakeholder groups and their needs.
- inclusive of all stakeholders, including consideration of hard-to-reach groups and groups who operate in markets outside of the energy sector, as well as the needs of both existing and future consumers.
- Show consideration both of active methods of engagement (such as a mix of direct invites for stakeholders to engage through points of contact and events) and passive methods of engagement (such as integrating learning about data needs into other stakeholder engagements or by speculatively publishing data and making it discoverable to test market interest).

Data Best Practice

- 4.8. Complying with Data Best Practice Guidance will ensure day-to-day working with data maximises benefits for its users, whilst also complying with the needs of security, privacy, commercial concerns, and serving the public good. The time and cost burdens associated with working with data will be minimised for the benefit of consumers.
- 4.9. This licence obligation is to be newly introduced as part of the transition from the RIIO-ED1 to the RIIO-ED2 price control. As part of their preparation for operating within the RIIO-ED2 price control and as part of this guidance, we ask DNOs to show their existing state of compliance with the Data Best Practice guidance and, how they are adapting their business to prepare for complying with this RIIO-ED2 licence obligation.
- 4.10. We will carry out a consultation to formalise our Data Best Practice Guidance, this is to be launched in Spring 2021. For all draft business plan submission purposes, we recommend DNOs refer to the current draft version of the guidance (Draft Data Best Practice Guidance v0.21)²⁵. For the avoidance of doubt, in advance of the Data Best Practice Guidance being published in its final form, references to compliance with data best practice are intended to refer to compliance with the principles set out in the draft Data Best Practice Guidance.
- 4.11. DNO compliance with the Data Best Practice Guidance will features a mix of types of data with different properties, we therefore expect effective use of data to take multiple forms.
- 4.12. Data and digital work deliver the best outcomes for consumers through iterative working, feedback and making continuous improvements to services. This is one of the drivers for why the draft Data Best Practice Guidance sets requirements using principles, rather than explicit standards.
- 4.13. Business Plans must, as a minimum requirement under Stage 1 of the BPI, (1) demonstrate existing DNO competency at complying with the Data Best Practice

²⁵ A link to our draft of Data Best Practice v0.21:

<https://modernisingenergydata.atlassian.net/wiki/spaces/MED/pages/69042178/Data+Best+Practice+la+test+release+v0.21>

Guidance and (2) the plan for how any gaps in this competency are being improved ready for RIIO-ED2.

- 4.14. If our planned Data Best Practice Guidance consultation has not concluded by the time that Business Plans are submitted, Business Plans must demonstrate competency using the latest available draft of the guidance. Where any matters relating to the guidance are unresolved and these impact on the Business Plan submission, we expect DNOs to identify this in the Business Plan and encourage them to open dialogue with us.
- 4.15. We believe the approach of continuous development and continuous improvement is important as the DNOs make changes to their business to comply with the Data Best Practice Guidance. We will take this into consideration as we carry out our review.
- 4.16. The demonstration of existing competency must include specific examples of the most mature and advanced data work DNOs have carried out with respect to its ability to comply with the expectations of the Data Best Practice Guidance. This will help provide assurance to us about the current capability each DNO has in place. To be clear, we do not expect current DNO use of data to fully meet the standards and practices described throughout the Data Best Practice guidance.
- 4.17. When providing examples about the existing competency at complying with Data Best Practice the following is a guiding list of the types of information we would like to receive:
- examples that span meeting the needs of users of the data who are both internal and external to the DNO;
 - a demonstration of how these examples do and do not yet meet the Data Best Practice Guidance principles;
 - relevant supporting work (for example a DNO's chosen framework for conducting open data triage, the data standards it is adopting);
 - a range of data triage outcomes, showing instances of the DNO determining data to be classifiable as fully open, shared and closed; and

- cases where data has required sensitivity mitigation as part of its open data triage and details about this process (such as examples of how the utility of the data has been maximised, within the constraint of mitigating the associated sensitivity).
- evidence from the direct users of data about how their needs have been met.

4.18. Regarding information on the plan for how any gaps in competency are being addressed, we do not wish to receive duplicated information that is already available to us in the DNO's published Digitalisation Strategy and Action Plan. This is an optional opportunity for DNOs to share additional information with Ofgem, where the DNO believes that the examples of its current competency at meeting Data best Practice and its published Digitalisation Strategy and Action Plan are insufficient at fully explaining how the DNO will become compliant with Data Best Practice guidance. Our guiding comments regarding this planning are that the depth of information a DNO provides must be proportionate in the context of the overall business planning process and that the information must be directly relatable to the principles of our Data Best Practice guidance.

DSO Transition

4.19. Submitting a DSO Strategy is a minimum requirement under Stage 1 of the BPI. A DSO Strategy in the Business Plan must set out the company's proposed approach to delivering DSO capabilities in RIIO-ED2. As a minimum requirement under Stage 1 of the BPI, DNOs' strategies must:

- include an assessment of the DSO transition issues prevalent in the company's region and evidence of how this informs its proposed approach.
- set out a clearly articulated vision for addressing DSO transition issues identified, identifying links between the proposed deliverables and the outcomes and the benefits these will deliver.
- demonstrate how the company will deliver the standard of service outlined in the activities and baseline expectations in Appendix 4.

- include deliverables which are specific, time bound and relevant.²⁶ A company should indicate if in their view a deliverable exceeds the baseline expectations and whether it will require additional funding. Whether the DNO is funded for a deliverable will be relevant for the ex post assessment under the ODI.²⁷
- propose relevant performance measures which will enable stakeholders and Ofgem to evaluate the DNO's progress in delivering its DSO Strategy and associated outcomes. A performance measure could be attributed to a specific baseline expectation or more broadly to an activity or area of a DNO's strategy. Performance measures could be quantifiable metrics, including those which may be common to all DNOs, or other performance measures such as qualitative assessment, or a combination of performance measures. The DNO should make it clear how the measure is relevant to the baseline expectation(s), how the performance measure is calculated and why it is the appropriate measure of success.²⁸
- where a DNO indicates the relevant performance measure is a quantifiable metric, it should include a baseline performance benchmark with justification to support this. This performance benchmark may be a single value or a range.
- be developed with stakeholder and CEG input and developed in line with the company's wider business planning processes and decisions.

4.20. We are mindful that many of the aspects of these activities relate to our overall expectation for DNOs to digitalise and make better use of data. We expect Business Plan submissions explaining DSO related data improvements will also be of value for the Modernising Energy Data requirements set out above and these instances should be cross-referenced where appropriate.

4.21. To aid consistency in DSOs' approaches in delivering their DSO Strategies and meeting baseline expectations, in this section on activities we provide some guidance on what we might expect to see included in a complete and suitable Strategy, and the actions

²⁶ See footnote 9

²⁷ See Section 5 of [Annex 1 to the RIIO-ED2 Methodology Decision](#) for information on the proposed ex post assessment approach.

²⁸ This information will inform Ofgem's assessment within period of how effectively the DSO Strategy has been delivered.

that DNOs might undertake to meet the baseline expectations as set out in Appendix 4.

Activity 1.1 Plan efficiently in the context of uncertainty, taking account of whole system outcomes, and promote planning data availability

4.22. Companies must explain how they plan to achieve the baseline expectations relevant to this activity. As part of this requirement, the type of information that companies could provide to demonstrate they have met this requirement might include:

- the process for developing and applying Distribution Future Energy Scenarios (DFES) in planning processes, including what analysis the DNO will undertake and how they will gain and use stakeholder input. This includes the transparent and evidence-based process by which multiple DFES scenarios will be used to create a 'best view' network forecast that informs the Network Development Plan.²⁹
- how observed and high certainty network data, for example from the Long-Term Development Statement (LTDS), is used to ground the DFES and the Network Development Plan.
- the plan, specifications and justification for rolling out monitoring across more of their network, as well as how they will gather and use other information including from third parties in forecasting, simulation and network modelling.
- how and at what network voltage level and temporal granularity data describing network and assets, including for example asset ratings, utilisations and locations, will be cleansed and shared. Where information has been withheld, DNOs should explain their reasoning for doing so.
- how DNOs will invite and otherwise identify possible solutions that can be provided by other network companies and current and prospective network users to resolve

²⁹ We note that DNOs undertake varying levels of DFES analysis and use the outputs in different ways. We expect DNOs to demonstrate how DFES are used in the network planning process. We note that methodologies such as those developed under the ATLAS Network Innovation Allowance funded project are at a sufficiently mature Technology Readiness Level (TRL) to be able to be used by all DNOs to meet our baseline expectations. ATLAS: <https://www.enwl.co.uk/zero-carbon/innovation/smaller-projects/network-innovation-allowance/enwl008---architecture-of-tools-for-load-scenarios-atlas/>

network needs noting, where relevant, any interactions with their role in enabling whole system solutions as per 4.25 below.

- how DNOs will communicate and make available sufficient planning data and flexibility requirements, at sufficient lead times, to enable existing and new providers to develop capability to provide solutions to meet network requirements.
- what smart network solutions will be considered in addition to conventional reinforcement and customer flexibility, and how DNOs will ensure it does not undermine the quality of electricity supplied to network users.
- the evaluation methodology the DNO will use to compare different solutions, including flexibility and energy efficiency, for meeting network needs. DNOs could demonstrate how its evaluation process will identify the solution that is economic and efficient over the long term, recognising the option value that flexibility and energy efficiency can provide; and what steps the DNO will take to make its evaluation process transparent, replicable, and otherwise enable scrutiny of its decisions.
- how all relevant data and outputs will comply with Data Best Practice Guidance, particularly with respect to its principles for treating data as presumed open and conducting data-openness triage.
- steps that will be taken to improve processes above during the price control, and how standardisation across DNOs will be delivered.

Activity 2.1 Promote operational network visibility and data availability

4.23. Companies must explain how they plan to achieve the baseline expectations relevant to this activity. As part of this requirement, the type of information that companies could provide to demonstrate they have met this requirement might include:

- how they will share and publish operational constraint, network topology and configuration data openly on forward timescales to provide meaningful benefit to flexibility providers, and what fields this data will include.
- plans, processes and specifications for sharing operational data across DNOs and with the ESO in a standard way.

- what data and information will be shared with the ESO, and how, to support avoidance of conflicts and maximisation of synergies in dispatch of flexibility services.
- how all relevant data and outputs will comply with Data Best Practice Guidance, particularly with respect to its principles for treating data as presumed open and conducting data-openness triage.
- steps that will be taken to improve processes above during the price control, and how standardisation across DNOs will be delivered.

Activity 2.2 Facilitate efficient dispatch of distribution flexibility services

4.24. Companies must explain how they plan to achieve the baseline relevant to this activity. As part of this requirement, the type of information that companies could provide to demonstrate they have met this requirement might include:

- plans to enable, including features of, a decision-making framework for when DER is instructed to dispatch to provide distribution flexibility services and how this is coordinated with dispatch for ESO flexibility services. This might include the relevant parameters, any design principles, and how it will maximise liquidity across flexibility markets and enable DER to stack revenues. DNOs could detail how they will transparently design, develop and communicate the decision-making framework for dispatch instructions, including arrangements for curtailing ANM connections. DNOs could include the corresponding governance arrangements to manage dispatch instructions and provide an explanation of the role of stakeholder engagement.
- the process in which they will consider network users input and define the manner they will cooperate to define the circumstances that require different dispatch instructions. Companies could explain how these dispatch instructions are complimentary to markets and direct control is not a fall-back option that is relied on to the detriment of the development of markets.
- processes to enable secondary trading of products, including how to facilitate access to the necessary data, and how they plan to enable secondary trades to be fulfilled.

- what dispatch infrastructure will be used in RIIO-ED2. This could include details of its scalability for greater and wider (eg for operation by a third party) application. DNOs could detail the steps they are taking to create simple and standard application protocol interfaces so DERs or their agents can cost-effectively interface with multiple DNOs' systems.
- how they will ensure that network operations, and associated changes in system architecture, are not hard coded such that only DNOs can perform such tasks in the future. This includes how the methodology of operational data sharing will meet industry requirements or how proprietary software will be avoided so far as possible.

