

# Guidance

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## ESO Business Plan: IT Investment Plan Guidance Document

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As part of the RIIO-2 price control, the Electricity System Operator (ESO) will need to submit a Business Plan for its second business plan cycle, commencing on 1 April 2023. As part of this Business Plan, the ESO will need to submit information relating to its IT investments as a separate annex. This document provides updated guidance on the information that should be included on IT investments in the Business Plan and how the Authority will assure the IT Investment Plan.

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## Version history

Version	Changes	Purpose	Publication date	Go Live
1.0	n/a	To provide guidance on the ESO's IT investments, which are to be included as an annex to its second Business Plan for the period 1 April 2023 to 31 March 2025.	15 November 2021	15 December 2021

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## 1. Introduction

1.1. This chapter sets out the purpose of this document and its status from a compliance perspective.

1.2. The ESO has a central role in our energy system. It performs several important functions ranging from the real time operation of the system, through to market development, managing connections, and advising on network investment. The ESO's delivery of its Business Plan, across the spectrum of its roles, can unlock substantial benefits for consumers by helping to shape the best pathway to a Net Zero energy system.

1.3. A strong capability with IT (technology, knowledge and skills) is a major enabler for the ESO to be able to carry out its functions. Determining which IT investments the ESO makes as part of the business planning process is therefore important for unlocking benefits for consumers.

1.4. The ESO's five-year RIIO-2 price control contains a default two-year business plan cycle. The ESO's first business plan cycle ("BP1") runs from the 1 April 2021 to 31 March 2023. The ESO will publish a second Business Plan for the second business plan cycle ("BP2"), which will start on 1 April 2023.

1.5. In 2019, we set out guidance for electricity and gas network companies on the information that should be included in companies' RIIO-2 business plans.<sup>1</sup>

1.6. In September 2021, we published the ESO Business Plan Guidance,<sup>2</sup> which built on the previous RIIO-2 guidance issued. The ESO Business Plan Guidance provides the ESO with specific guidance on our expectations for the second Business Plan. In the ESO Business Plan Guidance, we stated we would provide further detailed guidance on the information we require from the ESO to assess its IT investments and that we would do this in 2021, before the ESO submits its draft Business Plan for BP2 in April 2022.

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<sup>1</sup> RIIO-2 Business Plans Guidance September 2019: <https://www.ofgem.gov.uk/publications/riio-2-business-plans-guidance-document>

<sup>2</sup> ESO Business Plan Guidance: <https://www.ofgem.gov.uk/publications/consultation-eso-business-plan-guidance>

1.7. This document (the “IT Investment Plan Guidance”) provides that additional guidance for the ESO on its BP2 IT investments. This document sets out additional governance and the process by which the ESO must submit information relating to its IT investments as part of its second Business Plan to the Gas and Electricity Markets Authority (“the Authority”) and the governance and process by which the Authority and the ESO Performance Panel (“the Performance Panel”) will assess the IT investments included in the second Business Plan.

1.8. This IT Investment Plan Guidance Document is issued by the Authority under Part B of Special Condition 4.3 (Electricity System Operator Reporting and Incentive Arrangements) of the ESO’s licence.

1.9. This document is to be treated as a part of the ESO Business Plan Guidance Document. It may be revised and reissued in accordance with Part B of Special Condition 4.3.

1.10. Before issuing new or amending the IT Investment Plan Guidance Document, the Authority will publish on the Authority’s Website:

- (a) the text of the proposed IT Investment Plan Guidance Document;
- (b) the date on which the Authority intends the IT Investment Plan Guidance Document to come into effect; and
- (c) a period during which representations may be made on the content of the IT Investment Plan Guidance Document, which will not be less than 28 days.

## **Compliance**

1.11. Where provisions of this document require the compliance of the licensee, the licensee must comply with those provisions as if this document were part of Special Condition 4.3.

1.12. For the avoidance of doubt, this document is subordinate to the licence. This document does not change any definitions or obligations contained within the licence and in the event of any ambiguity over the IT Investment Plan Guidance Document, the licence will take precedence.

1.13. The content of this document does not alter or supplement the ESO’s compliance with its wider obligations under legislation, its licence or industry codes.

### **The IT Investment Plan process**

1.14. We provided details on the BP2 process within our September 2021 update to the ESO Business Plan Guidance Document (see from paragraph 2.4<sup>3</sup>). We confirm that the process is unchanged by this publication.

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<sup>3</sup> ESO Business Plan Guidance: <https://www.ofgem.gov.uk/publications/consultation-eso-business-plan-guidance>

## 2. Objectives and assurance process

This chapter provides the objectives to be accomplished through the assurance of the ESO's IT investments included in its second Business Plan and describes how assurance will be gained.

### Objectives

2.1. IT investments comprise a large proportion of the ESO's Business Plan proposals over the RIIO-2 period. It is essential Ofgem is provided with sufficient information to conduct a rigorous assessment of these proposed IT investments for BP2.

2.2. Our principal aim is to ensure these IT investments will economically and efficiently enable delivery of the overall ESO Business Plan. In doing this, our specific aims include:

- (a) validating that the IT investments will deliver cohesive enterprise-level IT as a coordinated portfolio and where individual investments integrate into and rationalise ESO IT, such as avoiding duplication, gaps and gaining interoperability;
- (b) ensuring timetabling and prioritisation of investments takes full advantage of modern delivery best practices and so delivers effective risk management and value for money for consumers; and
- (c) ensuring IT investments will deliver the ESO Digitalisation Strategy & Action Plan (DSAP) and compliance with DSAP guidance and Data Best Practice guidance.<sup>4</sup>

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<sup>4</sup> Note that compliance requirements are subject to the outcome of our decision associated with the Consultation on Data Best Practice guidance and Digitalisation Strategy and Action Plan guidance: <https://www.ofgem.gov.uk/publications/consultation-data-best-practice-guidance-and-digitalisation-strategy-and-action-plan-guidance>



2.3. To ensure that the ESO's BP2 IT Investment Plan meet these objectives, we require the ESO's submission to comply with the Technology Business Management (TBM) taxonomy.<sup>5</sup> Please see Chapter 3 for further details on our rationale.

