

Regulatory investment test for distribution

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1	23 August 2013	11
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3	21 November 2024	10

Nature and Authority

Introduction

This document sets out the Australian Energy Regulator's (AER) regulatory investment test for distribution (the RIT-D).

Authority

Clause 5.17.1(a) of the National Electricity Rules (NER) requires the AER to develop and publish the RIT-D in accordance with the distribution consultation procedures.

Purpose

The purpose of the RIT-D, as set out at cl. 5.17.1(b) of the NER, is to identify the credible option that maximises the present value of net economic benefit ~~to all those who produce, consume and transport electricity in the National Electricity Market (NEM)~~ (the preferred option). For the avoidance of doubt, a preferred option may, in the relevant circumstances, have a negative net economic benefit (that is, a net economic cost) where the identified need is for reliability corrective action.

Application

A RIT-D proponent must apply the RIT-D:

- a) to the proposed RIT-D projects as required by cl. 5.17.3 of the NER
- b) in accordance with the requirements relating to the credible option set out at cl. 5.15.2 of the NER
- c) as required by the procedures set out at cl. 5.17.4 of the NER
- d) to a level of analysis which is proportionate to the scale and likely impact of each credible option being implemented.¹

Definitions and interpretation

In the RIT-D,

- a) the words and phrases have the meaning given in:
 - i) the glossary or
 - ii) the NER.
- b) A reference to a paragraph is a reference to a paragraph in the RIT-D.

¹ The AER's final RIT-D application guidelines provide guidance on the operation and application of, and the process to be followed in applying, the RIT-D.

Process of revision

The AER may, from time to time, amend or replace the RIT-D and the RIT-D application guidelines (application guidelines) in accordance with the distribution consultation procedures.²

Version history and effective date

A version number and an effective date of issue will identify every version of the RIT-D.

² NER, cl. 5.17.2(e).

1 The regulatory investment test for distribution

1. The preferred option is the credible option that maximises the present value of the net economic benefit ~~to all those who produce, consume and transport electricity in the NEM.~~³

Where the identified need is for reliability corrective action, a preferred option may have a negative net economic benefit (that is, a net economic cost).

~~Net economic benefit equals the market benefits less costs.~~

1.1 Costs and benefits

1.1.1 Costs

2. Costs are the present value of the direct costs of a credible option. In determining costs, the RIT-D proponent must quantify the following classes of costs:
 - a) financial costs incurred in constructing or providing the credible option
 - b) operating and maintenance costs in respect of the operating life of the credible option
 - c) the costs of complying with laws, regulations and applicable administrative requirements regarding the construction and operation of the credible option and
 - d) any other financial costs the AER determines to be relevant. The AER will consider an additional class of financial cost relevant if the RIT-D proponent has determined it to be a required financial cost and we have agreed to it in writing before the RIT-D proponent makes its options screening report available to other parties. If the RIT-D proponent is not preparing an options screening report, we must make this agreement before the RIT-D proponent publishes the notice under cl. 5.17.4(d) of the NER.⁴
3. If the RIT-D proponent establishes that there is a material degree of uncertainty in the costs of a credible option, the RIT-D proponent should conduct a sensitivity analysis using the different cost assumptions and weight the sensitivities according to the RIT-D proponent's reasonable view as to their likelihood.

1.1.2 Market benefits

4. A RIT-D proponent must consider whether each credible option could deliver the classes of market benefits specified under cl. 5.17.1(c)(4) of the NER.
5. Where the identified need is not for reliability corrective action, the preferred option must have a positive net economic benefit. Under these circumstances, a RIT-D proponent must quantify all classes of market benefits where the RIT-D proponent considers that:
 - a) the applicable market benefits may be material; or

³ NER, cl. 5.17.1(b).

⁴ A RIT-D proponent is not required to separately quantify each class of cost.