Activity 3.1 Provide accurate, user-friendly and comprehensive market information

4.25. Companies must explain how they plan to achieve the baseline expectations relevant to this activity. As part of this requirement, the type of information that companies could provide to demonstrate they have met this requirement might include:

- what market reporting information DNOs will make available, how regularly, and in what format, including as required under licence condition 31E (Procurement and use of distribution electricity flexibility services) and any additional information. This could include tender results, payment structure and price agreed, length of contracts, how often DER is dispatched (and volumes) and other actions taken by the DNO. It could include what information about DER will be anonymised, why and how. The DNO might also set out what other information it will seek to make available to support the development of markets, and how it will identify helpful information.
- how the DNO will engage with market participants and other relevant stakeholders as required under licence conditions but also to identify what makes information user-friendly, and what steps alongside stakeholder engagement the DNO will take to ensure the information it publishes is user-friendly and complies with data best practice. DNOs could set out the actions they will take to ensure groups in vulnerable situations are able to engage in market development.
- what steps the DNO will take to deliver continuous improvement to the volume, accessibility and accuracy of the information it publishes.

Activity 3.2 Embed simple, fair and transparent rules and processes for procuring distribution flexibility services

4.26. Companies must explain how they plan to achieve the baseline expectations relevant to this activity. As part of this requirement, the type of information that companies could provide to demonstrate they have met this requirement might include:

- what types of distribution flexibility service products the DNO plans to have rolled out in RIIO-ED2. What steps are being taken in the development and amendment of distribution flexibility service products, contracts and qualification criteria, and how the DNO will ensure these steps are transparent and participatory. Wherever possible, these products should be standardised across DNOs. Where regional specificities prevent standardisation, which should be an exception, DNOs could set out how they will be sufficiently aligned with activities and any governance arrangements for standardised products, so that they are simple to engage with. Furthermore, DNOs could set out how they will adaptively enable third parties to provide market support services and platform services, taking account of market conditions. DNOs could set out the measures they will take to promote coordination of distribution flexibility services across third party platforms, for example through APIs rather than proprietary systems whilst promoting and enabling competition between third party platform providers, for example through APIs rather than proprietary systems.
- how the DNO will optimise, in conjunction with stakeholders, contract lengths to reflect the network need, reliability, and liquidity and the opportunities for innovation and dynamic competition. DNOs could propose processes or governance arrangements detailing how products and contracts are developed and refined. This includes how flexibility providers are able to input into the development of flexibility products and contracts, and other steps the DNO is taking to ensure the technical specifications do not unnecessarily restrict participation by different types of flexibility providers. DNOs could also explain how they will coordinate with the ESO to enable efficient coordination across flexibility markets. We expect DNOs to include how and why any exclusivity clauses are included in flexibility contracts, as they should be avoided wherever possible. DNOs could set out the processes they will follow to ensure they have clear governance processes overseeing for contracts that deviate from the standard. DNOs could detail how (eg the manner and format) they will engage with stakeholders on this matter so that this is clearly communicated.

- how coordination in DNO and ESO dispatch instruction will be communicated in and facilitated by commercial contracts and arrangements. This includes what steps the DNO is taking to minimise the use of exclusivity clauses, including detailing considerations with regard to non-firm connections. More widely, we expect DNOs' commercial arrangements with DERs to enable better coordination (on both contract terms and communication of operational data between the DNO and the ESO), so that DER can more easily stack value.
- what measures the DNO is introducing to manage actual or perceived conflicts of interest between its market facilitation and network ownership roles or other business interests. The DNO could describe how stakeholder engagement will inform the development and implementation of these measures.

Enabling whole system solutions

4.27. As a minimum requirement under Stage 1 of the BPI, DNOs companies must set out their approach to enabling whole system solutions in their Business Plan. This must include:

- plans and processes for joint planning with other network companies and/or the system operator (and evidence of that already undertaken).
- evidence of effective identification and adoption of potential whole system solutions and approaches, reflecting how they have taken account of the impacts and opportunities of their actions for the wider system, and vice versa, and accounted for those in their cost benefit analyses.
- demonstration of long-term whole system thinking and value for consumers and the wider society, including identification of uncertainties and mitigation, and how these relate to a range of different forecast pathways (see section 5 'Forecasts and scenarios').

- demonstrable cross-sector³⁰ engagement, optioneering, and planning with sectors other than their own.

4.28. Under this requirement, where a company proposes an activity which coordinates with, or generates benefits for, any broader area of the economy or society, the DNO's Business Plan must evidence and quantify these impacts as part of their justified and costed proposals for whole system outcomes and solutions. Such activities must demonstrate:

- that they meet all the same requirements for 'non-whole system' activities (costs, engineering justifications, etc), and how uncertainty mechanisms, including reopeners, could support them. We expect companies to apply proportionality when submitting a whole system CBA. For example, smaller or simple projects following the standard CBA template, whereas larger or more complex projects requiring bespoke analytical approaches.
- that there are net benefits for their sector's consumers and which type(s) of benefit the activity will generate for consumers, e.g. lower bills, reduced environmental damage, improved reliability and service. The distribution of costs and benefits over time should also be demonstrated (i.e. for existing and future consumers).
- the value – and methodologies for calculation – of the activity for other sectors, towards achieving broader goals (e.g. decarbonisation), and for other aspects of the economy (e.g. telecommunications).
- the level of coordination and potential provisional agreements that have already been secured to support these proposals, including a justification that the split of costs and benefits between the company and the whole system partner(s) are appropriate.

³⁰ 'Sector' refers to the distribution, transmission and operation of a single energy source. For example, the 'gas sector' includes the firms responsible for gas transmission, distribution, and system operation. A sector may also be a non-Ofgem regulated sector, such as waste, water, communications, etc. By 'cross-sector', we refer to any licensee in one energy source sector, e.g. electricity, working with any licensee in another sector, e.g. gas, or water.

- why a market solution could not, or should not, be utilised to deliver the activity, and that all options have been considered on a level playing field.
 - that the activity is not BAU, and expenditure which sets the activity as above BAU should be clearly identified and delineated.
 - how changes have already been made in the RIIO-ED1 operating period – in response to changing market conditions, stakeholder expectations, or potential licence changes – and outlines how these practices will be embedded and improved in RIIO-ED2.
- 4.29. Where a company has not identified any potential opportunities for proposed whole system outcomes and solutions, DNOs must provide evidence of their engagement and attempts to discover such opportunities.
- 4.30. Additionally, as a minimum requirement under Stage 1 of the BPI Business Plan, sections on innovation must contain consideration of whole system approaches as potential solutions to the barriers being addressed by the innovation proposals.

Innovation

Innovation within BAU activities

- 4.31. 'BAU innovation' is any innovation that is not dependent on, or funded via, ringfenced innovation stimulus funds. We expect companies to fund more BAU innovation in RIIO-ED2 using their totex allowance, as part of their BAU activities, rather than relying solely on innovation stimulus funds.
- 4.32. There will not be a separate funding stream (on top of the totex allowance) for BAU innovation. Instead, this innovation should be incorporated into wider BAU activities throughout their plans. We would like DNOs to clearly identify/pull-out where they consider an activity to be BAU innovation. We are, however, not prescriptive as to how DNOs showcase this within their business plan (ie we are not prescribing that all innovation content is contained in a standalone Innovation Strategy).
- 4.33. As a minimum requirement under Stage 1 of the BPI, DNO Business Plans must evidence a strong strategic focus on innovation. This will include how companies are developing and embedding a culture of innovation throughout their business. Companies must evidence a commitment to innovation throughout their Business

Plans. This is separate to the minimum requirements on ongoing efficiency detailed in paragraphs 5.44-5.46, plus we are not asking companies to set out all the specific innovation projects they plan to undertake with their totex allowance.

4.34. Instead we want to understand the high-level innovation activities (ie the areas and themes they seek to focus on) that companies are planning for RIIO-ED2, using their totex allowance, and the processes they have in place for identifying these ideas. Companies must include:

- a strategic approach to innovation activities, which builds upon industry-wide challenges and industry-wide strategic direction.
- how they will consider, and mitigate if necessary, the potential impacts of their innovation activities on consumers in vulnerable situations.
- consideration of innovative whole system approaches as potential solutions to problems.
- how plans for RIIO-ED2 build on past projects completed by themselves and others, considering lessons learned from these past projects.
- plans for third-party involvement in their innovation activities, demonstrating how they will increase third-party involvement in their innovation activities and ensure full consideration of third-party innovation ideas. They may, for example, include plans for independent consideration of which third-party innovation ideas to take forward.
- plans to collaborate with other network companies and other interested bodies and to disseminate learning from innovation.
- a framework for rolling out proven RIIO-ED2 innovation into business during the course of the RIIO-ED2 price control.
- how they propose to monitor the benefits of planned RIIO-ED2 innovation and reduce costs in other areas during the course of RIIO-ED2 using this innovation.

4.35. The Business Plan must also as a minimum requirement describe the steps that the company is taking to ensure that previously proven innovation (ie innovation which was proven before the start of RIIO-ED2) is rolled out into BAU in the RIIO-ED2

Business Plan and how the related benefits are reflected in the company's proposed expenditure for RIIO-ED2. This will include innovation trials, in which the company has previously participated, as well as trials that have been led by other companies.

Network Innovation Allowance (NIA)

4.36. If companies believe that NIA funding is necessary for RIIO-ED2, their Business Plan must set out and justify the level of NIA funding requested. As part of this and in addition to the inclusion of the information detailed above in relation to innovation funded out of totex allowance, NIA funding requests must include:

- high-level areas of focus for NIA spending and, where known, details of individual planned NIA projects.
- how activities will be delivered.
- how much NIA funding they believe is necessary for each of these areas of focus.
- the value/benefits they anticipate these activities may generate.
- how the overall level of NIA funding compares with the level of NIA funding the DNO received in RIIO-ED1.
- an explanation of why the innovation in question cannot be funded from the totex allowance.

4.37. As part of any request for NIA funding, companies must also set out the desired structure of their proposed RIIO-ED2 NIA and how much risk they are willing to take on themselves against their NIA. For example:

- whether they seek an annual allowance or an allowance for the duration of RIIO-ED2.
- the compulsory contribution they are willing to make towards their RIIO-ED2 NIA.
- any other mechanisms they propose to support their NIA funding, such as re-openers to reassess the level of NIA funding needed during the course of RIIO-ED2.

5. Keeping consumer bills low

Forecasts and scenarios

- 5.1. Network operators will need to play a proactive role in ensuring the local grids are ready for the Net Zero transition. They will need to plan to accommodate increasing demand that will come from the electrification of heating and transport, while accounting for and maximising the potential of these and other new technologies to provide system flexibility and limit the need for network upgrades. We also expect them to identify and take steps to minimise the impact that uncertainty might have on consumers.
- 5.2. DNO investment plans should therefore be based, as far as is practicable, on well informed and justified forecasts of demand and generation growth, which will allow Ofgem to be able to undertake comparative analysis of forecast expenditure between DNOs.
- 5.3. In Chapter 4 of our RIIO-ED2 Methodology Decision, we said that there are significant benefits to DNOs applying common sets of forecast assumptions for the purposes of investment planning. We are using this Business Plan Guidance to provide these sets of forecast assumptions.
- 5.4. As a minimum requirement under Stage 1 of the BPI, DNOs must demonstrate that their forecasts have been informed by the range of assumptions found in the Net Zero compliant energy pathways in the Electricity System Operator’s 2020 FES, and the Climate Change Committee’s 6th Carbon Budget. This range of pathways is consistent with the Government’s announcement to end sales of new combustion engine vehicles by 2030 and for all new cars and vans to be fully zero emission at the tailpipe from 2035.³¹ The assumptions are also consistent with the recently announced Government target to rollout 600,000 heat pumps a year by 2028.
- 5.5. From the Electricity System Operator’s 2020 FES, and the Climate Change Committee’s 6th Carbon Budget, we have extracted key assumptions set out in the table below that we consider are relevant for investment planning. These show the

³¹ FES 2020 pathways were published before the Government’s decision to bring forward the ban of new combustion engine vehicle sales to 2030.

projected forecasts for total demand, heat pump demand and penetration, and EV demand and penetration for 2030. DNOs must use these key assumptions as part of determining the range of demand for their network. The full set of assumptions is available at the Electricity System Operator's and the Climate Change Committee's websites.³² Between now and 2030, there is a reasonable degree of consistency between different forecast pathways and we believe this will enable DNOs to have a higher level of certainty on the need for investment than would otherwise be the case.