## Assurance process

### Ofgem review

2.4. Our review of planned ESO IT investments will take place as part of our Determination process for the ESO's second Business Plan.

2.5. For BP1, the assessment of the ESO's IT investments was undertaken using the Atkins review methodology.<sup>6</sup> For BP2, our review of IT investments involves:

- conducting an explorative review across all the IT investment information provided;
- selecting specific topics of particular importance for us to gain additional assurance;
- requesting additional and/or more detailed information about these selected topics;
- conducting detailed reviews of these selected topics and potentially discussing these with the ESO; and
- forming and publishing our views about the IT investments proposed.

2.6. For BP2, we plan to use Red Amber Green (RAG) ratings to illustrate our position regarding the IT investments proposed. To avoid any doubt, under the pass-through funding approach, the ESO may proceed with expenditure that it believes is necessary to achieve its Business Plan outcomes during BP2 and this expenditure will be subject to our value for

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<sup>5</sup> The TBM Council publish the TBM taxonomy. At the time of writing, version 4.0 is the latest version of the TBM taxonomy: <https://www.tbmcouncil.org/learn-tbm/tbm-taxonomy/>

<sup>6</sup> The Atkins methodology assessed each capex project against four criteria (project justification, definition, cost assurity and resource) and applied Red Amber Green assessment to these to identify the recommended level of costs. Please see Draft Determinations: ESO (Section 4) and Technical Annexes 2 (Draft Determinations - IT and Telecoms Assessment Annex (Atkins)):  
<https://www.ofgem.gov.uk/publications/riio-2-draft-determinations-transmission-gas-distribution-and-electricity-system-operator>

money assessment. As with all ESO expenditure, any demonstrably inefficient or wasteful IT expenditure may be disallowed.<sup>7</sup> Therefore, our RAG ratings will primarily inform our value for money assessment and whether expenditure on individual IT investments is included in the ESO's cost benchmarks.

2.7. The RAG ratings for ESO IT investments will be defined as follows:

#### Red

- A Red rating indicates significant concern that the ESO has provided insufficient and/or inadequate information to demonstrate that the IT investment achieves any of the following criteria:
  - the IT investment is required from an effective ESO;
  - the chosen IT Solutions are effective at achieving the specified business outcomes; and
  - the IT investment will be delivered at an efficient cost.
- The ESO will need to provide additional and/or higher quality information for these projects to be included in the cost benchmark.

#### Amber

- An Amber rating indicates that the ESO has provided sufficient information to demonstrate that the specified IT investment is required from an effective ESO.
- However, an Amber rating also indicates that we have concerns that the IT Solutions chosen are not effective at achieving the specified business outcomes or we are concerned that the investment will not be delivered at an efficient cost.

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<sup>7</sup> Please see paragraphs 4.44-4.56 of our Final Determinations – ESO Annex for further details on our disallowance policy for demonstrably inefficient or wasteful expenditure:  
<https://www.ofgem.gov.uk/publications/riio-2-final-determinations-transmission-and-gas-distribution-network-companies-and-electricity-system-operator>

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- The ESO will need to provide additional information for these projects to be included in the cost benchmark.

### Green

- A Green rating indicates that the ESO has provided sufficient and adequate information to demonstrate that the specified IT investment meets all the following criteria:
  - the specified IT investment is required from an effective ESO;
  - the IT Solutions planned are effective for achieving the specified business outcomes; and
  - the investment is planned to be delivered at an efficient cost.

2.8. We will group investments for classification both by ESO project and by using the layer and level of detail concepts used by the TBM taxonomy that the ESO must comply with when submitting information on its BP2 IT Investment Plan. Please see Chapter 3 for further details.

2.9. Should we identify investment gaps in the ESO plan, we will state these in our published position and the delivery (or not) of these investments throughout the BP2 period will similarly inform the ESO's incentive scheme performance assessment.

2.10. To aid the RAG assurance process, we will conduct both explorative and detailed reviews of the ESO's IT Investment Plan. The RAG assurance process will be based on the criteria provided in Table 1 below.

**Table 1: RAG assessment criteria**

Criteria	Definition
Business suitability	The effectiveness of the to-be state of the IT Solutions at enabling delivery of the ESO Business Plan. For example, where reasonable delivery options have not been considered and/or where IT Solutions or IT Towers are proposed to be invested in but are not required by business objectives.
Governance (control & accountability)	Whether ESO Business Architecture ensures investments can be corporately controlled throughout their lifecycle and that there are clear accountabilities for all aspects of investment.
Foundational capability	The ability of the underlying IT Towers (spanning people, process and technology) to be composed into IT Solutions that are used to deliver business outcomes.
Resilience & adaptability	The ability of the IT Towers and IT Solutions and Business Architecture to be refactored/re-organised/adapted to manage changes in market or governance conditions, while still providing the same services. For example, minimising risks to vendor lock-in and modularising services to minimise future costs of re-working these IT capabilities.
Cost & efficiency	The extent IT investments take advantage of opportunities for integration and rationalisation of IT Towers and IT Solutions. Examples of this are re-use of IT capabilities and the direct cost efficiency for delivering IT Towers or IT Solutions.
Transition delivery management & risk	The effectiveness of delivery practices, including the delivery of end-user benefits as early as possible, and the ability to identify and manage risks to delivery and methods of mitigation. For example, the appropriate application of methods such as agile working and waterfall delivery to maximise consumer outcomes and the quality of the implementation of these methods.
Engagement & transparency	Approach to ensuring stakeholder needs are met, such as with respect to how progress updates will be shared on the IT investments to be delivered and early sight of changes in the ESO’s Delivery Schedule submitted as part of the BP2 Business Plan.

