

# Guidance

## RIIO-ET2 Investment Decision Pack Guidance

**Publication date:** 13/08/2019

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As part of their RIIO-2 Business Plan submissions, electricity transmission (ET) companies are required to provide Investment Decision Packs which outline the scope, costs and benefits for major projects or aggregated investment programmes. These packs provide both quantitative and qualitative assessments of the proposed investments and provide an insight into the investment decision-making processes and governance undertaken within each ET company. This document sets out what constitutes an Investment Decision Pack and where they should be submitted, as well as outlining key guidance for the Cost Benefit Analysis (CBA) template.

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## Executive Summary

As part of their RIIO-2 Business Plan submissions, network companies are required to provide Investment Decision Packs which outline the scope, costs and benefits for projects or aggregated investment programmes. These packs provide both quantitative and qualitative assessments of the proposed investments and provide an insight into the investment decision-making processes and governance undertaken within each company. This document sets out what constitutes an Investment Decision Pack and where they should be submitted, as well as outlining key guidance for the Cost Benefit Analysis (CBA) template.

The purpose of this guidance note is to ensure that (i) Explain the concept of Investment Decision Packs and the interaction between the Engineering Justification Paper and Cost Benefit Analysis (CBA) template (ii) TOs adopt a common CBA framework to facilitate cross-TO comparisons of asset investment plans, and (iii) employ a framework consistent with latest thinking on how to conduct CBA in a regulated context.

Ofgem is seeking to improve the visibility and transparency of the TO investment decision-making process and assess the justification and viability of these investments through an “investment decision pack”. An investment decision pack consists of an engineering justification document and a CBA template. The purpose and scope of each document is summarised below:

The Engineering Justification Paper outlines the problem that the investment seeks to solve and sets out the different options that have been considered. The purpose of the paper is to communicate the key factors that have influenced the investment decision and provide summary engineering detail on the options considered.

The CBA template is applicable to engineering project and network asset health investments. The template sets out a quantitative assessment of the main options under consideration and demonstrates the value that each of these options would bring, each option presented should be in absolute values. The template also includes qualitative summaries that allow the network companies to link proposed investments back to their engineering justification and stakeholder engagement. Our assessment will look to all three elements to substantiate viability and justification of investments in RIIO-2.

The principle of the investment decision packs is to provide a lens through which Ofgem can interrogate the investment decision-making processes and internal governance of the network companies, rather than providing documentation through which every individual investment in RIIO-2 will be assessed. We expect this approach to be part of the standard governance process in place for investment decisions for all TO's. However, we reserve the right to ask the companies to provide an investment decision pack for a specific investment at relatively short notice (i.e. 2-5 working days) after the July Business Plan submission.

We have been working with TOs throughout the development of RIIO-2 to improve and enhance our understanding and application of CBAs and to issue more specific guidance on undertaking cost-benefit analysis (CBA). This guidance note represents our latest thinking on the CBA framework for RIIO-ET2.

## 1. Where we expect an Investment Decision Pack submission

An Investment Decision pack will be prepared where a number of viable options are available, in line with the guidance issued for the engineering justification component. Ofgem expects to see investment decision packs for investments that are financially material and/or require significant scrutiny because of the risks associated with the investment. Ofgem will look to sample a number of these investment decisions as part of the Business Plan process, for example: financially material investments; investments of a potentially contentious nature; and, random audit sample on a range of investment types e.g. asset refurbishment programmes etc.

TOs may choose to prepare an Investment Decision pack at the following levels:

- Asset category/class
- Project level
- Programme of Works

At the asset category/class level it may be useful to group analysis where same/similar characteristics are displayed i.e. Programme of Works. Where projects within expenditure categories are homogenous in terms of the costs and benefits involved, we expect these projects to be considered as part of one Investment Decision pack. Schemes where costs and benefits are specific to the scheme or project being proposed may require consideration under a separate Investment Decision pack.

We expect there will be investment projects which require Investment Decision pack in order to support investment justification and demonstrate value for money. Companies must prepare Investment Decision pack to support these decisions.

## 2. Identification of options

Consistent with the HM Treasury Green Book<sup>1</sup>, TOs must clearly identify the range of options that were considered to meet the stated aim. This list should, where feasible, include an option that requires a minimal initial investment (the “do minimum option”) against which other options can be compared. Additionally, the option of delaying investment must be considered as part of the CBA. We consider the “baseline” scenario to be that which involves the minimum level of intervention that would be required to remain compliance with all relevant regulations. For each investment, the TO should clearly explain, in the supporting commentary boxes in the CBA, what assumption has been used and which regulations the minimum level of intervention relates to. There are no direct benefits (i.e. avoided costs) accrued under the baseline scenario and these cells have been blanked out in the CBA template. Societal benefits will still be accrued under the baseline scenario and these should be taken into account when calculating the baseline NPV. The NPV of each of the options identified within the CBA will be compared against the Baseline NPV, rather than against a zero value.