³² Electricity System Operator's [2020 FES](#) and Climate Change Committee [6th Carbon Budget](#)

	FES 2020 - Data for period ending 2030				CCC – Data for period ending 2030 as appears in 6 th Carbon Budget					
	Consumer Transformation	System Transformation	Leading the Way	Notes	Balanced Pathway	Headwinds	Widespread Engagement	Widespread Innovation	Tailwinds	Notes
Total electricity demand (TWh)	300	282	279	Excludes losses and on-grid electrolysis	360	350	352	371	372	Includes Electricity for production of hydrogen
Total demand from HPs (TWh)	21	6	24	Residential heat pumps	8					Additional demand from HPs
Total electricity demand from EVs (TWh)	27	16	31		39	33	36	41	35	Additional demand from Cars, Vans & HGVs
Peak Demand (GW)	16	17	13	Residential Peak Sub Total (Appliances, Light, Resistive Heat)	N/A	N/A	N/A	N/A	N/A	Data has not been published as part of the 6th Carbon Budget
Penetration of Electric vehicles (millions)	11.1	4.8	11.7	Includes cars, not all vehicles	17.8	14.2	18.4	17.5	17.5	
Penetration of Heat pumps (millions)	5.8	1.7	7.5	Includes hybrid heat pumps	5.5	4.1	5.9	5.3	5.1	Includes hybrid heat pumps

- 5.6. We also expect DNOs to assess the need for investment beyond 2030 that may be required in order to deliver against Net Zero targets. The pathways identified above may provide a useful basis for predicting longer-term levels of demand, although we note that in the period beyond 2030, there is increasing divergence between the demand indicated by different pathways. We expect DNOs to take into account the degree of divergence between pathways when identifying both the potential need for investment and the certainty they have on the investment being required under a range of future scenarios.
- 5.7. Each DNO will have to translate these national pathways into scenarios that are applicable for its licence area. In establishing these scenarios, DNOs should engage with local stakeholders to understand what trajectory for decarbonisation is likely to be followed in that licence area. As a minimum requirement under Stage 1 of the BPI, DNO Business Plans must set out a detailed description of the process through which this engagement has been conducted. This must include evidence of structured and effective consultation with stakeholders and a demonstration of how this was supported with input from democratically accountable bodies.
- 5.8. Once the scenarios are developed, the licensees must include evidence of:
- relevant network planning data being made available to external stakeholders in a digitised and open form. This should include the provision of heat maps, where relevant.
 - the manner in which the data from this modelling was made available to other stakeholders, in line with Data Best Practice guidance.
- 5.9. As a minimum requirement under Stage 1 of the BPI, DNOs will need to transparently set out how they have translated forecasts on overall demand into an increase in demand at peak times. This will involve DNOs explaining clearly their assumptions on peak demand from heating that best identifies the projected uptake (in millions) of heat pumps for the period of RIIO-ED2. DNOs must also describe the anticipated EV uptake rates for this period in their licence area and the impact these will have on the modelled peak demand for electricity, as part of their peak demand estimations.
- 5.10. A DNO's peak demand estimation must include the assumptions they have made on how the emergence of flexibility markets, the development of smart technologies and

changes in consumer behaviour could impact on peak demand growth. We also expect DNOs to undertake a sensitivity analysis around this to demonstrate how changes in these assumptions could impact on the level of peak demand, and any associated investment requirements.

- 5.11. In developing the scenarios, the licensees must include evidence of how this process took account of the alignment between regional and national targets and the reasons for any differences.
- 5.12. There are several methods that a DNO could use to establish a forecast of demand expected for its areas, and we are not prescribing which a DNO should use or the evidence they should provide in accordance with paragraph 5.7. While we are not mandating a requirement to apply for example: the guidance on best practice for developing Local Area Energy Plans³³, the draft framework for devolved, regional and local energy planning provided by Scottish Government³⁴, or the Energy Networks Association's (ENA) Open Networks Project's work on Distribution Future Energy Scenarios (DFES) and development of a 'best view' network forecast, we do consider that these are helpful to illustrate the type of information and evidence that could support investment proposals to meet localised forecasts of demand.
- 5.13. The DNOs have developed common 'building blocks' to support their DFES and are developing a common methodology to generate a forecast based on the DFES. This forecast will inform, but not directly translate, into a Network Development Plan (NDP) for the 5-10 year period (covering network reinforcements and flexibility needs). This is because the NDP itself will be tested against the DFES envelope of scenarios, their risk and uncertainty, to ensure that the proposed investments do not close off any critical pathways to achieving Net Zero, recognising that the plan is not a perfect prediction of the future. This approach may be helpful for investment planning, specifically due to the importance of accounting for key uncertainties associated with the possible DFES. We also know that the DNOs will draw on other information, besides their forecast to create their investment plans, for example asset health data.

³³ <https://www.cse.org.uk/projects/view/1369>

³⁴ [Scottish Government draft framework for devolved regional and local planning](#)

In any case, the DNOs must detail the nature of the modelling that was conducted to establish a regional forecast to Net Zero in their Business Plan.

- 5.14. We anticipate that a DNO's forecast that is generated through the above process is likely to inform their investment proposals. For their business plan however, we require more than an investment plan based around single set of assumptions that a DNO views as most likely to arise.
- 5.15. As a minimum requirement under Stage 1 of the BPI, DNOs must show how they evaluated the investment required under each possible future pathway/scenario that we have identified above. DNOs must use this analysis to distinguish between investment that is reasonably certain to be required across different pathways, from that which may only be required under a specific set of circumstances, even if these represent a DNO's most likely view of future demand.
- 5.16. They must seek to identify an investment strategy that is robust across pathways/scenarios, ie which performs well (is close to optimal) no matter which pathway/scenario occurs. It is possible that a DNO's investment strategy may not be quite optimal for any single possible scenario, in that making it suitably robust may involve a degree of proofing against whichever future scenario occurs.
- 5.17. Careful consideration must be given to the timing of investment decisions. A robust strategy may bring forward in time investment in capacity which, even if not immediately needed at the proposed time under a DNO's assumed forecast, is nevertheless likely to be eventually needed in any case. This might be desirable to prevent piecemeal expansion, but the case for it must be carefully justified.
- 5.18. The analysis provided by DNOs will inform our assessment of what proportion of the funding requested we will provide in baseline allowances, and the extent to which we must use mechanisms to enable funding for investment which may prove to be required, but around which, at the time of setting the price control, there is more uncertainty. We expect the use of flexibility to be fully considered by DNOs and clearly outlined as part of the analysis presented in business plans and we anticipate it will form a key part of expenditure funded through baseline allowances.
- 5.19. Where a DNO brings forward investment proposals for which it is seeking baseline funding, we will expect them to set out what projects and/or volume of additional capacity it is intending to deliver through these allowances. We expect DNOs to

consider the application of PCDs to this expenditure in circumstances where there would be no impact on performance against other RIIO-ED2 outputs if the allowance provided was not subsequently used to deliver the project and/or volume of capacity intended. This may particularly be the case for any expenditure intended to provide additional capacity to demand projected to arise beyond 2028.

Cost information

- 5.20. As a minimum requirement under Stage 1 of the BPI, DNOs must submit cost information as part of their Business Plans, as set out in this section.
- 5.21. In proposing costs for operating and developing their networks, companies must explain their costs/workload forecasts, particularly where these diverge from historical trends. In particular, we expect companies to provide information in their Business Plans on:
- cost drivers.
 - consideration of options.
 - justification of costs, including the proposed profiling of costs.
 - how efficiency and innovation will be used to reduce costs.
- 5.22. Companies must complete the Business Plan Data Templates (BPDTs) in accordance with the Ofgem BPDT guidance.³⁵
- 5.23. Business Plans must clearly set out the key drivers of expenditure for the RIIO-ED2 period - for example, growth in demand, conditions of assets/utilisation, legislative requirements, and any other relevant drivers.
- 5.24. Business Plans must clearly justify the need for new investment, including:
- information on current levels of network utilisation and changes to utilisation based on the different forecast growth pathways that we have identified above, including

³⁵ See [Draft Data Templates and Associated Instructions and Guidance](#)

their “best view”. We expect that information on current and forecast network capacity will be published in accordance with Data Best Practice. This must include its integration into the joint network mapping platform that the ENA’s members have already been working on. This must be undertaken in a way that is consistent with Ofgem-led reforms to the LTDS which proposes enhancing data on headroom to the 11kV network, and the Network Development Plan, where readily accessible data on network headroom will form a central component.

- the different options considered for meeting future network requirements, including the cost of “doing nothing” and of “deferral” options and the associated cost benefit analysis (CBA). These options should include, where appropriate, the availability of potential market solutions to the system need, and whether any 'whole system' solutions are available.
- we expect DNOs to make the best use of existing network capacity first, by fully utilising flexibility technologies to manage changes in peak demand. A network capacity upgrade may be necessary where flexibility is likely to be insufficient by itself to meet anticipated growth in peak demand. Where this is the case, DNOs should show that they have considered the option value provided by flexibility in the timing of their upgrades to capacity. In doing so, they should account for the long-term prospects for demand across different future scenarios and size capacity upgrades so they minimise long-term costs for consumers.
- for options discounted by DNOs at this stage, full reasoning, detailing key assumptions and selection criteria given for exclusion.
- the reasons for the timing of investment under the different options considered, including expected outputs (eg the delivery of an increment in boundary capacity transfer, the delivery of an electricity link) related to the investment and year of delivery.

5.25. In support of costs proposed, Business Plans must include:

- evidence of the efficiency of their costs, for example as compared to historical benchmarks and/or benchmarking with national and international comparators.
- details of assumptions and justification for projected changes in the efficient levels of unit costs over time (ie ongoing efficiencies) caused by improvements in project delivery, technological innovation, procurement efficiencies, etc.

- a clear rationale for any associated assumptions they consider we should use when assessing costs. For example, justification for the extent to which regional and company-specific factors determine material (higher and lower) cost variations.
- details of the activities and indicative costs that they propose are directly funded through totex allowances and that will be associated with achieving service levels.
- details of which categories of expenditure are more uncertain and more difficult to forecast using historical/independent benchmarks. This should include:
 - the risk of underutilisation/stranding that new/existing investments might face in the future under a range of plausible forecast scenarios.
 - the risk that an alternative solution may be the most efficient means of addressing the network requirement.
 - the risk that the investment is premature.
- where this is the case, we expect companies' Business Plans to demonstrate consideration of mechanisms that mitigate risk associated with uncertainty, and/or other evidence to justify their submitted costs.

5.26. For new or existing assets that face a risk of underutilisation, Business Plans should set out the monitoring and mitigation they will put in place to reduce this risk. For new assets (ie those assets that companies are planning to invest in and have included in Business Plans) that face a risk of underutilisation, network companies should ensure before undertaking the investment they have clear evidence of need, such evidence might include LAEPs.

5.27. Where a DNO considers an investment is certain under all scenarios, they will be expected to provide justification for this view.

5.28. Business Plans should demonstrate how their expenditure forecasts map onto relevant ODIs and PCDs.

Business plan data templates

5.29. BPDTs enable the collection of Business Plan data from all companies on a consistent basis. As a minimum requirement under Stage 1 of the BPI, DNOs must fully and

accurately complete the detailed BPDTs as instructed by any guidance document. Draft BPDTs and associated instructions and guidance have been published by Ofgem.³⁶

- 5.30. BPDTs consist of a suite of data tables and associated guidance and commentary templates that facilitate a consistent presentation of the cost, volume, output and financial data underpinning the Business Plan submissions that have been developed with the DNOs. These templates are broadly in line with the RIIO-ED1 current annual reporting pack. We believe this is a proportionate approach and should facilitate easier comparison of forecasts with historical data.
- 5.31. We intend to work with the DNOs in the coming months to further develop the BPDTs and associated guidance.