- b) the quantification of market benefits may alter the selection of the preferred option.
6. A RIT-D proponent is required to rank the credible options according to net economic benefits.
- a) The market benefit of a credible option is calculated by:
 - i) comparing, for each relevant reasonable scenario:
 - a. the state of the world with the credible option in place, and
 - b. the state of the world in the base case, and
 - ii) weighting the present value of the benefits derived in sub-paragraph (i) by the probability of each relevant reasonable scenario occurring.⁵
7. Subject to paragraphs 8-10, market benefits includes the following:
- a) changes in voluntary load curtailment
 - b) changes in involuntary load shedding and customer interruptions caused by network outages, using a reasonable forecast of the value of electricity to customers
 - c) changes in costs for parties, other than the RIT-D proponent, due to differences in:
 - i) the timing of new plant
 - ii) capital costs
 - iii) the operating and maintenance costs.
 - d) differences in the timing of expenditure
 - e) changes in load transfer capacity and the capacity of embedded generators to take up load
 - f) any additional option value (where this value has not already been included in other classes of market benefits) gained or foregone from implementing the credible option with respect to the likely future investment needs of the NEM
 - g) changes in electrical energy losses
 - g)h) [changes in Australia's greenhouse gas emissions](#)
 - h)i) any other class of market benefit determined to be relevant by the AER. The AER will consider a class of market benefit relevant if the RIT-D proponent has determined it to be relevant to a required class of market benefit and we have agreed to it in writing before the RIT-D proponent makes its options screening report available to other parties. If the RIT-D proponent is not preparing an options screening report, we must make this agreement before the RIT-D proponent publishes the notice under cl. 5.17.4(d) of the NER.
8. With respect to paragraphs 6 and 7, where the credible option is for a reliability corrective action, a requirement to consider or quantify market benefits will only apply insofar as the

⁵ Where a RIT-D proponent does not reasonably consider one reasonable scenario is more likely than any other, it may weight all reasonable scenarios equally.

market benefit delivered by that credible option that exceeds the minimum standard required for reliability corrective action.

9. Market benefits must not:
 - a) include the transfer of surplus between consumers and producers
 - b) include the costs which meet the criteria in paragraph 2 or
 - c) include any benefits that have already been accounted for in other elements of the market benefits e.g. additional option value which has already been accounted for in other elements of the market benefits.
10. A RIT-D proponent may quantify each class of market benefit listed under paragraph 7 where the RIT-D proponent considers that:
 - a) any applicable market benefits may be material; or
 - b) the quantification of market benefits may alter the selection of the preferred option.

1.1.3 Further requirements for costs and benefits

11. Any cost or market benefit [\(except for the market benefit referred to in paragraph 7\(h\)\)](#) which RIT-D proponents cannot measure as a cost or market benefit to generators, distribution network service providers, RIT-D proponents and consumers of electricity cannot be included in any analysis under the RIT-D.
12. If a RIT-D proponent has received submissions on its options screening report and/or draft project assessment report (DPAR), it should have regard to these submissions, where relevant, in exercising judgement on whether a particular class of cost or market benefit applies to each credible option.

1.2 Methods for estimating market benefits and costs

1.2.1 Method for estimating the magnitude of market benefits

13. A RIT-D proponent should estimate the market benefits from a credible option as per paragraph 5, unless the RIT-D proponent can provide reasons why this methodology is not relevant in the DPAR.

A RIT-D proponent should estimate the market benefits of different credible options as per paragraph 5, unless the RIT-D proponent can provide reasons why the methodology is not relevant in the DPAR.

If a RIT-D proponent expects any benefits will occur outside the region in which its network is located, the method used for estimating market benefits under paragraph 5 must capture these benefits.

1.2.2 Method for estimating the magnitude of costs

14. A RIT-D proponent must estimate the magnitude of the costs in accordance with paragraphs 2 and 3. A RIT-D proponent may only quantify the direct costs of implementing the credible option. A RIT-D proponent must not double count costs.

1.3 Method and value for specific inputs

15. Clause 5.17.1(c)(9)(iii) of the NER requires the RIT-D to specify the appropriate method and value for specific inputs, where relevant, for determining the discount rate or rates to be applied.

1.3.1 The discount rate

16. The present value calculations must use a commercial discount rate appropriate for the analysis of a private enterprise investment in the electricity sector. The discount rate used must be consistent with the cash flows that the RIT-D proponent is discounting.
17. The lower boundary should be the regulated cost of capital.