We have included a section in the CBA template for TOs to identify and clearly list the options they have considered for each investment decision.

This list of options to include those that have been considered and rejected before full costing, and the shortlist of those options that have been considered and costed, with a clear rationale for including/excluding them, which is to be summarised (i.e. a few lines or bullets) in the comment box.

Within the ‘Baseline’ and each ‘Option’ sheet in the CBA template, there are summary boxes for the Engineering Justification, Stakeholder Support and TO View. These summary boxes should provide executive summary style overviews that link back to the key points presented in the Engineering Justification Paper and Business Plan for their chosen option. They should provide enough information to outline the key arguments under each category and allow the evaluator to trace back to the relevant section(s) in the supporting documents (i.e. short paragraphs or bullet points summarising the key justification(s) for the proposed investment).

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<sup>1</sup> HM Treasury - The Green Book;  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/685903/The\\_Green\\_Book.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/685903/The_Green_Book.pdf)

### 3. Valuing the costs and benefits of options

The financial costs and benefits should correspond to the financial/market values set out in the TO's business plan (where applicable). For example, the expected reduction in any cost of repairs and maintenance (a financial benefit) arising from an investment should be consistent with the assumptions on unit repair and maintenance costs set out in the plan.

For each option, the expenditure should include both the capex and opex spends associated with this option in absolute terms. This allows a clear comparison of capex and opex trade-offs ensures the correct split is applied between capitalised and expensed expenditure in the RAV calculations in the CBA template.

The financial costs and benefits must be in 2018/19 prices, exclude real price effects (RPEs) and be net of expected productivity improvements, i.e. consistent with the data set out in the TO's Business Plan Data Template (BPDT). Where CBA outcomes are marginal, the TO should run sensitivities on productivity improvements beyond RIIO-ET2.

TOs must also include replacement costs for assets which may need to be replaced during the 45-year horizon. TOs should include assumed failure rates of assets and must set out their view and explain their assumptions.

## 4. Applying the Spackman approach to electricity transmission network investment

The Spackman approach involves the following two-step approach<sup>2</sup>:

- Convert capital costs into annual costs using the company's cost of capital.
- Use the Social Time Preference Rate (STPR) of 3.5% (less than & equal to 30 years); 3% (greater than 30 years) to discount all costs and benefits<sup>3</sup>, except safety where the Health Discount Rate (HDR)<sup>4</sup> of 1.5% (less than/equal to 30 years); 1.2857% (greater than 30 years) should be used.

The capital costs are to be converted to equivalent annual costs that are recovered through customers' bills. The CBA template assumes straight line depreciation in line with our RIIO-ET2 regulatory depreciation policies. The annual capital costs will also be calculated over the assumed economic life of the asset.

To convert capital costs into annual cost recovered through customers' bills, we require companies to use a pre-tax weighted average cost of capital (WACC) figure which is consistent with their own individual business plan submissions.

Costs and benefits should be extended to cover a 45-year period, from the start of investment, which represents the useful economic life of the asset and is consistent with asset life assumptions used in the RIIO-ET2 finance model. Due to future uncertainties, we have limited the CBA template to 45 years (from the final year of investment during the RIIO-ET2 period).

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<sup>2</sup> Joint Regulators Group (4 October 2011) Discounting for CBAs involving private investment but public benefit. para 3.10; [https://www.ofcom.org.uk/data/assets/pdf\\_file/0029/37856/jrg\\_statement.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0029/37856/jrg_statement.pdf)

<sup>3</sup> HM Treasury - The Green Book, Annex A6: Discounting, Table 9; [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/685903/The\\_Green\\_Book.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/685903/The_Green_Book.pdf)

<sup>4</sup> HM Treasury - The Green Book, Annex A6: Discounting, Table 10; [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/685903/The\\_Green\\_Book.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/685903/The_Green_Book.pdf)

## 5. Society benefits and the treatment of non-marketed goods

TOs should consider societal benefits (i.e. avoided costs) associated with each option. For consistency, we have standardised many of the assumptions and calculations for the valuation of societal benefits and non-marketed goods. We have entered default parameters in the CBA template for most of the non-marketed items; where TOs amend these assumptions full justification for the move from the default parameters should be provided.