Cost benefit analysis (CBA)

- 5.32. Cost Benefit Analysis (CBA) is an important decision support tool in providing justification for investment needs in RIIO-ED2.
- 5.33. As a minimum requirement under Stage 1 of the BPI, DNOs must produce and submit CBAs in accordance with the CBA templates and guidance document.

³⁶ See <https://www.ofgem.gov.uk/publications-and-updates/riio-ed2-draft-business-plan-data-templates-and-associated-instructions-and-guidance>

Engineering justification Papers (EJPs)

- 5.34. Engineering Justification Papers (EJPs) are another important decision support tool, open to scrutiny and challenge, in conjunction with other appropriate means of justification for investment needs in RIIO-ED2.
- 5.35. As a minimum requirement under Stage 1 of the BPI, DNOs must produce and submit EJPs in accordance with the EJP guidance document.
- 5.36. We intend to work with the DNOs in the coming months on the implementation of our EJP guidance.

Access and Forward-looking charges Significant Code Review (SCR)

- 5.37. The Access and Forward-looking charges Significant Code Review ('Access SCR') could impact on RIIO-ED2 in a number of different ways.³⁷
- 5.38. We have decided to delay publishing our minded-to proposals for the Access SCR to ensure that our decision in this area is aligned with our Full Chain Flexibility Strategic Change Programme. This means that DNOs will not be able to develop their draft Business Plans for RIIO-ED2 with sight of our minded-to proposals. We therefore expect DNOs to base their draft Business Plans on the existing arrangements (ie no change).
- 5.39. We will issue further guidance on the assumptions on the Access SCR that DNOs should employ for their final Business Plan in due course. This will include detail on how we will enable adjustments to be made to the price control to reflect any subsequent changes in our position on the Access SCR after Final Determinations.
- 5.40. Within their draft Business Plan submissions, we encourage DNOs to indicate how their spending plans could be impacted by any changes to the existing arrangements as a results of the Access SCR (eg costs or volumes of connections).

³⁷ See <https://www.ofgem.gov.uk/electricity/transmission-networks/charging/reform-network-access-and-forward-looking-charges> for further information on the Access SCR

Managing uncertainty

Uncertainty mechanisms

- 5.41. We acknowledge that forecasting costs for the duration of a price control can be challenging. Uncertainty in cost forecasts can arise for several reasons, including whether a company needs to conduct an activity or make an investment, the amount of an activity they need to conduct, as well as the cost of the activity. Uncertainty mechanisms allow changes to a company's allowed revenues to be made in light of what happens during the price control period and help to ensure that consumers only pay for the outputs that are delivered.
- 5.42. As part of their Business Plans, companies can propose, with suitable justification, the inclusion of network company-designed uncertainty mechanisms. Table 1 below gives an illustration of the type of supporting information we expect to see with any such proposal.

Table 1 - Examples of the information to be submitted in support of proposals for additional uncertainty mechanisms

Issue	Information
What is the issue/risk that the proposed mechanism addresses?	Set out the uncertainty identified and why an uncertainty mechanism might be appropriate. Is the issue/risk regionally specific or industry wide?
If the mechanism was adopted in the RIIO-ED2 price control, where would the ownership of risk lie in relation to the uncertainty covered by the proposed mechanism? ³⁸	Clearly set out where the risks lie with regard to customer/company/both, justifying why the apportionment is appropriate.
Materiality of issue	Quantification of the materiality of the issue (ie what is the expenditure exposure of the issue) – we will not

³⁸ For example, in the case of a volume driver, consumers may carry the risk of higher volumes, while companies carry the risk of the actual cost (per unit of volume) being higher than the allowance.

Issue	Information
	prescribe a specific methodology for the quantification of materiality.
Frequency and probability of issue over the price control period	What is the expected frequency and probability of the issue arising during the price control period?
What is the proposed mechanism?	A description of what the mechanism is and how it works. This needs to be detailed enough to allow for potential implementation. If there is a materiality threshold, this would need to be set out as a percentage of allowed revenue. If there is a specific trigger event this should be defined.
What are the justifications for the mechanism?	Set out the benefits of the mechanism
What are the drawbacks of the proposed mechanism?	Set out the drawbacks of the mechanism. Again, where possible, the materiality of these drawbacks need to be set out (eg the impact on charging volatility).
Can the drawbacks be reduced?	Explain why the drawbacks cannot be mitigated through alternative mechanism designs (eg by using a volume driver instead of logging-up or cost pass-through).
Explanation of how on balance, the mechanism delivers value for money while protecting the ability to finance efficient delivery.	Explanation of why the benefits of the mechanism outweigh the drawbacks. We also expect the quantification of how the proposed mechanism delivers value for money whilst ensuring efficient delivery.
Treatment in BPDTs	Outline how the associated costs have been treated in the BPDTs.

Real Price Effects (RPEs)

5.43. To enable us to assess Real Price Effects (RPEs) appropriately, as a minimum requirement under Stage 1 of the BPI, DNOs must provide us with the following information in their Business Plans:

- the input costs for which our measure of general output price inflation (ie CPIH) is a poor proxy, along with justification for why.

- the expenditure categories (eg direct opex) to which these input costs relate, and to what extent. We expect companies to consider the practical implications of their proposals, and in doing so show that each RPE is material relative to both totex and our measure of general output price inflation. This information should align with the data provided in the BPDTs.
- evidence to support all proposed RPEs, including clear evidence of a sustained and material deviation between input costs and our measure of general output price inflation.
- Proposed indices for any proposed RPEs, along with evidence to support their use in indexation and justification for their selection over alternatives. The plan should include proposed forecasts for any proposed indices, along with evidence of how these have been derived.
- an explanation of any RPE cost profiling effects proposed throughout the price control.

Ongoing efficiency

5.44. Our ongoing efficiency assumptions represent the reduction in the volume of inputs required to produce a given volume of output. Whereas RPEs relate to the changes in the price of inputs used by network companies, ongoing efficiencies relate, in part, to changes in the volume of those inputs used to provide services to users.

5.45. To enable us to assess ongoing efficiency appropriately, as a minimum requirement under Stage 1 of the BPI, DNOs must set out in their Business Plans the ongoing efficiency assumptions submitted for each expenditure, along with evidence of how these assumptions have been derived. This could include:

- any proposed comparator industries for the purpose of cost assessment, along with a justification for those proposed.
- an explanation of how any historic data has been used to derive efficiency forecasts, including a justification for the time-period selected and how forecasts capture enduring effects from efficiencies generated in previous price controls.
- a comparison of efficiency forecasts against efficiency gains realised in previous periods.

- interactions with innovation stimulus funding (past and future).
- interactions between ongoing efficiency forecasts and output quality.

5.46. This information should align with the data provided in the BPDTs.

Competition

5.47. Guidance is included below for late competition and early competition. Our package of guidance for DSO principles³⁹ sets out the standards we expect and information we require for how DNOs plan to run competitive processes to procure flexibility.

5.48. As a minimum requirement under Stage 1 of the BPI, DNOs must provide information to late competition and early competition as set out in this section.

Late competition

5.49. Companies must set out their best view of which projects meet the late model criteria for competition (new, separable, and high value). Where the company sets out its view that a project in its Business Plan submission valued at over £100m does not meet the criteria for competition, the company must provide detailed reasoning through additional commentary. In presenting projects in their Business Plans, companies must also consider and indicate whether our approach to applying 're-packaging' and 'bundling' would be appropriate for those projects.⁴⁰

5.50. Companies should not seek to split larger, single projects into multiple smaller projects for the purpose of avoiding the high value criterion.

Early competition

³⁹ See page (27) of this document for our DSO transition guidance

⁴⁰ More information on our re-packaging principle is available at page 22 of our November 2016 decision document [Extending competition in electricity transmission: Decision on criteria, pre-tender and conflict mitigation arrangements](#)

- 5.51. To facilitate the identification of the system needs for which early competition may be appropriate, companies are required to flag in their Business Plans system needs (or projects) which are valued above the threshold value of £50m.
- 5.52. Of the projects flagged as meeting the threshold value, companies can consider whether, in their view, any would have no reasonable probability of being addressed by an alternative solution (contestability test).⁴¹
- 5.53. If a company considers it would not be in the interests of consumers for early competition to be used for any of its flagged system needs/projects it must provide reasons. For example, this might be the case where the system need or project is part of a wider programme of work and the separation of one aspect would make the overall programme more expensive for consumers.

⁴¹ Please see [Annex 2 of the RIIO-ED2 Sector Specific Methodology Document](#), paragraph 12.23 for more.
https://www.ofgem.gov.uk/system/files/docs/2020/07/ed2_ssmc_annex_2_keeping_bills_low_0.pdf

6. Financial information

- 6.1. As a minimum requirement under Stage 1 of the BPI, DNOs must provide financial information as set out in this section.
- 6.2. We will provide financial BPDTs, designed to gather relevant information on, for example, tax, pensions and asset disposals. Companies must use these BPDTs and the Business Plan Financial Model (BPFM) to submit Business Plan information, including any analysis presented in the plan such as financeability analysis, scenarios or tables of values. If any other models or tools are used to produce alternate or supplementary analysis, such as bill impacts, then these must be submitted with, and clearly cross-referenced to, the Business Plan. Where applicable, inputs to the BPFM should be linked to the corresponding BPDT.
- 6.3. We will pre-populate the BPFM with all the parameters set out in the finance section of the RIIO-ED2 Sector-Specific Methodology Decision⁴² and forecast closing RIIO-ED1 price control financial model (PCFM) data, for example regulatory asset value (RAV). The BPFM will allow companies to populate it with their plans to calculate expected allowed revenues. It will also be used for assessing the financeability of the plan and will include a suite of commonly used financial metrics.
- 6.4. Consistent with RIIO-ED1, the BPFM will primarily be set up to reflect the notional company. However, worksheets will be included to allow analysis of the actual company financing costs, structure and performance.⁴³
- 6.5. Companies must complete the BPFM in accordance with the Ofgem guidance set out here and any guidance accompanying the BPFM, including incorporating Ofgem’s working assumptions for cost of capital returns. Companies must also include a financeability assessment (using Ofgem’s working assumptions for cost of capital returns) for both the notional and actual company, including target ratings.
- 6.6. Business Plans must clearly set out:

⁴² https://www.ofgem.gov.uk/system/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance_0.pdf

⁴³ Guidance for modelling the notional and actual company base cases is provided in Appendix 5.

- financial projections for each year of the RIIO-ED2 period.⁴⁴
- the company's target ratings (including consideration of the trade-offs of different target rating levels) and the key financial ratios and qualitative factors used to assess maintenance of those target ratings.
- the results of the Ofgem-suggested set of common stress test scenarios⁴⁵ with results clearly explained.
- a clear explanation of any additional stress test scenarios, including rationale, results and commentary of results.
- a clear explanation of the company's proposed capitalisation and depreciation rates and the basis for these proposals (for example, if proposed capitalisation rates match accounting treatment of opex and capex).
- if any adjustments to capitalisation or depreciation rates are proposed for financeability or bill smoothing purposes networks must include evidence for these adjustments and the level of customer support for such adjustments (and/or consideration of customer preferences).
- clear explanation of the company's dividend and equity issuance policy and strategy.⁴⁶
- fully completed BPDTs in accordance with the relevant Ofgem guidance that accompanies the BPDTs.

⁴⁴ Projections must be shown in table format with each year of RIIO-ED2 shown and must include allowed revenue breakdown, summary financial information, and key financial ratios shown to 2 decimal places. It is not a general requirement to provide detailed financial performance projections or bill profile beyond the RIIO-ED2 period. However, if companies have concerns regarding longer term bill profile, financial performance or credit metrics we would invite companies to submit extended models, if appropriate.