2.11. Our assessment of each criterion will feature a blend of expert judgement, informed by engagement with the ESO at a technical level and validation against recognised standards that are appropriate to the domain of the investments proposed (e.g. the Government Digital

Service (GDS) Service Manual for the delivery methods of investments<sup>8</sup> and the Ofgem Data Best Practice Guidance<sup>9</sup> for the use of any data).

2.12. We will holistically assess the ESO's BP2 IT investments using all the above criteria to determine an overall RAG rating for each investment.

2.13. For our detailed review, we will select topics in advance which include, but are not limited to:

- gaps in IT Towers and/or IT Solutions that present a risk to delivery of the ESO Business Plan;
- any lack of clarity about how an IT Tower / IT Solution progresses the ESO Business Plan (and by extension, its DSAP);
- IT Towers / IT Solutions that are a common dependency (and therefore a common risk) to the delivery of multiple Business Plan and/or ESO DSAP outcomes;
- instances where investments appear to be missing opportunities to simplify ESO IT and/or enhance cost efficiency;
- IT investments being a large percentage of the overall planned expenditure, large in absolute terms or large considering investment has recently taken place; and
- indications that the ESO may not have sufficient controls in place to influence and direct the design and delivery of its own IT Towers / IT Solutions.

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<sup>8</sup> GDS Service Manual: <https://www.gov.uk/service-manual>

<sup>9</sup> Data Best Practice Guidance v0.3: <https://www.ofgem.gov.uk/publications/consultation-data-best-practice-guidance-and-digitalisation-strategy-and-action-plan-guidance>

### Cost and efficiency criterion assessment

2.14. As many of the BP2 IT investments will be at an early stage of development when the IT Investment Plan is submitted, the detailed review against the cost and efficiency criterion will focus on past work, taken from the BP1 period, which will serve as proxy for the delivery capability that we can expect from the ESO during BP2.

2.15. For our assurance of the cost and efficiency criterion, we plan to select one or more topics on which to carry out in depth analysis. For these topic areas, we will require the ESO to share granular detailed information (as detailed as, for example, data on individual tasks) to provide us with micro-level snapshots of how money is spent. This in-depth review will provide us with insight as to whether the ESO's methods for delivering IT represent value for money.

### **Ongoing assurance**

2.16. The Electricity System Operator Reporting and Incentives (ESORI) Guidance<sup>10</sup> sets out our processes for the ongoing assurance of the overall Business Plan. The IT investments included in the second Business Plan will be assured within the wider incentive framework. We will update the ESORI Guidance for BP2 by 31 March 2023, ahead of the start of BP2. The ESORI oversight process will take advantage of ongoing information updates relating to the information described in Chapter 3 of this document.

### **Shared services with National Grid Group**

2.17. For the avoidance of doubt, we will not be assessing shared costs again as part of our IT assessment process for BP2. However, we will require information regarding shared IT to be included as part of the information submission requirements described in Chapter 3.

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<sup>10</sup> Electricity System Operator Reporting and Incentives (ESORI) Guidance 2021-23:  
<https://www.ofgem.gov.uk/publications/decisions-eso-guidance-documents-2021-23>

### 3. Submission requirements

This chapter outlines our expectations on the contents of the IT Investment Plan annex of the ESO's Business Plan. The requirements are centred around use of the Technology Business Management taxonomy and an associated data model to allow for efficient analysis of that information.

#### Overview

3.1. In Chapter 3 of the ESO Business Plan Guidance,<sup>11</sup> we stated we would provide further detailed guidance on the information we require from the ESO to assess its IT investments. This chapter provides that detail. Examples and contextual information to help explain the requirements described in this section can be found in the appendices.

3.2. The BP2 IT Investment Plan should not include any information which was already submitted to Ofgem as part of the BP1 submission and has not materially changed - such as the "Case for Change" for individual projects included in 'Annex 4 – Technology Investment Report' for BP1.

3.3. The requirements detailed in this chapter do not affect nor are dependent on any of our other requirements relating to the ESO Business Plan.

3.4. For the avoidance of doubt, this submission is separate from the Business Plan Data Template (BPDT) submission requirements set out in Chapter 3 of the ESO Business Plan Guidance. Costs submitted with respect to the IT Investment Plan Guidance requirements must reconcile with the equivalent cost values included in the ESO submission of the BPDT.

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<sup>11</sup> ESO Business Plan Guidance: <https://www.ofgem.gov.uk/publications/consultation-eso-business-plan-guidance>

## Information requirements

3.5. We require access to quality information regarding the ESO's planned BP2 IT investments to ensure that our analysis of this information allows for robust decision making and assurance. Access to the right information will provide transparency about the current ("as-is") and future ("to-be") states of the ESO's IT, as well as the specific means by which the as-is state will be evolved and adapted into the planned to-be state.

3.6. Our requirements are predominantly information we consider a modern, effective and efficient organisation to be creating as part of its regular business planning and operations. Therefore, we do not consider the information we require from the ESO to be additional to what it already needs to create to carry out its normal efficient activities.

3.7. The information the ESO must provide will enable us to gain insights such as knowledge about foundational IT Towers; how these are / will be combined to create IT Solutions; how these IT Solutions are consumed to deliver business plan outcomes; costs associated with IT; and ultimately how IT investments will enable delivery of the ESO Business Plan.