1.4 Reasonable scenarios

18. A sensitivity analysis is required for modelling the cost-benefit analysis under the RIT-D. In order to run a sensitivity analysis, a RIT-D proponent will need to develop reasonable scenarios.
19. A reasonable scenario means a set of variables or parameters that are not expected to change across each of the credible options, and may include the following:
 - a) a reasonable forecast of electricity demand, reflecting assumptions regarding economic growth and climatic patterns⁶
 - b) efficient unit operating costs of existing, committed, anticipated and modelled projects including demand side and generation projects
 - c) avoidable unit costs of committed, anticipated and modelled projects, including demand side and generation projects
 - d) if applicable, the form of any market-based regulatory instrument that may be used to address greenhouse and environmental issues
 - e) the magnitude of a penalty (if any) for failing to meet an environmental target or other government-enforced requirement imposed on parties who produce, consume and transport electricity in the market. If such a penalty is not tax deductible, it should be grossed up to its value if it were deductible
 - f) reasonable forecasts of the value of electricity to consumers, including the value of consumer reliability
 - g) discount rate (the lower boundary should be the regulated cost of capital)
 - h) commissioning dates of committed projects and anticipated projects
 - i) inclusion or exclusion of particular anticipated projects based on their degree of likelihood of being commissioned within the modelling period.
20. The number and choice of reasonable scenarios must be appropriate to the considered credible options. The choice of reasonable scenarios must reflect any variables or parameters that are likely to affect the ranking of the credible options where:
 - a) the identified need is for reliability corrective action; or
 - b) for all other identified needs, the net economic benefits of any of the credible options are positive or negative.
21. State of the world means a reasonable and mutually consistent description of all the relevant demand and supply market characteristics and conditions that may affect the calculation of market benefits over the period of the assessment. This may include reasonable forecasts of:

⁶ The states of the world should reflect adjustments to demand forecasts or elasticities arising through demand-side options for those options rather than the reasonable scenarios.

- a) electricity demand modified where appropriate to take into account demand side options
- b) the sum of efficient operating costs of supplying energy to meet forecast demand from existing, committed, anticipated and modelled projects including demand side and generation projects
- c) the sum of avoidable unit costs of committed, anticipated and modelled projects including demand side and generation projects and whether all avoidable unit costs are completely or partially avoided or deferred
- d) the capital and operating costs of other network augmentations consistent with the forecast demand and generation scenarios
- e) the magnitude of a penalty (if any) for failing to meet an environmental target imposed on parties who produce, consume and transport electricity in the NEM, grossed up if not tax deductible to its value if it were deductible.

22. Committed project means a project where:

- a) the proponent has obtained all required planning consents, construction approvals and licenses, including completion and acceptance of any necessary environmental impact statement
- b) construction has either commenced or a commencement date has been set
- c) the proponent has purchased/settled/acquired land (or commenced legal proceedings to acquire land) for the purposes of construction
- d) contracts for supply and construction of the major components of the necessary plant and equipment have been finalised and executed, including any provisions for cancellation payments
- e) the necessary financing arrangements, including any debt plans, have been finalised and contracts executed.

23. Anticipated project means a project which:

- a) does not meet all of the criteria in paragraph 22 and
- b) is in the process of meeting at least three of the criteria in paragraph 22.

24. Modelled project means a hypothetical project derived from market development modelling in the presence or absence (as applicable) of the relevant credible option.

Glossary

Term	Definition
Anticipated project	Has the meaning set out in paragraph 23
Committed project	Has the meaning set out in paragraph 22
Cost	Has the meaning set out in paragraph 2
Market benefit	Has the meaning set out in paragraph 4
Modelled project	Has the meaning set out in paragraph 24
NER	The National Electricity Rules as defined in the National Electricity Law
Net economic benefit	<p>Has the meaning set out in paragraph 1 The sum of:</p> <ul style="list-style-type: none"> • the net economic benefit, other than of changes to Australia's greenhouse gas emissions, to all those who produce, consume or transport electricity in the NEM; and • the net economic benefit of changes to Australia's greenhouse gas emissions, whether or not that net benefit is to those who produce, consume or transport electricity in the NEM.
Reasonable scenarios	Has the meaning set out in paragraph 20
RIT-D	The regulatory investment test for distribution defined in the NER
State of the world	Has the meaning set out in paragraph 21