⁴⁵ As outputs of the BPFM. These are set out in Table 19 of [RIIO-2 Sector Specific Methodology Decision – Finance](#) (gas distribution and transmission). In paragraph 4.10 of [Annex 3 to the RIIO-ED2 Sector Specific Methodology Consultation](#), we proposed that the stress test scenarios used in the gas distribution and transmissions sectors could also be applied to RIIO-ED2 business plans. Our decision on this will be in the Finance Annex of the RIIO-ED Sector-Specific Methodology Decision, once published.

⁴⁶ If no such policy or strategy exists then the business plan must provide an explanation of why no policy exists and what the company expects might influence their decisions on dividends and equity issuance in RIIO-ED2.

6.7. Business Plans must clearly demonstrate:

- a clear understanding of financial risk and evidence of risk management measures. This must include a clear explanation of the assumptions underpinning company risk and scenario analysis and a description of how risk analysis takes into account company actions for mitigating downside risks.
- an assessment of overall risk of the Business Plan, consideration of different notional gearing levels and realistic and well-explained proposals for notional gearing, including consideration of cost and benefit trade-offs of different notional gearing assumptions.
- justification for any proposed company-specific alternative cost of capital estimates (for example, for RAV-weighted debt index for networks with unusual RAV growth profiles), including customer support for any such alternatives.⁴⁷

6.8. Business Plans must also include licensee Board assurance that the Board is satisfied:

- that the licensee is financeable on both a notional and actual capital structure basis (using the Ofgem working assumptions for cost of capital allowances⁴⁸ and, if applicable, expected incentive outperformance), or
- that if any financeability challenges are identified the Business Plan clearly sets out:
 - detail of what these challenges relate to (for example, servicing equity or debt),
 - what efforts could be made to address them,
 - that all applicable measures to aid financeability have been considered; and
 - that statements and conclusions are supported by evidence and justification.

⁴⁷ If any company elects to also submit alternative cases for cost of capital estimates other than those specified as working assumptions then this must be submitted in a separate document to the main Business Plan. In addition, any financeability assessment using different cost of capital working assumptions must be submitted as a separate document to the notional and actual financeability assessment based on the cost of capital working assumptions.

⁴⁸ https://www.ofgem.gov.uk/system/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance_0.pdf

7. Presentation and structure of plans

Presentation

- 7.1. Plans should be concise – no longer than 200 pages excluding BPDTs and the BPFM - with the emphasis on keeping the core text as short as possible, while presenting proportionate evidence and justification for the proposed expenditure and outputs.
- 7.2. Where the company needs to provide further, more detailed information, it should use annexes, which will not count towards the 200-page limit. Annexes should be clearly signposted and referenced within the core Business Plan text. DNO strategies for Vulnerability, Major Connections, DSO as well as EAPs should be provided as annexes.
- 7.3. Where more technical information needs to be submitted, this should be provided in the annexes. The company should ensure that the annexes are as clear and readable as the rest of the Business Plan. Business Plans should be clearly written, with considerable emphasis on making them as easy to read as possible (avoiding small font sizes).
- 7.4. We will require each company to submit a short strategic summary report alongside their Draft and Final Business Plans detailing the key data and information contained within plans. We will work with the companies to agree a common reporting format for these strategic summaries.

Structure

- 7.5. Although Ofgem does not prescribe a particular structure that plans must follow, it is important to ensure that we can easily identify material contained in the plans and any annexes that will be relevant to our assessment. Companies should complete and submit a Minimum Requirements Index Sheet⁴⁹ to identify where material relating to the BPI minimum requirements can be found within the Business Plan.

⁴⁹ The Minimum Requirements Index Sheet has been published alongside this document as part of the Business Plan Guidance.

Cross-referencing

- 7.6. In order to successfully navigate the plans, companies should effectively cross-reference between different sections. Wherever possible, we encourage DNOs to use hyperlinks when referencing any of the data tables, annexes or any further detail which is explored elsewhere in the plan.
- 7.7. It is important to have clear links between the data tables and the core narrative sections. Data tables should be clearly numbered and any data in the narrative should, where possible, be clearly linked to the relevant data table number (using hyperlinks wherever possible). For each data table there should also be a link to where in the core text this data is discussed. For some data tables this may be more than one part of the plan that describes the data.

Business plans for DNO groups

- 7.8. DNOs that comprise more than one licence area should submit a single plan covering all of its licence areas. For the purposes of the BPI, Ofgem's assessment will be carried out on the Business Plan as whole, rather than at the level of the licensee.

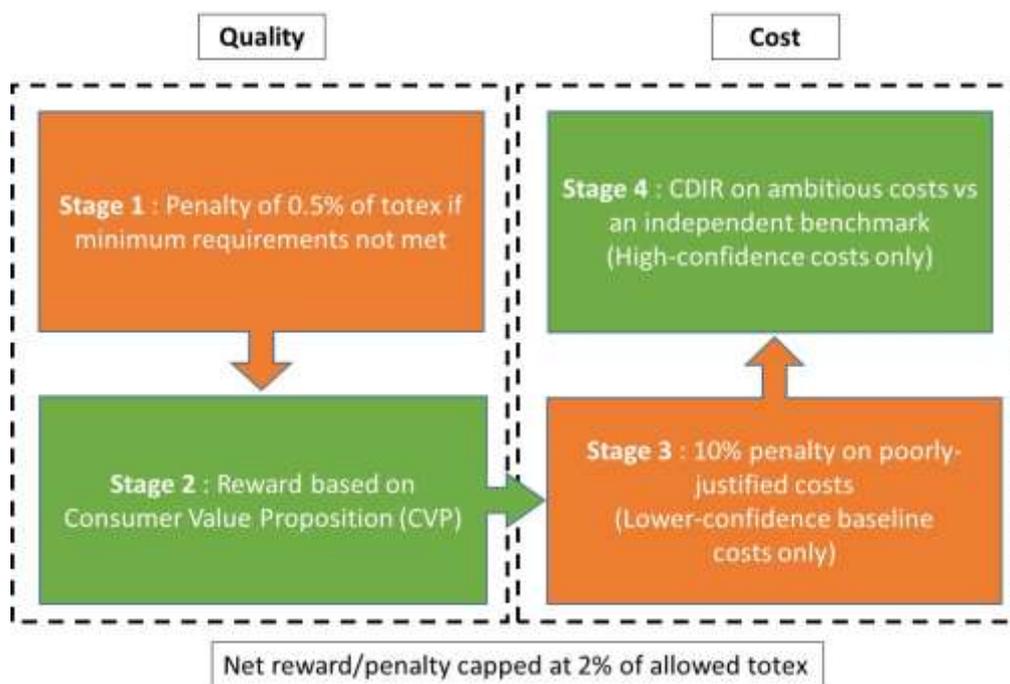
Summary tables for Outputs, Uncertainty Mechanisms and CVP proposals

- 7.9. To assist our review of Business Plans, companies must complete the bespoke output proposal summary tables in which companies should include basic information about all of the Outputs, Uncertainty Mechanisms and CVP proposals that are set out in their plans. To complete these tables, DNOs should only need to cross-refer to material contained elsewhere within their business plans. Companies should submit completed tables alongside their Business Plan.

8. The Business Plan Incentive

- 8.1. This section describes how Ofgem will go about assessing Business Plans for the purposes of the BPI.⁵⁰
- 8.2. The purpose of the BPI is to drive benefits for consumers by rewarding companies for plans that offer consumers additional benefits and value for money. Companies that submit Business Plans that fail to meet minimum requirements, and/or that have poorly justified cost forecasts will incur a penalty.

Figure 1 – design of the BPI



Note: 'CDIR' refers to the confidence-dependent incentive rate⁵¹

- 8.3. This Guidance document sets out the minimum requirements that are relevant to the Stage 1 assessment and our approach to the Stage 2 CVP assessment. Stages 3 and 4 of the BPI involve a separate assessment of the costs included within companies'

⁵⁰ Information on the BPI is set out in Section 10 of Annex 2 to the [RIIO-ED2 Sector Methodology Decision](#)

⁵¹ See paragraphs 10.4-10.25 of the Annex 2 to the [RIIO-ED2 Sector Methodology Decision](#)

Business Plans. This Guidance document does not provide detail on the approach Ofgem will take to cost assessment.

8.4. In assessing company Business Plans, Ofgem will also take into account the views of the Ofgem RIIO-2 Challenge Group and CEGs. This includes the assessment by those Groups of:

- whether the minimum requirements have been met at the BPI Stage 1 assessment.
- whether activities with associated costs included in the Business Plan are sufficiently well-justified (including but not limited to the Stage 3 assessment).
- whether and to what extent each company's CVP represents additional benefits to consumers, including views on any quantification of such benefits.
- Whether there are appropriately independent baselines to justify the classification of costs as high-confidence baseline costs (including but not limited to the Stage 4 assessment).

Stage 1: Minimum requirements

8.5. We expect Business Plans to be fully justified and accompanied by all relevant evidence, including, where appropriate expert and legal evidence (on a confidential basis if need be).

8.6. To meet the minimum requirements, we expect the plan to be both complete and of a satisfactory quality. A plan that does not meet these requirements may be subject to a penalty.

8.7. For a plan to be complete under the Stage 1 BPI assessment, it must:

- contain all the material identified in this Guidance as being a minimum requirement for the purposes of the Stage 1 BPI assessment (the relevant material is listed in the Minimum Requirements Index Sheet).
- be presented in a clear and understandable manner and in line with the timetable for submissions.

- comply with Ofgem’s Data Assurance Guidance for Electricity and Gas Network Companies.⁵²
- demonstrate how the plan has been tested, challenged and developed using the RIIO-ED2 Enhanced Engagement process.⁵³
- include a clear explanation of what has changed in the final Business Plan from the draft Business Plan.

and must also have regard to the guidance given in Section 7 of this document on the presentation and structure of Business Plans.

8.8. For a plan to be of satisfactory quality to meet the minimum requirements under the Stage 1 BPI assessment it will need to demonstrate that, where appropriate:

- the proposals are sufficiently evidenced, including evidence of consumer expectations and willingness to pay.
- there is a credible plan for delivery, that takes into account current levels of performance and any steps necessary to improve upon these.
- commitments are proposed that offer safeguards on the delivery of the Plan’s ambitions.
- the proposals have been informed by, and subject to the challenge of the enhanced stakeholder engagement process. Where disagreements with the company’s proposals have arisen, we will expect the company to have explained in their Plan the nature of this disagreement and the justification for the Company’s positions.

8.9. Any decision that a Business Plan has failed Stage 1 would be taken after we have carried out an assessment of the materiality of any failures of individual minimum requirements. This materiality assessment will consider:

- The number of minimum requirements that have been failed.

⁵² See <https://www.ofgem.gov.uk/publications-and-updates/data-assurance-guidance>

⁵³ See [Enhanced Stakeholder Engagement Guidance for RIIO-ED2 - Version 1](#)

- The extent to which our ability to set the RIIO-ED2 price control has been compromised by the failure(s) in question (for example, due to missing or incomplete information).
- Any consumer detriment that may be expected as a result of the failure(s) in question.
- Any other information relevant to the materiality of the failure(s) in question.

8.10. Companies whose plans fail Stage 1 will not be eligible for a reward under stages 2 or 4 of the BPI.

8.11. For the avoidance of doubt, where Ofgem makes a decision that a Business Plan has successfully met the minimum requirements at Stage 1, that does not imply that Ofgem accepts all aspects of the plan (or relevant underlying evidence). Companies whose plans meet the minimum requirements will then have the opportunity of potentially receiving a reward and their plans will be assessed at Stages 2, 3 and 4 of the BPI process. This includes the potential for a licensee to face a penalty under Stage 3 of the BPI. Ahead of reaching a decision on the plans, we will consult on proposals in draft determinations, amongst other matters.

Stage 2: Consumer Value Proposition

8.12. Under Stage 2 of the BPI, we will assess what additional value beyond the minimum requirements the plan offers and beyond the functions typically undertaken by an energy network company as business as usual.