3.8. Additionally, the information must also enable us to gain confidence that the ESO is able to effectively govern, control and use its IT both during the BP2 period and throughout the lifecycle of IT assets and their associated services, including in the face of potential changes to the ESO's operating environment and/or governing frameworks within which its services are provided.

3.9. Information must be provided in a format that enables efficient explorative analysis of the ESO's existing IT and planned IT investments, such that we are able to undertake the necessary analysis to meet our objectives described in paragraph 2.2 and to aid any engagement required between Ofgem and the ESO.



## Submission requirements

3.10. We require the ESO to adhere to the Technology Business Management (TBM) taxonomy<sup>12</sup> when describing its IT. The information submitted regarding the TBM taxonomy must include a TBM data model that includes the necessary data that describes how the elements in each of the four layers of the TBM taxonomy relate to each other.

3.11. The full list of artefacts that we expect the ESO to submit in its BP2 IT Investment Plan are listed in Table 2 below.

**Table 2: List of artefacts for BP2 IT Investment Plan submission**

Artefact name	Artefact description
Data model	<p>A TBM taxonomy-compliant description of the as-is and to-be states of ESO IT in the form of a data model to at least “level 4” detail.<sup>13</sup></p> <p>In addition to compliance with the TBM taxonomy, the data model must include an additional layer that lists the ESO IT investment projects. This ‘Projects’ layer must include fields of data about the ESO confidence score equivalent to its BP1 information.<sup>14</sup></p> <p>Information must also be included that relates content from each layer of the TBM taxonomy to other layers and the additional project information layer.</p>
Roadmap	<p>Timeline information that describes a BP2 forecast of new and/or improved products/services that will be enabled following ESO IT investments (i.e. the products/services encompassed within the “Business Units” and “Customers &amp; Partners” parts of the TBM taxonomy Business layer).</p>

<sup>12</sup> The TBM Council publish the TBM taxonomy. At the time of writing, version 4.0 is the latest version of the TBM taxonomy: <https://www.tbmcouncil.org/learn-tbm/tbm-taxonomy/>

<sup>13</sup> The TBM taxonomy provides definitions for the first three levels of detail. The 4<sup>th</sup> level (called “offerings”) is defined by the organisation complying with the taxonomy. For the Business layer, the TBM council only provide 2 levels of detail. In this case, the ESO minimum requirement for the explorative review is to provide “level 3” detail (which may be labelled “level 4” for consistency).

<sup>14</sup> The ESO submitted information on its confidence in the costs of its IT investment projects in response to the BP1 Supplementary Question ‘CA\_14’, submitted 24 April 2020.

	<p>The roadmap information must be consistent with the TBM taxonomy-compliant data model information.</p> <p>Where appropriate, the ESO may wish to include information prior to and following the BP2 period.</p> <p>The roadmap must enable the ability to view delivery from a portfolio perspective and for individual projects.</p>
<p>Supporting narrative</p>	<p>A document containing supporting information that contextualises the BP2 IT Investment Plan. At a minimum, this must include:</p> <p><b>Information about each project:</b></p> <ul style="list-style-type: none"> <li>• brief project purpose and role within the overall Business Plan;</li> <li>• primary focus (i.e. list of TBM elements affected); and</li> <li>• brief commentary explaining relationship to those TBM elements.</li> </ul> <p>This information must enable comparison on a consistent basis with the BP1 IT Investment submission to Ofgem.</p> <p><b>IT capability information (i.e. IT Solutions, IT Towers and Business Architecture):</b></p> <ul style="list-style-type: none"> <li>• an overview of ESO Business Architecture to be applied during BP2; and</li> <li>• brief summary describing improvements to be made to IT capabilities.</li> </ul> <p><b>Risk information:</b></p> <ul style="list-style-type: none"> <li>• portfolio-level key risks to delivery / integrity of TBM Taxonomy “Business Units”, “Customers &amp; Partners” and “Business Architecture”;</li> <li>• origin of risks, in terms of IT Solutions and IT Tower information;</li> <li>• mitigations to be in place to reduce risk; and</li> <li>• quantified assessment of the gross and mitigated risks.</li> </ul> <p>Where dependencies exist between elements of IT, this must be consistently reported using the relationships data as part of the data model.</p> <p><b>Delivery options information:</b></p>

	<ul style="list-style-type: none"> <li>• brief overview of investment approach options considered for key IT Solutions and IT Towers decisions, stating the preferred approach; and</li> <li>• brief explanation of the pros and cons of each approach considered.</li> </ul> <p>Delivery options are to be about how to deliver, not whether to deliver. The case for whether to deliver is to be included in the overall Business Plan.</p> <p><b>Transparency and engagement approach:</b></p> <ul style="list-style-type: none"> <li>• outline of the process the ESO proposes to adopt to provide timely updates to Ofgem on material deviations between its forecast IT Investment Plan and actual delivery of its IT investments during BP2.</li> </ul>
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3.12. The ESO IT Investment Plan must set out the state of its IT as it is forecasted to be at the start of BP2 (as at the start of 1 April 2023), taking into account forecast investment progress to be made over the remainder of BP1.

3.13. The IT Investment Plan must also set out the state of its IT as it is forecasted to be at the end of BP2 (specifically as at the start of 1 April 2025), taking into account forecast investment progress to be over BP2.