Where expenditures are justified using the reduction of electricity lost, we have provided a standard value for £/MWh lost based on average wholesale electricity prices less the EU Emissions Trading Scheme (ETS) cost of carbon (which is factored into the wholesale price) over 2016/17.

For the benefits associated with preventing fatalities and injuries, we require TOs to draw on guidance set out in HM Treasury Green Book<sup>5</sup> and the HSE<sup>6</sup>.

In relation to carbon abatement values, we require TOs to use the BEIS traded (central) carbon values<sup>7</sup>.

There may be further non-marketed items where a fixed assumption or calculation methodology has not been provided in the CBA template. TOs can include these benefits in the rows provided but should clearly set out in the workings section of the template the assumptions and valuation methodology used.

TOs should also set out within the wider investment appraisal any non-marketed impacts or factors that cannot be monetised.

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<sup>5</sup> HM Treasury - The Green Book;  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/685903/The\\_Green\\_Book.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/685903/The_Green_Book.pdf)

<sup>6</sup> <http://www.hse.gov.uk/economics/eauappraisal.htm>

<sup>7</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/671191/Updated\\_short-term\\_traded\\_carbon\\_values\\_for\\_modelling\\_purposes.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/671191/Updated_short-term_traded_carbon_values_for_modelling_purposes.pdf)



## 6. Decision Rule

The purpose of the CBA template is to enable companies to demonstrate the proposals included in their business plans provide the optimum solution which demonstrates best value for customers.

We do not expect TOs to use CBAs mechanistically, i.e. including all schemes with positive NPV and excluding all those with negative NPV. Where a scheme has a marginally positive or negative NPV, the TOs should consider the inclusion/exclusion of such a scheme drawing on sensitivity analysis and the identification of any non-monetised benefits or costs. As an example, such non-monetised costs/benefits might include (non-monetised) engineering judgement on what constitutes an efficient project, as detailed in the required engineering justification paper or evidence of stakeholder support for one option over another. We require TOs to clearly set out such judgements as part of their investment decision pack, and have accordingly included in the CBA template a section for TOs to provide a brief synopsis of both engineering justification and stakeholder support.

It is the overall position determined across the following 3 distinct elements which will determine and substantiate the most appropriate solution: Engineering Justification paper; Stakeholder Engagement & Support; and, the quantitative analysis (i.e. CBA). This “Investment Decision Pack” will be assessed in its entirety by Ofgem to assess the viability and justification of any proposed investments within the TO’s well-justified Business Plan. Ofgem also intends to utilise this evidence as part of the ongoing monitoring and assessment of delivery throughout the Price Control period. Where there has been material divergence in the cost, timing or nature of the solution from that which was assessed and funded through the Business Plan process, we expect these changes to be subject to the same rigor and assessment that the original proposal was subjected to. We would therefore expect an updated “Investment Decision Pack”, with the baseline being the original solution, to be available to Ofgem upon request.

## 7. Uncertainty and sensitivity analysis

We expect TOs to undertake sensitivity analysis consistent with the HM Treasury Green Book guidance<sup>8</sup>.

- *"Sensitivity analysis is fundamental to appraisal. It is used to test the vulnerability of options to unavoidable future uncertainties. Spurious accuracy should be avoided, and it is essential to consider how conclusions may alter, given the likely range of values that key variables may take. Therefore, the need for sensitivity analysis should always be considered, and, in practice, dispensed with only in exceptional cases.*
- *The calculation of switching values shows by how much a variable would have to fall (if it is a benefit) or rise (if it is a cost) to make it not worth undertaking an option. This should be considered a crucial input into the decision as to whether a proposal should proceed. It therefore needs to be a prominent part of an appraisal."*

We expect TOs to consider sensitivity analysis with respect to key parameters, for example:

- Asset performance / health deterioration rates
- Ongoing efficiency assumptions
- Future demand growth
- Future scenarios
- Future utilisation of assets

In addition, included within the CBA template is a section for capturing risks associated with the chosen option. These risks should capture any material risk which may impact the cost and/or timing of the chosen investment. The risk impact should be quantified and the likelihood of occurrence estimated. The relevant controls and risk mitigation should also be captured within this section.

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<sup>8</sup> HM Treasury - The Green Book;  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/685903/The\\_Green\\_Book.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/685903/The_Green_Book.pdf)

## 8. Links to business plan

TOs must clearly show the links between their CBA and the business plan and business plan data tables. For example, the TOs should show how the workload and cost reductions underpinning the CBA and proposed asset investment plans feed through into the overall business plan proposals. We have included an area within the template for TOs to reference which BPDT/Regulatory Reporting Pack table the CBA would fall under.