8.13. Under the CVP, Business Plans should set out the ways in which their plan goes beyond the minimum requirements and beyond the functions typically undertaken by an energy network company as business as usual and how this will lead to benefits for consumers. Ofgem will assess the proposals included within the CVP and determine whether the company should receive a reward should and if so, the size of the reward.

8.14. We expect each CVP proposal to fall into one of the following categories:

- i) Proposals that demonstrate approaches to providing services to vulnerable consumers that clearly go beyond the baseline expectations (see Appendix 1).

- ii) Proposals that demonstrate approaches to providing services to major connection customers that clearly go beyond the baseline expectations (see Appendix 2).
 - iii) Proposals that exceed the baseline expectations that we have set out for EAPs (see Appendix 30).
 - iv) Proposals that demonstrate approaches to DSO activities that clearly go beyond the baseline expectations set out in our roles and principles for DSO (see Appendix 4).
 - v) Proposals that exceed the minimum requirements that we have set out for whole system approaches in the whole systems section of this RIIO-ED2 Business Plan Guidance.
- 8.15. CVP proposals must be summarised clearly in standalone section within the Business Plan. CVP proposals may, however, draw upon material that is embedded within each of the relevant areas that contribute towards the CVP and this must be signposted.
- 8.16. Alongside CVP proposals, DNOs must provide evidence of the associated additional value to consumers. We expect this evidence to be quantitative, independently substantiated and take into account any distributional impacts on different types of consumers. Companies must also seek to provide a monetised value to consumers for each proposal forming part of its CVP. Companies should set out any methodology employed in determining this monetised value, along with any underlying data used in its calculation. Ofgem will take this and other relevant information into account in our assessment to determine whether a proposal should receive a reward and, if so, the size of that reward. To facilitate our assessment, wherever possible, we encourage DNOs to work together to use a common methodology to determine the monetised value associated with their proposals.⁵⁴
- 8.17. The monetised value should be at least £3m per proposal and the total number of proposals should not exceed ten per Business Plan.⁵⁵
- 8.18. Each proposal forming part of the CVP will be assessed individually on its own merit. Where a company is unable to propose a suitable methodology for calculating a monetised value to consumers associated with a proposal, Ofgem may be unable to

⁵⁴ We note the DNOs have developed a Social Return on Investment tool for this purpose.

⁵⁵ For the avoidance of doubt, this figure refers to the monetised value of the proposal prior to any application of the totex efficiency incentive rate, as described in paragraph 8.22.

determine an appropriate size of reward for that proposal, which may lead to the proposal receiving no reward.

8.19. Proposals forming a part of a company's CVP should be clearly and unambiguously identified as such.

8.20. If the company receives a reward under stage 2 of the BPI, Ofgem will consider whether it should include provision for the clawback of the reward in the event that the commitment(s) in question are not delivered. Companies should consider this in their Business Plan submission and, where appropriate, commit to returning any associated rewards in the event of non-delivery.

8.21. In assessing a CVP proposal, Ofgem expects to consider matters including:⁵⁶

- whether the proposal goes over and above the minimum requirements under Stage 1 of the BPI.
- the extent to which the proposal represents additional value to consumers, taking into account the functions typically undertaken by an energy network company as business as usual. For example, we would not expect to reward activities currently undertaken by DNOs in RIIO-ED1.
- the extent to which the proposal includes evidence that shows how it incorporates consumer expectations/priorities and value (which may include willingness to pay).
- the extent to which the proposal has been reviewed by and received the support of the Ofgem RIIO-2 Challenge Group, the DNO's CEG or, otherwise, the extent to which reasons for the lack of such support are clearly and satisfactorily explained.
- whether the proposal includes a monetised consumer benefit and an associated monetisation methodology and the extent to which such a methodology is reasonable. The more confidence we have that the methodology is robust and generates an accurate value of consumer benefit, the more confidence we will have that any associated reward is appropriately sized and will provide a net benefit for the consumer. We consider that the use of a common methodology will enable

⁵⁶ This list is not exhaustive.

consistency and comparability between how DNOs' estimate consumer benefit and, in doing so, is likely to provide a level of confidence of whether consumer benefit has been reasonably calculated. For the avoidance of doubt, it is the responsibility of the DNO to propose a monetised consumer benefit and an associated monetisation methodology.

- the extent to which the monetised benefits associated with the proposal accrue to existing and future consumers including consumers in vulnerable situations.
- where a company makes a proposal that includes a commitment to deliver something within RIIO-ED2 (for example, a commitment to complete a project), whether arrangements to address the possibility of non-delivery are set out and the extent to which such arrangements for non-delivery are appropriate and implementable.

8.22. Where a CVP proposal relates to the delivery of something within the RIIO-ED2 period and is rewarded, Ofgem expects to determine the size of the reward by multiplying the net consumer value by the company's totex efficiency incentive rate. This is to help ensure that companies do not spend more in delivering the benefit than the value of that benefit to consumers.

8.23. It may be the case that companies include additional costs in their forecasts associated with the delivery of CVP proposals. Where this is the case, Ofgem will consider any consumer benefit that arises from the proposal net of these costs. If these costs are clearly identified within companies' forecasts, Ofgem will be able to exclude them from relevant benchmarking exercises. If such costs are included in forecasts but not clearly identified (and are therefore included in relevant benchmarking exercises), this could have an impact upon the assessed level of efficiency of the company.

8.24. Where a company includes a proposal for an uncertainty mechanism as part of its CVP, this should include an assessment of the likelihood of the mechanism being utilised in the RIIO-ED2 price control period.

9. Next Steps

9.1. RIIO-ED2 will start on 1 April 2023. As part of the RIIO-ED2 process, companies will also be expected to submit both draft and final Business Plans to the Challenge Group. Our indicative forward workplan for RIIO-ED2 is below in Table 2. We started the consultation process via our Open Letter consultation for RIIO-ED2 in August 2019.

Table 2 - Indicative timeline for RIIO-ED2

Date	Milestone
1 July 2021	Draft Business Plan submission to RIIO-ED2 Challenge Group
1 December 2021	Final Business Plan submission to Ofgem and the RIIO-ED2 Challenge Group
Spring 2022	Open Hearings
June 2022	Draft Determinations
Autumn 2022	Open Meetings
December 2022	Final Determinations Statutory consultation on RIIO-ED2 Licence
February 2023	Decision on RIIO-ED2 Licence
1 April 2023	Start of RIIO-ED2

Appendix 1 - Improving service standards for consumers in vulnerable situations: principles and baseline expectations

The following are the principles and baseline expectations for the standards of service that we expect DNOs to deliver for consumers in vulnerable situations. DNOs' strategies for vulnerable consumers should be aligned to these principles and baseline expectations.

Where a DNO considers the baseline expectation is not appropriate, the DNO should provide clear justification as to why this is the case. Where relevant, this should be supported by stakeholders and the DNO's CEG.

Principle 1: Effectively support consumers in vulnerable situations, particularly those most vulnerable to a loss of supply, through a sophisticated approach to the management, promotion and maintenance of a PSR register.

As a baseline expectation, we expect DNOs to:

- undertake proactive and targeted advertising of the PSR and the services offered to vulnerable consumer groups. By targeted, we mean aimed at specific areas of highest need or where data analysis suggests there are gaps in PSR reach.⁵⁷
- have a data and information strategy in place, specific to meeting the needs of vulnerable consumers. This should demonstrate how DNOs will maintain their PSR database, with customer data checks at least every 24 months. Data analysis should be used to inform the development and delivery of service offerings. As part of their data and information strategy, DNOs should consider how best to facilitate the sharing of vulnerable customer data with suppliers and other utilities to get customers onto the PSR in line with Data Best Practice.
- communicate with and provide information to PSR customers in formats suited to a range of additional communication needs, including hearing or sight loss.⁵⁸ For accessibility services, companies should meet a minimum standard of Accessibility AA.

⁵⁷ PSR Reach is defined as registrations to a DNO's PSR Register by need code.

⁵⁸ Under SLC 10, DNOs must provide information, with regards to a supply interruptions, to a PSR customer with additional communication needs in a manner or format that is suitable for that customer's additional communication needs.

Translation services should be available for at least the top 10 languages in a DNO area.

- have dedicated lines, or prioritisation processes, available for customers registered on the PSR when they need to contact the DNO, regardless of the time of day.
- deliver a wide range of support during, or in relation to, a supply interruption that reflects different customer needs and is, at a minimum, in line with the company's existing RIIO-ED1 provision. There should be a clear link between the information held about PSR customers and how this is used to target, or prioritise, support. We consider a wide range of support could include, but is not limited to, crisis packs, hot meals and drinks, mobile generation, alternative accommodation or on-site welfare units. We would expect there to be multi-channel information provision during supply interruptions. Companies can deliver this support directly or through/in conjunction with partner agencies.

Principle 2: Maximise opportunities to identify and deliver support to consumers in vulnerable situations through the smart use of data.

As a baseline expectation, we expect DNOs to:

- utilise social indicator, or vulnerability, mapping to inform their service development and approach to partnerships. This approach may form part of the DNOs' PSR management, but the identification of vulnerability should not be limited to PSR registrations and should recognise that vulnerability can be transient and may evolve in the transition to Net Zero.
- maintain a good understanding of the social issues associated with the scope of their role, the prevalence of these within their consumer base and how they are evolving.

Principle 3: Understand new forms of vulnerability, in particular by identifying blockers to participating in a smart flexible energy system.

As a baseline expectation, we expect DNOs to:

- have an extensive network of partnerships with a range of organisation types, from multiple sectors including other utilities.

- make use of referral channels and signposting support for customers. This will primarily be done through customer service teams, but we expect DNOs to seek opportunities to maximise consumer touchpoints.
- be involved in two-way flow partnerships supporting vulnerable customers, in line with the companies' understanding of social issues in their region. This should include the network company having direct involvement in the end to end process of delivering support, providing expertise and co-creating schemes. Where appropriate, we would expect to see example schemes where the DNO is taking a leading role.
- have a clear process for identifying which partnerships are likely to be most effective at delivering benefits through co-operative working. This should be clearly linked to the priority areas of focus of the strategy, in particular addressing fuel poverty and supporting those at risk of being left behind by the energy system transition.

Principle 4: Embed the approach to protecting the interests of consumers in vulnerable situations throughout a company's operations to maximise the opportunities to deliver support.

As a baseline expectation, we would expect DNOs to:

- have processes in place for embedding a commitment to protecting the interests of vulnerable customers within the company's culture. This should include a well-justified approach to ensuring all staff have received an appropriate form of vulnerability training to maximise the potential from all customer touchpoints. Companies should make use of external advice and support to set strategic direction, such as a vulnerability advisory or research panel. DNOs should appoint a vulnerability champion at senior management or Board level.
- seek opportunities to protect vulnerable customers throughout their capabilities.

Appendix 2 - Improving service standards for major connections customers: principles and baseline expectations

The following are the principles and baseline expectations for the standards of service that we expect DNOs to deliver to connections stakeholders. DNOs’ strategies for major connections should be aligned to these principles and baseline expectations.

Where a DNO considers the baseline expectation is not appropriate, the DNO should provide clear justification as to why this is the case. Where relevant, this should be supported by stakeholders and the DNO’s CEG.

Principle	Baseline Expectation	Relevant Market Segments (RMS)
Support connection stakeholders prior to application by providing accurate, comprehensive and user-friendly information	1. Provide access to up to date and relevant information to enable a connection stakeholder to decide whether, and where, to connect to the distribution network. This should include graphical network records that show the location, size and type of assets.	Applies to all Relevant Market Segments (RMS) ⁵⁹
	2. Communicate a clear connections process for all customers. This should include providing clarity of DNO, customer and third-party responsibilities. This should also include providing clarity on how issues that arise can be raised and resolved.	Applies to all RMS

⁵⁹ Applies to all Relevant Market Segments, ie metered demand LV, HV, EHV and 132kV; metered distributed generation (DG) LV, HV and EHV; Unmetered LA, PFI and Other.