3.14. For each of the above IT states described in paragraphs 3.12 and 3.13 (i.e. the “as-is” state as at the start of BP2 and the “to-be” state as at the end of BP2), the principal requirements for the information submitted are that it is:

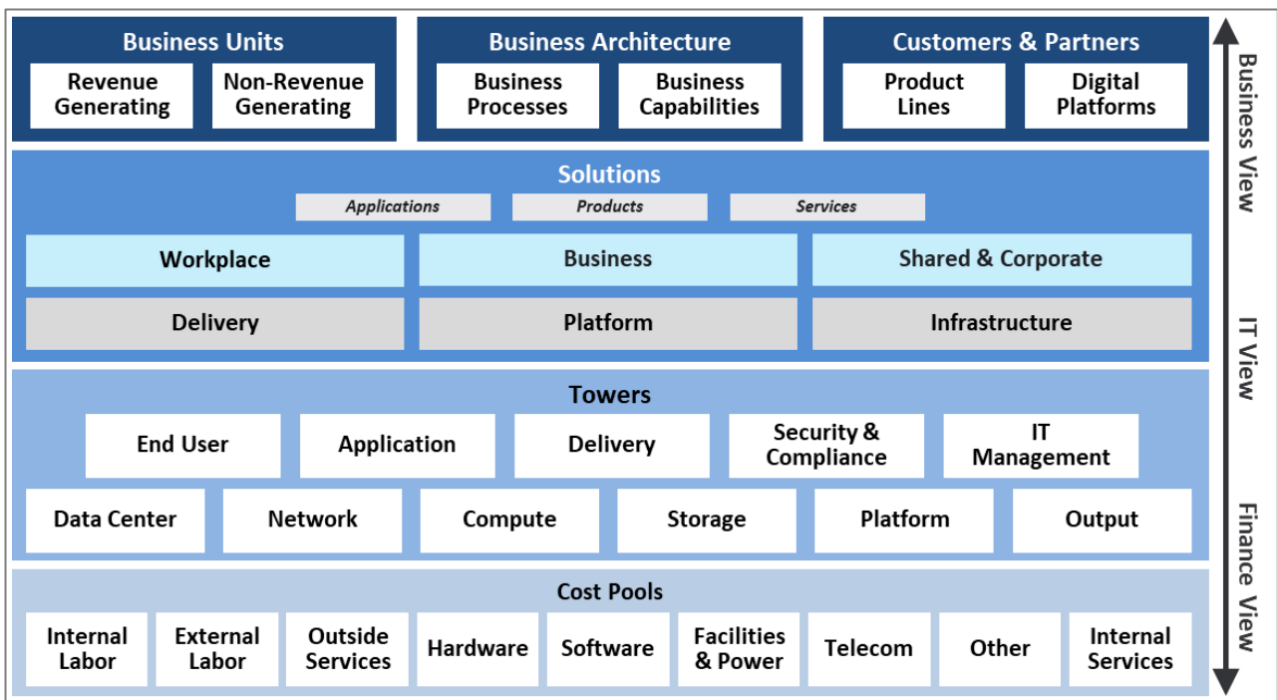
- comprehensive – IT costs, IT Towers, IT Solutions and IT business consumption and governance are described for all parts of the ESO, regardless of whether these are provided by the ESO directly, as a shared service provided by National Grid Group, or by a third-party;
- informative – they should contain clear but concise information about ESO IT, including a greater level of detail with respect to topics that the ESO anticipates might meet any of the criteria described in paragraph 2.10 of this document; and
- recognisable – the method for describing IT and the associated technical format of this information must conform to recognised methods for information exchange (i.e. the semantic descriptions must use a widely accepted taxonomy and the information must comply with widely accepted data formats that are machine-readable and lend themselves to human-led analysis).

### The TBM taxonomy

3.15. The TBM taxonomy provides a structured approach to explaining investments from three different “views” (Business, IT and Finance). The TBM taxonomy accomplishes this using four “layers” (Business, IT Solutions, IT Towers and Cost Pools), with the IT Solutions and IT Towers layers together forming the IT view. This creates visibility on portfolio-wide investment plans, while also allowing these to be translated between different perspectives and therefore related directly to the ESO Business Plan as a whole.

3.16. The TBM taxonomy also uses the concept of branching “levels” of detail about the topics it describes for each of its layers of information. This allows Business, IT and Finance views to be provided at different degrees of summarisation or detail, tailored to context. Levels 1 and 2 of the TBM taxonomy are displayed in Figure 1.

Figure 1: The TBM taxonomy<sup>15</sup>



<sup>15</sup> Image taken from TBM taxonomy version 4.0. This image summarises the concepts included in the TBM taxonomy. This includes the Business, IT and Finance views shown on the right-hand side and the Business, Solutions, Towers and Cost Pools layers in the horizontal rows. Two levels of detail are shown, which are the inset boxes within each layer (level 1) and boxes inset within those (level 2). For more details, please see: <https://www.tbmcouncil.org/learn-tbm/tbm-taxonomy/>

3.17. The TBM Council require that compliant use of the TBM taxonomy strictly adheres to using the language of its taxonomy's first three levels of detail and they provide definitions of terms. This allows for easy understanding of information in terms that are recognisable across organisations.

3.18. The language used to describe IT at the 4<sup>th</sup> level of detail or beyond is not prescribed by the TBM Council; they recommend that organisations determine for themselves what definitions to use. We require the ESO to provide at least level 4 detail when submitting TBM taxonomy-compliant information for its BP2 IT investments. We recommend the ESO uses terminology it prefers for level four detail and beyond, however we do require that all information at level four and beyond is related to level three details of the TBM taxonomy concepts, allowing for complete reconciliation of ESO IT with the whole TBM taxonomy.

3.19. When we conduct detailed reviews on selected topics, the ESO should anticipate that we will be requiring information of detail beyond level 4 for our assurance activities.

