

version number	use / purpose	date	changes made
Template CBA RIIO ED1 v1.xls	initial draft RIIO-GD1 model issued for demo purposes		-
Template CBA RIIO ED1 v2.xls	draft RIIO-ED1 model demonstrated during the CBA meeting held on the 19 March	19/03/2013	updated the model to reflect ED1 rather than GD1
Template CBA RIIO ED1 v3.xls	issued to DNOs to complete the 2 worked examples (leaking cable and QoS)	28/03/2013 03/04/2013	updated to reflect discussions at the CBA meeting including straight line depreciation assumption for ED1, addition of fixed parameter assumptions for non-monetary items re-issued on 3 April to correct CI/CML fixed data transpose error
Template CBA RIIO ED1 v4.xls	final version of CBA spreadsheet to take into account worked examples	16/04/2013 29/04/2013 10/01/2014 10/01/2014 10/01/2014	updated to reflect DNO feedback following completion of worked examples main changes include: - included baseline scenario worksheet - removed VOLL as CI/CML method of monetising loss of supply was viewed as robust method - amended the CO2 conversion factor associated with losses to take into account assumptions regarding future decarbonisation of electricity - updated fixed data parameters to 2012/13 prices removed 'do minimum' text in cell B9 of <i>Option summary</i> worksheet Inserted clarification comment in cell C9 of the <i>Option 1</i> worksheet. Clarified text in cell B1 of <i>Option summary</i> worksheet. Clarified text in cell F26 of <i>Option summary</i> worksheet.

Guidance for CBA spreadsheet model

Tab	Instructions
Option summary	Provide a description of the stated aim / investment decision contained within this CBA analysis workbook, along with a list of options considered to meet the aim. Also include here the short list of options contained within this workbook which have been fully costed and specify which option has been adopted following CBA and included in your business plan submission.
Fixed data	Enter pre-tax WACC and prices consistent with your business plan
Baseline scenario	Enter costs and benefits associated with the baseline scenario. The baseline scenario represents status quo; that is the cost of business as usual in the absence of any investment intervention. Where business as usual is not an option i.e. an investment intervention of some kind is required DNOs should chose the option with the lowest investment to represent the baseline scenario.
Working baseline	Show any calculation used to derive the values in your baseline scenario
Option 1	Enter costs and benefits <i>over and above the baseline scenario</i> i.e. the marginal or incremental costs / benefits of the option being considered. Enter capitalisation rates consistent with your business plan.
Working 1	Show any calculation used to derive the values in your CBA

Colour code:

User populated cells
Fixed data
Summation formula
Other formula

The user should populate the light blue cells. All other cells are either fixed or auto-populated.

Enter costs / benefits in 2012/13 prices (£m).

Costs should be entered as negative values.

Benefits (i.e. avoided costs) should be entered a positive values.

Costs entered should correspond to values set out in company business plans i.e. should exclude RPEs and include ongoing efficiencies consistent with assumptions contained in your business plan submission.

Copy *Option 1* worksheet & *workings 1* for each CBA option and label these *option 2* & *workings 2* etc.

Where a 'do minimum option' exists, Option 1 should represent your 'do minimum' or 'reference scenario' e.g. do nothing, ongoing maintenance of existing asset or the option which requires the minimum investment .

Use the relevant *Workings worksheet* to demonstrate any calculation/information that can support the costs and benefits you have entered for each option. This is free fill and provides you with an opportunity to show additional underlying data you believe will assist Ofgem in evaluating/understanding your CBA.

Please highlight your chosen option by colouring the worksheet tab yellow.

Purpose of CBA: describe the **primary driver** of the investment decision

To quantify loss savings between 185mm² and 300mm² Triplex for 11kV cables (from second leg of feeder downstream)

If investment is to replace an existing asset / asset class, please state the condition of the asset / asset class (HI / CI etc.)

List below all options considered to meet the stated aim

[illegible]

List below the short list of those options which have been costed within this CBA workbook

[illegible]

If more options are costed, please copy *Option 1* and *workings 1* worksheets and add detail to the short list table above.

Parameters

price WACC

Discount Rate = 10 years

Discount Rate = 10 years

Discount rate for safety

Assumed Asset Life (Years)

Prices

price WACC

Traded carbon price (US \$/tCO₂e)

Traded carbon price (US \$/tCO₂e)

Lowest LCOE (\$/MWh)

CO₂e per MWh (\$/MWh)

CH₄ (kg per MWh (\$/MWh))

Cost per MWh (\$/MWh)

Cost per MWh (\$/MWh)

Electricity GAO conversion factor (pennies per MWh)

2012-13 prices

2014

2015

2016

2017

2018

2019

2020

2021

2022

2023

2024

2025

2026

2027

2028

2029

2030

2031

2032

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2089

2090

2091

2092

2093

2094

2095

2096

2097

2098

2099

2100

WPI INDICES

Using equity averages (Aust & NZ only)

Index

2012-13 prices

2014

2015

2016

2017

2018

2019

2020

2021

2022

2023

2024

2025

2026

2027

2028

2029

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2031

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2100

Decarbonisation of electricity assumptions

Power sector emissions are projected to reduce to 10g/tWh by 2050

assume a linear decarbonisation pathway from 2020-50 and 2050

Power sector emissions reduce by 142 g/tWh p.a. between 2020 and 2050

Beyond 2050 keep emissions at 10g/tWh

g CO₂e per kWh

1,000 kg = 1 tonne

1,000 kWh = 1 MWh

1 kg = 1,000g

2020-10

2020-11

2021-12

2022-13

2023-14

2024-15

2025-16

2026-17

2027-18

2028-19

2029-30

2030-31

2031-32

2032-33

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2090-91

2091-92

2092-93

2093-94

2094-95

2095-96

2096-97

2097-98

2098-99

2099-00

2100-01

¹ Includes all GHG not associated with losses e.g. SF6 converted to iCO2e using Defra conversion factors
<https://www.defra.gov.uk/publications/2012/05/20/cb13772-2012-ghg-conversion/>

Where losses are entered in terms of MWh, the CO2e associated with those losses will be calculated based on an assumed GHG conversion factor. The iCO2e are monetised using DECC traded carbon values.

All other GHG emissions not associated with losses should be entered in row 90 to avoid double counting.

² <http://www.hse.gov.uk/risk/theory/dar/check.htm>