Principle	Baseline Expectation	Relevant Market Segments (RMS)
	3. Provide clear explanations of the types of connection products available, the associated costs of each and the information that would need to be provided by the customer to make an application. Where appropriate, this should also include the provision of general information on the potential implications for a customer’s connection offer if they change their own requirements, if other customers are seeking to connect in the same area or if they do not accept an offer within its validity period.	Applies to all RMS, except Unmetered ⁶⁰
	4. Provide support and help to customers through appropriate channels which should include, but not be limited to, connections surgeries.	Applies to all RMS, except Unmetered
	5. Have robust processes in place to proactively engage with stakeholders. This should include how the DNO plans to both identify and address connections issues.	Applies to all RMS
	6. Provide clearly signposted information on capacity available to enable points of connection to be identified.	Applies to Metered demand HV, EHV and 132kV; Metered DGHV
	7. Provide guidance that explains to customers the criteria to allow an unmetered connection to be made, ensuring compliance with the Unmetered Supply Regulations.	Applies to Unmetered LA, PFI and Other

⁶⁰ Applies to Metered demand LV, HV, EHV and 132kV; metered distributed generation (DG) LV, HV and EHV. Does not apply to Unmetered LA, PFI and Other.

Principle	Baseline Expectation	Relevant Market Segments (RMS)
	8. Provide support in the form of tailored pre-application communication to suit different stakeholder needs.	Applies to Unmetered LA, PFI and Other
Deliver value for customers by ensuring simplicity and transparency through the applications process	9. Have clear and simple customer application process, which accounts for the particular needs of different groups of customers and which can be shaped by the parties involved. This should include providing options for how customers can apply for new connections and ensure these are clearly communicated.	Applies to all RMS
	10. Provide tailored communication plans to suit different customer needs, including the provision of specified points of contact during the application process. This should include the provision of various channels through which customers can access support or help.	Applies to all RMS, except Unmetered
	11. Provide customers with clear connection quotation cost breakdowns, listing out the cost components and any assumptions used in the formulation of a connections offer.	Applies to all RMS, except Unmetered
	12. Have processes in place to help customers identify how they could make changes to their connection requirements that would meet their needs and allow them to get connected more quickly or cheaply.	Applies to all RMS, except Unmetered
	13. Specifically, in relation to flexible connection customers, provide clarity around conditions and circumstances of current and future curtailment associated with a connections offer.	Applies to Metered demand EHV and 132kV; Metered DGHV and EHV

Principle	Baseline Expectation	Relevant Market Segments (RMS)
	14. Provide guidance that explains to customers the criteria to allow a DG connection to be made to ensure compliance with relevant Engineering Recommendations (G98/G99) ⁶¹ .	Applies to metered DGLV, HV and EHV
	15. Have in place options for 'fast track' reconnections of critical infrastructure such as internet cabinets that have been damaged in road traffic accidents or similar.	Applies to Unmetered Other
Facilitate the delivery of timely and economical connections that meet customers' needs.	16. Provide tailored communication plans to suit different customer needs, including the provision of specified points of contact during the delivery process. Ensure various channels are available for customers to access support or help.	Applies to all RMS, except Unmetered LA, PFI and Other
	17. Complete any cost reconciliation in a timely manner.	Applies to all RMS
	18. Where there are slow moving projects and where these may impact on other customers, have processes in place for releasing capacity that is not being used.	Applied to Metered demand HV, EHV and 132kV; Metered DG HV and EHV
	19. Have processes in place for the promotion of certain types of customers (such as storage) in connection queue in circumstances where they will help others connect more quickly/cheaply.	Applies to Metered DG HV and EHV
	20. Provide access to services that facilitate the delivery of timely and economical connections such as rent a jointer services.	Applies to Unmetered LA, PFI and Other

⁶¹ Engineering Recommendations can be found on the Energy Networks Association (ENA) document catalogue: <https://www.ena-eng.org/ENA-Docs/>

Appendix 3 - Environmental Action Plan (EAP): baseline expectations

DNOs' EAPs should be aligned to the baseline expectations set out below. The baseline expectations reflect the level of ambition we expect companies to demonstrate for individual areas.

Where a DNO considers the baseline expectation is not appropriate, the DNO should provide clear justification as to why this is the case. Where relevant, this should be supported by stakeholders and the DNO's CEG.

Business carbon footprint (BCF)

- Adopt a science-based target⁶² for the company to reduce its scope 1 and 2 BCF by 20xx⁶³, without relying on international GHG offsetting, that is in line with Net Zero.
- Commit to efficient and economic actions to reduce controllable BCF in RIIO-ED2.
- Identify metrics, and associated targets, for RIIO-ED2 to track the impact of implementing actions and the overall progress towards the science-based target and Net Zero.
- Commit to reporting on BCF reduction and progress towards science-based target and Net Zero using a common BCF methodology. Reporting should include progress in reducing scope 3 emissions.⁶⁴

⁶² This should be verified by the science-based target initiative (SBTi): <https://sciencebasedtargets.org/>
⁶³ 20XX denotes that companies will need to specify a long term date to achieve the specified target. We would then expect companies to specify the associated RIIO-ED2 milestone.

⁶⁴ Scope 3 emissions are a consequence of actions which occur at sources which the DNO does not own or control and which are not classed as Scope 2 emissions. Although a DNO's science-based target does not include scope 3 emissions, DNO's reporting should include progress against reducing scope 3 emissions.

Sulphur Hexafluoride (SF₆)

- Commit to implementing a strategy in RIIO-ED2 to manage SF₆ on their network. This should include economic and efficient actions to reduce leakage rates and where appropriate, economic and efficient SF₆ asset replacement.
- Adopt a target for SF₆ leakage reduction.
- Commit to reporting on total SF₆ bank and leakage reduction rates using a common DNO methodology.

Losses

- Develop and commit to implementing a strategy to efficiently manage both technical and non-technical losses on the DNO's network over the long term. This should include specific actions and performance measures to track the impact of actions in RIIO-ED2.
- Commit to reporting on the progress of implementing the losses strategy and associated performance measures.
- Contribute to the evidence base on the proportion of losses that network companies can influence/control.

Embodied carbon

- Commit to monitoring and reporting on embodied carbon in new projects.
- Commit to collaborating with DNO's supply chain on addressing challenges to reduce embodied carbon in the network.
- Commit to establishing baseline and a target to reduce embodied carbon on new projects during RIIO-ED2.

Supply chain management

- Adopt high standards of environmental management in supplier code, including requirements for public disclosure of metrics and cascading code to their suppliers that are material to company's inputs.
- Adopt target of more than 80% of suppliers (by value) meeting code in RIIO-ED2.
- Commit to reporting on actual percentage of suppliers (by value) meeting code.

Resource use and waste

- Update procurement processes to embed Circular Economy principles.
- Adopt a target for:
 - Zero waste to landfill by 20XX.
 - Recycled and reused materials as a percentage of total materials by 20XX.
- Commit to reporting on actual waste to landfill, recycling and reuse as a percentage of total.

Biodiversity/natural capital

- Adopt appropriate tool to assess net changes in natural capital from different options for new connections and network projects.
- Adopt appropriate tool to monitor the provision of ecosystem services from network sites and report annually.

Fluid-filled cables

- Adopt a target for reductions in the volume of fluid (oil) used to top up cables.

Noise pollution

- Commit to reporting on actions taken to reduce noise pollution.

Polychlorinated Biphenyls (PCBs)

- Commit to reporting on the volume of PCB-contaminated equipment on the network.

Appendix 4 – DSO roles and activities in RIIO-ED2

Role 1: Planning and network development

Activity 1.1: Plan efficiently in the context of uncertainty, taking account of whole system outcomes, and promote planning data availability

1.1. The purpose of this activity is to ensure that DNOs' planning processes are clear, that high quality, data-driven decisions are made, and that DNOs provide stakeholders with relevant information to inform their own decision-making.

1.2. Our baseline expectations are:

- DNOs to define and develop enhanced forecasting, simulation and network modelling capabilities, with processes in place to drive continual improvement to meet network and user needs. We expect increased monitoring equipment to be rolled out across their network where it has demonstrable net value. We expect demonstrable value to include a rigorous presentation and analysis of needs and use of data for networks and non-networks parties, well established functional and technical specifications, and cost-effectiveness analysis. DNOs should also explore all reasonable options to use data from third parties, including harnessing smart meter data subject to data sharing agreements, to improve their simulated forecasting.
- DNOs to have in place standard and effective processes for sharing network planning information with other network licensees, including the ESO, network users and other interested parties, for example to enable innovation and support the development of local government plans for decarbonisation. As part of this, we expect DNOs to liaise with their network users to collate and share data, to publish comprehensive and comparable heat maps that provide network users high value information about where to connect, and to inform their operations. These geographic information system datasets should be available for download or for access independently of DNO websites (for example, via Web Map Service server connections). Ofgem-led reforms to the LTDS will seek to licence minimum standards against these improvements.
- DNOs to have in place transparent and robust processes for identifying and assessing options to resolve network needs, using competition where efficient. This should

include demonstrable cross-sector⁶⁵ engagement, optioneering, and planning with sectors or vectors other than their own. DNOs should consider flexibility and promoting energy efficiency in addition to innovative use of existing network assets and traditional reinforcement. The process of identifying options should include engaging with other network licence holders and current and prospective network users. Options must be fairly compared against one another, with flexibility used where it is economic and efficient compared to investing in traditional reinforcement or technological solutions. We expect a consistent approach for valuing flexibility, taking into account the option value it provides in the context of uncertainty. DNOs must ensure transparency in their approach to allow scrutiny of decision-making.

Role 2: Network operation

Activity 2.1: Promote operational network visibility and data availability

1.3. The purpose of this activity is to ensure that DNOs are able to share relevant data on network operations to stakeholders, and to ensure that DNOs have sufficient network knowledge to operate their network under safe and reliable conditions.

1.4. We have signalled our intention to consult on an operational data licence, to require a minimum standard of operational data to be made available. If this is implemented, we expect DNOs to demonstrate compliance with this licence through the baseline expectations, as well as making wider efforts to improve operational information availability.

1.5. Our baseline expectations are:

- DNOs to improve network visibility and identification and sharing of operability constraints, including publishing this data to help avoid conflicting actions being taken by other network and system operators. DNOs must take reasonable steps to access and subsequently share, including by publishing, data and operability constraint information in a timely manner.

⁶⁵ 'Sector' refers to the distribution, transmission and operation of a single energy source. For example, the 'gas sector' includes the firms responsible for gas transmission, distribution, and system operation. By 'cross-sector', we refer to any licensee in one energy source sector, eg electricity, working with any licensee in another energy source sector, eg gas

- DNOs to provide the ESO with information across timescales about the DER it is planning to instruct to dispatch. Data should include contracted parties, availability and information on scheduled and unscheduled utilisation. Sharing this information in a timely manner should enable the ESO to identify which DER are available for its own needs and improve the ability of DER to stack value across markets.
- DNOs to gather sufficient information on DER characteristics and parameters to provide information and inform decisions to secure against events that could lead to disconnection of DER.
- DNOs to make available operational data that supports network users and other relevant stakeholders to make better decisions about how to use the network. Data should be readily available in agreed and common data formats. This could include, but is not limited to:
 - working network configuration data
 - losses recorded at substation level
 - outages both planned and unplanned
 - as recorded historic Feeder MW/MVA Utilisation and calculated headroom/footroom
 - utilisation and curtailment of areas under the control of capacity management systems such as Active Network Management systems.

Activity 2.2: Facilitate efficient dispatch of distribution flexibility services

1.6. This activity is about defining and developing system operability capabilities and the actions network companies take to operate the distribution system safely. The aim is to ensure DNOs facilitate dispatch of DER that is economic and efficient.