3.20. To help enhance stakeholder understanding of our information submission requirements, we have provided detailed explanations and examples in the appendices. The content of the appendices is intended to provide greater insight about what we require from this information submission; they are not intended to be used as templates for the submission.

3.21. Below, we provide context about the kinds of information we expect to be included in a TBM taxonomy-compliant submission and from an associated TBM data model.

#### The Business layer/view

3.22. This layer describes how the organisation consumes IT and manages its overall governance; it also provides information required to describe how IT operates in service of the business needs of an organisation. There are three parts to the Business layer:

- Business Units: the ESO must make it explicitly clear which business functions consume IT and provide information about what those consumption needs are;
- Business Architecture: the ESO must provide the overarching and fundamental way it does or will gain its capacity to use IT to drive business outcomes. For "Business Capabilities" this includes information like its overarching IT service model, its applications and key information about its Business Architecture practices. For

“Business Processes” this means information that at least includes its IT governance model, IT management structure and its IT delivery model;

- Customers and Partners: the ESO must make it explicitly clear how external stakeholders can or will be able to consume its IT and provide information about what those consumption needs are. This information must be directly reconcilable with the products and services described by the ESO DSAP.

#### The Solutions layer and the IT Towers layer (i.e. the IT view)

3.23. The IT Solutions layer describes the composite capabilities that the ESO has created or will create, by joining and integrating the individual components provided by the IT Towers (i.e. by its IT resources). The elements of the IT Towers are well described as the building blocks that can be copied, organised and integrated to form more sophisticated composite solutions.

3.24. In the case of the ESO IT investments submission, the IT view information comprises the most substantial information difference between the information that was submitted for the BP1 IT investments submission and our requirements for BP2. As the importance of data and digitalisation grows, we are increasing the degree of scrutiny we place on regulated IT investments that deliver these types of capability.

3.25. For the BP2 IT Investment Plan submission we anticipate that the more detailed reviews we will conduct to assure the ESO IT Investment Plan will strongly take advantage of the IT view that information compliant with the TBM taxonomy provides.

3.26. It is principally from the perspective of the Business layer that we require the ESO to provide insight about the risks to its delivery of IT capabilities for consumption by its business needs. However, we expect that explanations about these risks will involve relating the risks to information in terms of the IT Tower and IT Solutions.

The Cost Pools layer / Finance view

3.27. The TBM taxonomy takes advantage of recognised accounting practices to provide a body of cost information that can be integrated to describe an organisation's efforts for gaining its IT capabilities. The cost incurred to create IT capability is an important factor to our assurance of the ESO's IT investments. Understanding the ESO's proposed costs offers the opportunity for direct cost efficiency assurance, but this information can also be applied as a useful indicator for other assurance criteria. If we observe unexpectedly large spend requests on certain investments from the ESO, these can be explained by a number of different reasons, each of which will lead to insight and ultimately allow Ofgem and the ESO to improve the performance of the ESO IT capability.

3.28. For example, particular learnings may be that the ESO's costs are greater than efficient costs not simply because their direct implementation of an IT Tower / IT Solution is inefficient, but that their preferred solution is ineffective compared to the latest methods available. This insight about the appropriateness of solutions might similarly be gained in cases where the ESO's costs are much lower than would be expected. Equivalently, where costs are unexpectedly high/low these may indicate instances where our understanding of the ESO's needs for it to carry out its responsibilities are mismatched with the ESO's understanding. Engagement on these kinds of differences in expectations will allow for all parties to have better knowledge about the IT needs of an efficient, modern system operator and so inform effective decision making.

## Appendices

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## **Appendix 1: Further characterisation of BP2 requirements**

### **BP1 project case study**

1.1. Appendix 1 provides a case study describing the information supplied for an IT project in the ESO's first Business Plan and the information that must be supplied in the ESO's second Business Plan. The purpose of this is to aid clarity about information submission requirements.

1.2. Project 150 (Operational awareness and decision support) was submitted as part of 'Annex 4 – Technology Investment Report' for the BP1 period. The commentary provided below describes what content changes would be necessary if this IT investment was being submitted as part of the ESO's second Business Plan, compliant with the requirements in this guidance.

1.3. The sub-headings used below directly map to the sub-headings the ESO used in their BP1 submission. We have included one additional sub-heading to describe topics which the ESO did not provide information for in their BP1 submission, but which is required for BP2.

#### Overview

1.4. This section provided high level information about what the project is to accomplish in business language (i.e. in terms equivalent to the Business view of the TBM taxonomy). This is valued and must be included in the BP2 IT Investment Plan. However, the frame of reference for this overview information for BP2 must be described using the structure of the TBM taxonomy and not in terms of how the ESO has chosen to organise projects.

1.5. Aligning to the TBM taxonomy is easily achieved for Project 150 as it can be re-classifiable as a level 3 concept in the Business layer under level 1 (Type) and level 2 (Category) elements: "Business Units" and "Revenue Generating", respectively. This will differ for other projects, for example in the case of Project 220 (Data and analytics platform), which belongs in the IT Solutions layer.

#### Current state

1.6. This information uses language suitable to the Business view of the TBM taxonomy. It is helpful contextual information for providing details relating to the as-is state of the ESO's consumption of IT capabilities and is suited for inclusion in the ESO's supporting narrative.

### Case for change

1.7. This information is a benefits case for the business capability that is enabled through the IT investment being delivered. Information relating to the benefits case for change is valuable to the overall business planning process, but we require that the justification for business activities is part of the overall ESO Business Plan and not the IT Investment Plan annex. The primary purpose of the IT Investment Plan is to agree how business needs will be met, rather than if business needs are sufficiently important to warrant investment. The only caveat to this is where the cost of delivery is great enough that it materially negatively impacts the cost benefit analysis and so costs described in the IT Investment Plan outweigh the benefits.