1.7. Our baseline expectations are:

- DNOs to have and regularly review a decision-making framework for when DER are instructed to dispatch in real-time. The decision-making process, including alternatives considered, should be transparent. This should promote coordination across services (including curtailment as part of non-firm connection agreements and ESO flexibility services), maximise liquidity, avoid market fragmentation and ensure dispatch results in the best outcome for the whole system; this includes service provision to the ESO and other distribution networks. As part of this decision-making framework, there must be rules in place for coordinating dispatch instructions for DSO and ESO flexibility

services. This could be through primacy rules or more comprehensive optimisation processes that better enable stacking of revenues for DER. The rules should be transparent, objective, and promote whole system efficiencies.

- DNOs shall facilitate secondary trading of distribution flexibility services and curtailment obligations. In this context, facilitating means providing the relevant operational data, ensuring the DNO has processes in place to collect the relevant data about the trade, and making the operational parameters clear (and justified in the context of network reliability and efficiency).
- DNOs to introduce clear processes for the design, development, and communication of the decision-making framework. These should include transparent and participatory processes for stakeholder input.
- DNOs to develop efficient, scalable dispatch instruction infrastructure and avoid proprietary systems. We expect clear definitions of different types of dispatch instruction for distribution flexibility services and transparent rules about when and in which markets they should be used. Circumstances for different dispatch instructions should be well-justified. Definitions of these circumstances should be developed with input and cooperation from network users. The application of hard dispatch controls shall be for the improved reliance on market-based mechanisms, not to the detriment of their development. Capabilities in network operations, for example in dispatch instructions and associated system architectures shall not be hard coded to the DNO. These must be developed so that they can be cost effectively assigned to another party in future if this is needed.

Role 3: Market development

Activity 3.1: Provide accurate, user-friendly and comprehensive market information

1.8. The purpose of this activity is to ensure that DNOs sufficiently inform stakeholders of information that will assist them in participating in, managing or otherwise engaging with markets in the long and short term. We recognise there are overlaps across other activities, but at the same time believe this information is sufficiently critical to warrant its own statement, and to also include wider information than that mentioned in prior activities.

1.9. Our baseline expectations are:

- DNOs collate and publish as much relevant data and information as reasonable that will help market participants identify and value opportunities to provide network services to DNOs and take market actions that support efficient whole system outcomes. Relevant data and information include planning and operational data (such as that set out in Activity 1.1 and 2.1). This should be provided with sufficient lead times to enable wider participation in distribution flexibility services markets. It also includes information on historic and future distribution flexibility services market actions. This should include tender results, prices bid and paid, the carbon content of aggregated units, how often DER is dispatched (and volumes) and other actions taken by the DNO (with anonymisation as required), including curtailment as part of non-firm connection agreements. The information should include all requirements set out in licence conditions to support DER to identify revenue opportunities. This increases the accessibility of tendering for distribution flexibility services for flexibility providers (while also taking account of DNOs flexibility needs).
- DNOs should, with stakeholder input, develop robust strategies for how they will collate and publish more helpful information, wherever possible consistently and in coordination with other network licence holders, and communicate this clearly.
- DNOs should regularly and actively engage with market participants to understand what data and information is helpful to support market development. While there will be minimum legal requirements set out in licences, we expect DNOs to use their stakeholder engagement to consider the most effective format and frequency of publishing that data to ensure it is user-friendly. The information must be easily accessible and navigable. We expect this includes publishing data in machine-readable formats.
- DNOs should, where reasonable, tailor both their information provision and engagement approaches to reflect different needs of potential market participants, including groups in vulnerable situations. In many instances, collaboration across DNOs in engagement is expected to reduce duplication, make it easier for stakeholders to engage and avoid stakeholder fatigue.
- DNOs should seek to ensure the information they publish is as accurate and unbiased as reasonable (ie correct at time of publication, as close as possible to the actual value and not skewed in any direction).

Activity 3.2: Embed simple, fair and transparent rules and processes for procuring distribution flexibility services

1.10. The purpose of this activity is to ensure distribution flexibility service market design leads to good competitive outcomes, including downward pressure on prices and innovative services.

1.11. Our baseline expectations are:

- DNOs to have clear processes in place for developing and amending distribution flexibility services products, contracts, and qualification criteria, that are, wherever possible, standardised.⁶⁶ The processes should be transparent and participatory, involving other DNOs, the ESO, and current and potential distribution flexibility service providers. DNOs should also coordinate and engage with third party platform providers, who can offer system value by providing new routes to market and driving whole system outcomes. DNOs should not prevent the emergence of this sector and should enable third party platforms to 'plug-in' to DNOs' flexibility procurement processes. Products and contracts should be adaptive to reflect prevailing system needs, type, and availability of flexible resources. The objective of these processes is to enable as wide participation in distribution flexibility services markets as possible.
- DNOs should identify the optimum combination of longer and shorter term lengths of markets and contract lengths reflecting the network need. Needs should be neutrally defined, to allow for a range of flexibility providers to participate. This will help improve market liquidity and the opportunities for innovation and dynamic competition. Individual decisions and frameworks for deciding market timeframes and contract lengths should be transparent, informed by stakeholders and justified as being the most economic and efficient solution. Notwithstanding, deviations from the standard should be justified with clear governance processes for managing change that should be clearly communicated. DNOs should have clear, comprehensive and transparent mechanisms and associated commercial structures for coordinating distribution flexibility services and ESO flexibility services procurement. DNOs shall not act as the commercial route for DER accessing ESO flexibility services. Transparent

⁶⁶ Standardisation of the technical parameters of the product, processes and the applicable contracts, not just in branding, with clear justification for any deviations, as well as data standards and methods for sharing this information.

(and possibly tripartite) commercial agreements may be required to reflect the potential effects of DER dispatch on distribution system operability and the role of DNOs in setting dispatch parameters (as set out in Activity 2.1 and 2.2). These agreements should remove exclusivity clauses as far as possible, including with regard to non-firm connections. Coordination on dispatch parameters should enable a closer to real-time understanding of what DER needs to be armed and available for a particular service, and what can be available to provide other services. DNOs should consider arrangements to support DERs to provide services that meet both DNO and ESO needs.

- DNOs should make available the necessary data to enable secondary trading, for example capacity and other peer-to-peer trading. Enabling includes defining, communicating and justifying the parameters in which these trades can take place for operability purposes.
- Market support services, such as pre-qualification, credit-checking and settlement must enable simple and cost-efficient participation in markets. DNOs should enable, and never prevent, the opportunity for third parties to provide these services where they could do so more efficiently.
- DNOs to introduce other proportionate measures, developed with robust stakeholder engagement, to identify and address actual and perceived conflicts between its market development and network ownership roles or other business interests.⁶⁷ Measures to address might include ring-fencing of particular teams and external auditing of objectivity in addition to measures that promote transparency and enable scrutiny.

⁶⁷ Other business interests could include services DNOs are able to provide outside of their regulated income. Earlier this year we consulted on DNOs using remote voltage control to provide the ESO with balancing services (CLASS) in RIIO-ED2. We are carefully considering the responses to this consultation and expect to provide an update in early 2021.

Appendix 5 - Financial Modelling of Notional and Actual Company Financeability Assessments

1.1. For the purposes of modelling the notional company base case we provide the following guidance:

- Allowed return (WACC) as set out in Table 3 of the SSMD Finance Annex⁶⁸.
- Additional expected return of 0.25% of equity portion of RAV representing an earned amount for the notional company in each year of RIIO-ED2.
- Totex allowances are assumed to equal licensee totex cost forecast for RIIO-ED2.
- Net debt is reset to the working assumption notional gearing level (60% net debt to RAV) at the start of RIIO-ED2, with any opening de-gearing assumed to be achieved by an equity injection or re-gearing assumed to be achieved by debt issuance.
- Debt costs are assumed to equal the working assumption for allowances set out in the RIIO-ED2 Sector-Specific Methodology Consultation.
- 25% of the licensee's debt is assumed to be CPIH linked (with a scenario test showing an alternative of 25% RPI-linked debt).
- Tax allowances are equal to tax costs, as calculated using the BPFM.
- Immediate transition to CPIH from 1st April 2023 for WACC allowance and RAV calculations.
- Opening RAV to be based on totex forecasts for RIIO-ED1 as provided in BPDT submission, and inclusive of any known logged-up adjustments (for example, the effect of site disposals).

⁶⁸ https://www.ofgem.gov.uk/system/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance_0.pdf

- Lagged revenue impacts arising from RIIO-ED1 are excluded (eg inflation true-up, cost pass-through adjustments, output incentive revenue and over / under collection of revenue).
- Depreciation rates to be proposed by the licensee based on useful economic lives and/or evidenced justification.
- Capitalisation rates to be proposed by the licensee based on operational practice to date, consideration of expected levels of opex and capex, balance of affordability, financeability and customer support.
- Dividend yield working assumption for modelling purposes of 3%.
- Equity issuance transaction costs working assumption of 5% of any amount forecast to be issued.

For the purposes of modelling the actual company base case we provide the following guidance:

- Allowed return (WACC) as set out in Table 3 of the SSMD Finance Annex.
- Additional expected return of 0.25% of equity portion of RAV representing an earned amount for the actual company in each year of RIIO-ED2.
- Totex allowances are assumed to equal licensee totex cost forecast for RIIO-ED2.
- Net debt to reflect actual company forecast net debt position for each year, as completed in the finance tables of the BPDTs.
- Debt costs to reflect actual company forecast for debt costs, as set out in the finance tables of BPDTs.
- Proportion of inflation linked debt and proportion of interest expense that is principal inflation accretion in each year to reflect actual company forecast, as set out in the finance tables of BPDTs.
- Tax allowances are equal to notional company tax allowances.

- Modelled forecast actual tax costs, incorporating forecasted financial information as per the BPDTs.
- Immediate transition to CPIH from 1st April 2023 for WACC allowance and RAV calculations.
- Opening RAV to be based on totex forecasts for RIIO-ED1 as provided in the BPDT submission, and inclusive of any known logged up adjustments (for instance the effect of site disposals).
- Lagged revenue impacts arising from RIIO-ED1, where these are expected, should be included if relevant (e.g. such as MOD from related RIIO-ED1 revenues, legacy revenue adjustments, forecasts on other non-base revenue items).
- Depreciation rates to be proposed by the licensee based on useful economic lives and/or evidenced justification.
- Capitalisation rates to be proposed by the licensee based on operational practice to date, consideration of expected levels of opex and capex, balance of affordability, financeability and customer support.
- Dividend and equity issuance to reflect actual company dividend policy and forecast equity issuance, as set out in finance tables of the BPDTs.
- Equity issuance transaction costs as forecast by licensee for forecast equity issuance.

Appendix 6 - Summary of outputs and incentives

Output name	Output type
Deliver high quality customer service	
Customer Satisfaction Survey	Financial Output Delivery Incentive (ODI-F)
Complaints Metric	ODI-F
Provide a quality service for consumers seeking a connection	
Time to Connect	ODI-F
Improving Service Standards for Major Connection Customers	ODI-F
Connections Guaranteed Standards of Performance	Licence obligation (LO)
Support consumers in vulnerable situations	
Obligation to treat customers fairly, including those in vulnerable situations	LO
Improving Service Standards for Vulnerable Customers	ODI-F
Maintain world class levels of reliability	
Interruptions Incentive Scheme	ODI-F
Guaranteed Standards of Performance	LO
Worst Served Customers	Price Control Deliverable (PCD)
Ensure long term safety and resilience	
Network Asset Risk Metric	PCD, ODI-F
Cyber Resilience IT	PCD, LO
Cyber Resilience OT	PCD, LO
Environmental Resilience	LO
Deliver an environmentally sustainable network	
Environmental framework, including Environmental Action Plans, Annual Environmental Report and Environmental Scorecard	LO, Reputational Output Delivery Incentive (ODI-R) and ODI-F
A smart, flexible energy system	
Digitalisation Strategy & Action Plan (DSAP) and Data Best Practice	LOs
DSO strategy delivery incentive	ODI-F

Note: this is an edited version of the Table 1 taken from [RIIO-ED2 Methodology Decision: Annex 1 - Delivering value for money services for consumers](#), listing only RIIO-ED2 outputs. Please refer to that document for a full description of output and incentive arrangements