### Roadmap

1.8. As stated in paragraph 3.11 of this document, roadmaps are required for the BP2 submission. We require that roadmap information is available for individual activities and a portfolio-level view.

1.9. Roadmaps must directly demonstrate when new/improved business activities that depend on consuming IT are forecast to be available, i.e. roadmap information is required in terms of when the ESO will provide business products and services (i.e. the language of the TBM taxonomy Business view).

1.10. The BP2 submission requirements include a TBM data model for the as-is and to-be state of ESO IT at the start and end of the BP2 period, and that the model will provide some limited additional timing information, including about when IT Solution and IT Tower improvements will be made. The ESO is welcome to provide more granular timing detail in the data model, but it is not a requirement.

1.11. Regarding the content within roadmaps, Project 150 described timing information for the concepts "Backlog prioritisation and management" and "Backlog delivery". These are concepts that are best described as being from the frame of reference of the people responsible for delivering a project. This is not the content that we require for BP2. For BP2, roadmaps must describe delivery from the perspective of internal and external stakeholders who need to use IT capabilities, rather than from the frame of reference of people delivering the project. We therefore require information, such as: when new types of services will become available, when old services will cease and when ongoing iterative and incremental improvements to services are expected to be released.

### Future state

1.12. Overall, our comments for this section are equivalent as for section “Current State”. Additionally, in this section the ESO described a dependency on Project 150 to another project, Project 220. For BP2 we require dependencies between activities to be described, not in terms of projects, but in terms of the TBM taxonomy. We have published an exemplar TBM Data Model Demonstration workbook alongside this guidance which demonstrates how this can be achieved, by including data tables that relate information between layers of the TBM taxonomy. In the Excel workbook we have named these sample sheets “translators” (in database terminology they are “fact tables”).

1.13. The TBM data model will give in-depth and specific insight about dependencies across the ESO IT. Therefore, it is not necessary to duplicate this in the supporting narrative unless it is particularly pertinent, such as to the description of risks.

### Approach

1.14. This section contains high-level information about how the ESO will deliver business solutions; it is best mapped to the TBM taxonomy layer “IT Solutions”. Commentary such as this has value and is required for inclusion in the BP2 submission. However, rather than providing information in terms of projects, we require commentary such as this to be provided in relation to IT Solutions. Short commentary such as this is suitable for inclusion as a field of text data in the TBM data model.

### Costs

1.15. Cost information is required for BP2. The use of the TBM data model will remove the need for detailed cost information to be included in the supporting narrative to the IT Investment Plan submission, but top-level cost summary information may be helpful for readability. We leave this to the ESO’s discretion.

1.16. As part of the BP1 submission, a Gartner benchmarking method was used by National Grid Group and the ESO. If the ESO chooses to include any such benchmarking information for BP2, we require that it is given in the context of the TBM taxonomy, rather than any other format. Also, if any such third-party benchmarking is used, we require that the methodology is described with greater clarity and specificity than was the case for BP1, as this did not enable us to benefit from improved confidence previously.

### Risks

1.17. Receiving ESO information on risk is important and risk information must be included as part of the BP2 submission.

1.18. The risk information provided for Project 150 was framed as risks to the project deliverability. For BP2, we require that risk reporting is described from the perspective of risks to the realisation of Business layer capabilities aligned with the TBM taxonomy. We expect that the detailed rationale about those risks is likely to involve information about IT Solutions and IT Tower concepts, also from the TBM taxonomy.

1.19. In principle, the inclusion of likelihood and impact scoring for BP1 was beneficial and information of this type must be included with the BP2 submission. However, definition of the measurement scales used, and the methodology used to determine those scores must be provided.

1.20. We require risk information across the portfolio of IT investments to be located in the supporting narrative. Where they are of high importance, the ESO may also wish to include data fields in the data model, so that specific risk information relating to IT Solutions and IT Towers where risks originate can be easily tracked during analysis.

### Options

1.21. Providing investment options is important and valuable information for the assurance of the IT Investment Plan. We require that the TBM data model submission is limited to only include the preferred options for investment and that investment options are included only in the supporting narrative.

1.22. For BP1, the options information described whether investment should take place from a business perspective. This is not the information required in the BP2 IT Investment Plan.

1.23. For BP2, options information in the IT Investment Plan must be concerned with the IT Solutions and IT Tower choices. Options information is not required to be submitted for all aspects of IT Solutions and IT Towers; the ESO must select aspects of these that it considers to be topics of particular importance for the assurance process. If our view of what is important differs to that of the ESO, we will raise requests to see options information as part of its review process.

1.24. Additionally, the BP1 options information did not seem to provide a balanced description of the pros and cons associated with options. Project 150 reflected how options were presented throughout: preferred options were described 100% by pros and rejected options were described 100% in terms of cons. For BP2, the ESO must provide a balanced discussion of any options information it provides.

#### Additional information

1.25. For BP2, if Project 150 were submitted, the additional information needed relates to the IT view of the TBM taxonomy (i.e. IT Towers and IT Solutions layers). Complying with the overall requirement for an information submission compliant with the TBM taxonomy will ensure this need is met.

1.26. Broadly, but not entirely, the BP1 submission did include the Business view and Finance views required by the TBM taxonomy (for the Finance view, when taking into account the additional information collected through the Supplementary Question process). However, the format of that information would not meet the requirements of the BP2 submission. For BP2, we require that information to be provided within a TBM taxonomy-compliant data model.

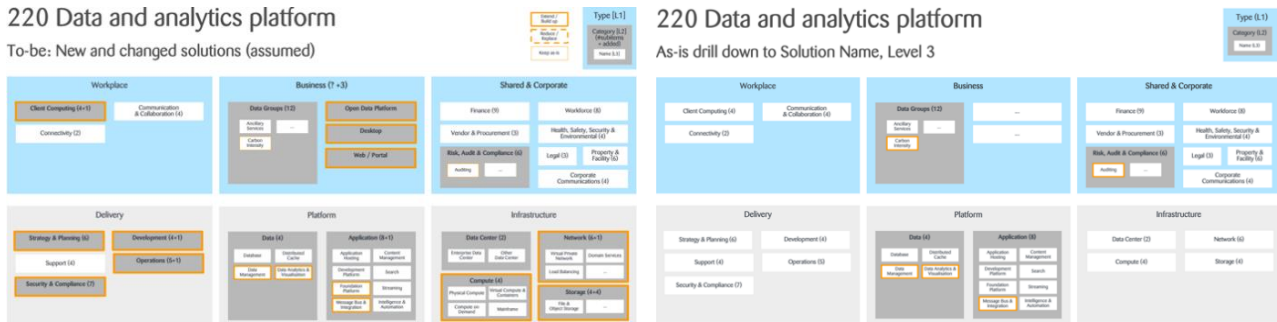
#### **BP2-compliant project example**

1.27. We have provided a project example to demonstrate how the TBM taxonomy and data-driven information management methods can be implemented in the BP2 IT Investment Plan, to provide a satisfactory submission in line with this guidance. For the avoidance of doubt, the artefacts listed below do not need to be strictly followed as templates.

1.28. The project we have used as an example is Project 220 (Data and analytics platform) from the BP1 submission. Selected artefacts from this project as part of the ESO's BP1 submission are given in Figure 2. These visualise Project 220 down to level 3 detail of the TBM taxonomy.

1.29. The ESO's previous approach of describing its investments, in terms of projects, can readily be made compliant with the TBM taxonomy. For BP2, the ESO will need to go further than this and provide additional detail (level 4) to fully enable our explorative assurance review.

**Figure 2: Visualisation of Project 220 to level 3 detail of the TBM taxonomy<sup>16</sup>**



1.30. A scalable approach to the ESO providing its IT investment information, compliant with the TBM taxonomy, is for the information to be submitted in the form of a TBM data model. This is a machine-readable equivalent to gaining the clarity that was gained through the exercise represented by Figure 2. The TBM data model also lends itself to resilience and flexibility as it can be tailored to include differing TBM taxonomy levels details.

1.31. The exemplar TBM Data Model Demonstration workbook published alongside this guidance demonstrates how such a data model can be created. It includes formats for the data submission and provides an indication of the analytical techniques that are enabled through the data formats it uses. Commentary within the file provides explanation and caveats for its content. This workbook is not to be treated as a template for the information submission; it is only a loose guide intended to convey the concepts that we require for our assurance. The actual analysis is anticipated to take place using a database solution, rather than using spreadsheet tools.

<sup>16</sup> (Left) description of to-be IT following delivery of Project 220 using TBM Taxonomy to level 3 for the IT Towers layer. (Right) description of as-is IT before delivery of Project 220 using TBM Taxonomy to level 3 for the IT Towers layer.

## Appendix 2: Glossary

**Business Architecture** – A formal definition is given by the TBM Council in its TBM taxonomy.

**Data model** – An abstract model that organises elements of data and standardises how they relate to one another and to the properties of real-world entities. In the context of this guidance, those elements of data are information about the ESO presented in compliance with the TBM taxonomy.

**Determination process** – Our 'Draft Determination' on the ESO's final BP2 Business Plan will be made by November 2022, following our review of the final BP2 Business Plan, the stakeholder responses received by the ESO and the Performance Panel's report on the draft Business Plan. In our Draft Determination, we will set out for consultation our proposals for our grading of the ESO's two-year Delivery Schedule; our value for money assessment and proposals for a two-year cost benchmark for the ESO; key performance measures for the ESO; and any other aspects of the ESO's price control which are being reviewed for BP2. Our Final Determination on the ESO's BP2 Business Plan will be published by March 2023 and will build on and finalise the decisions made in the Draft Determination. The Final Determination will consider all consultation responses received and the views of the Performance Panel.

**IT** – Information Technology.

**IT capabilities** – The blanket term for referring to all things that it is possible to be accomplished with respect to IT, this may differ from the things that those IT capabilities are currently being used to accomplish. In the context of the TBM taxonomy, IT capabilities are represented wholly by information about IT Tower layer, IT Solution layer and the "Business Architecture" (level 1 detail) of the Business layer.

**IT Solutions** – A formal definition is given by the TBM Council in its TBM taxonomy. These are compositions of IT Towers that have been integrated and configured to meet specific business requirements from IT.

**IT Towers** – A formal definition is given by the TBM Council in its TBM taxonomy. These are the individual resources (people, process and technology) available from which to construct

composite IT Solutions. IT resources is an approximately accurate synonym that is more widely used.

**IT Investment Plan**– The ESO’s BP2 submission of the TBM data model, roadmap information and supporting narrative artefacts as an annex to the ESO BP2 Business Plan.

**IT Investment Plan Guidance Document** – This document.

**Machine-readable** – This is a property attributable to data. For data to be machine-readable it must be in a format that can be processed by a computer. Machine-readable data must be structured data.

**Taxonomy** – A scheme of classification.

**TBM** – Technology Business Management. To promote alignment between IT, Finance, and Business Unit leaders, TBM provides a standard taxonomy to describe cost sources, technologies, IT resources (IT Towers), applications, and services.



## **Appendix 3: TBM Data Model Demonstration**

Please see the 'TBM Data Model Demonstration' workbook published alongside this guidance, which includes an example data model and approach to analysis.