Final decision—Public

N.T. Gas

Access arrangement proposal for the Amadeus Gas Pipeline

1 August 2011 – 30 June 2016

July 2011

AUSTR
ENERG
REGUL

Contents

Final decision

In accordance with r. 62 of the National Gas Rules (NGR), the Australian Energy Regulator (AER) refuses to approve the revised access arrangement proposal for the Amadeus Gas Pipeline (AGP) submitted by NT Gas Pty Limited (NT Gas). The final decision sets out the AER's consideration of the revised access arrangement proposal and the revisions it has incorporated into the revised access arrangement proposal and revised access arrangement information. The AER has formulated the revisions with regard to the matters set out in r. 64(2) of the NGR.

AER's proposed access arrangement

The AER proposes revisions to the revised access arrangement proposal and revised access arrangement information as set out in the final decision. The AER has formulated its proposed access arrangement and access arrangement information with regard to the criteria set out in r. 64(2) of the NGR.

The AER must make a decision in respect of its proposed access arrangement and access arrangement information within two months of making this final decision. The AER expects to publish its access arrangement and access arrangement information for the AGP by 1 August 2011.

Shortened forms

Shortened form	Extended form
ACCC	The Australian Competition and Consumer Commission
access arrangement information	N.T. Gas Pty Limited, *Access arrangement information*, 23 December 2010
access arrangement period	1 August 2011 to 30 June 2016
access arrangement proposal	N.T. Gas Pty Limited, *Access arrangement*, 23 December 2010
access arrangement submission	N.T. Gas Pty Limited, *Access arrangement revision proposal–submission*, 23 December 2010
AER	Australian Energy Regulator
AGP	Amadeus Gas Pipeline
Code	National Third Party Access Code for Natural Gas Pipeline Systems
draft decision	AER, *Draft decision, N.T. Gas Pty Limited arrangement proposal for the Amadeus Gas Pipeline 1 July 2011 – 30 June 2016*, April 2011
earlier access arrangement	Access arrangement for 1 July 2001 to 30 June 2011 inclusive
earlier access arrangement period	1 July 2001 to 30 June 2011 inclusive
NGL	National Gas Law
NGR	National Gas Rules
revised access arrangement information	N.T. Gas Pty Limited, *Revised access arrangement information*, 27 May 2011
revised access arrangement proposal	N.T. Gas Pty Limited, *Revised access arrangement*, 27 May 2011
revised access arrangement submission	N.T. Gas Pty Limited, *Revised access arrangement revision proposal–submission*, 27 May 2011

Overview

Background

The AER is responsible for the economic regulation of covered natural gas distribution and transmission pipelines in all states and territories (except Western Australia). The AER's functions and powers are set out in the National Gas Law (NGL) and the National Gas Rules (NGR). The NGL and NGR came into effect on 1 July 2008. Prior to this, the National Third Party Access Code for Natural Gas Pipeline Systems (Code) provided the relevant regulatory framework for gas transmission and distribution pipelines.

On 23 December 2010, NT Gas Pty Limited (NT Gas) submitted an access arrangement proposal for the Amadeus Gas Pipeline (AGP) for the period 1 July 2011 to 30 June 2016. In accordance with the NGR, the AER published NT Gas's access arrangement proposal on 14 January 2011. Interested parties were invited to make submissions on the proposal and four submissions were received.

The AER published its draft decision on NT Gas's access arrangement proposal for the AGP on 21 April 2011. NT Gas submitted its revised access arrangement proposal to the AER on 27 May 2011. Interested parties were invited to make submissions on the draft decision and NT Gas's revised access arrangement by 24 June 2011. The AER received three submissions.

On 17 June 2011, APT Pipelines NT Pty Ltd (APTNT) acquired the AGP.[1] On 20 June 2011, APA Group confirmed that the transfer of ownership of the AGP from NT Gas to APTNT occurred on 17 June 2011.[2] APTNT now owns, operates and controls the AGP and therefore satisfies the meaning of *service provider* under the NGL.[3]

To maintain consistency with the AER's draft decision, NT Gas's access arrangement proposal, and NT Gas's revised access arrangement proposal, the final decision will refer to '*NT Gas*' and not '*APTNT*'.

Amadeus Gas Pipeline

The AGP is a transmission pipeline in the Northern Territory (NT) that transports natural gas predominantly from the Blacktip gas field in the Bonaparte Basin which enters the AGP at Ban Ban Springs. Until 2012, gas is also contracted to enter the pipeline from the Mereenie gas field at the southern end of the pipeline. AGP is approximately 1658 kilometres in length, stretching from Palm Valley and Mereenie to Darwin in the north (see figure 1). NT Gas has only one user, Power and Water Corporation (PWC), which primarily uses the gas for gas-fired electricity generation. The network is a natural monopoly and is regulated by the AER to ensure that NT Gas does not charge excessive prices or impose unduly onerous terms and conditions on users.

---

1 APA Group, Email to the AER–*Application to exempt APTNT from ring fencing obligation under section 140 of the NGL*, 27 May 2011.

2 NT Gas, Email to the AER, *AER.NTGAS.39-41 - Project Management costs*, 20 June 2011.

3 NGL, s. 8.

Figure 1: Map of Northern Territory pipeline network

Source: APA viewed 20 January 2011, http://www.apa.com.au/media/150046/nt.jpg.

This is the AER's final decision on the access arrangement for the AGP to apply over the period 1 August 2011 to 30 June 2016. NT Gas submitted a revised access arrangement proposal in response to the draft decision. The final decision addresses the issues raised in the revised access arrangement proposal, supplementary materials and stakeholder's views in accordance with the NGR and NGL.

In the draft decision, the AER considered that some expenditure increases were warranted so that NT Gas could continue to provide a safe and reliable service. However, the AER did not accept NT Gas's access arrangement proposal as the proposed tariffs were too high and the terms and conditions too much in favour of NT Gas. The AER required a number of amendments to NT Gas's access arrangement proposal, including reductions to proposed capital and operating expenditures, a lower rate of return, and revised terms and conditions.

In response, NT Gas did not accept certain aspects of the draft decision. NT Gas's proposed an increase in expenditure and prices compared to those proposed in the December 2010 access arrangement proposal. The increase in expenditure from that proposed by NT Gas in December 2010, is a result of revised capital expenditure (capex) forecasts, and updated real labour cost escalators.

The AER has accepted the need for higher expenditure in a number of areas where further substantiation of the prudence and efficiency of costs has been provided by NT Gas, such as project management costs. However, the AER does not approve NT Gas's revised access arrangement proposal because the proposed tariffs are again too high and the terms and conditions are also too much in its favour. The AER proposes to revise the tariffs and terms and conditions of access for the AGP. The AER considers its revisions will better balance the interests of NT Gas and potential users.

The key elements of the AER's final decision are set out below. More detail can be found in the relevant chapters of the final decision. The final decision should be read in conjunction with the draft decision, NT Gas's December 2010 access arrangement proposal, revised access arrangement proposal, submissions from interested stakeholders, and the AER's consultants' reports, which are available on the AER's website.

The AER will publish its access arrangement proposal and supporting access arrangement information, incorporating the revisions set out in the final decision, before 1 August 2011.

Tariffs

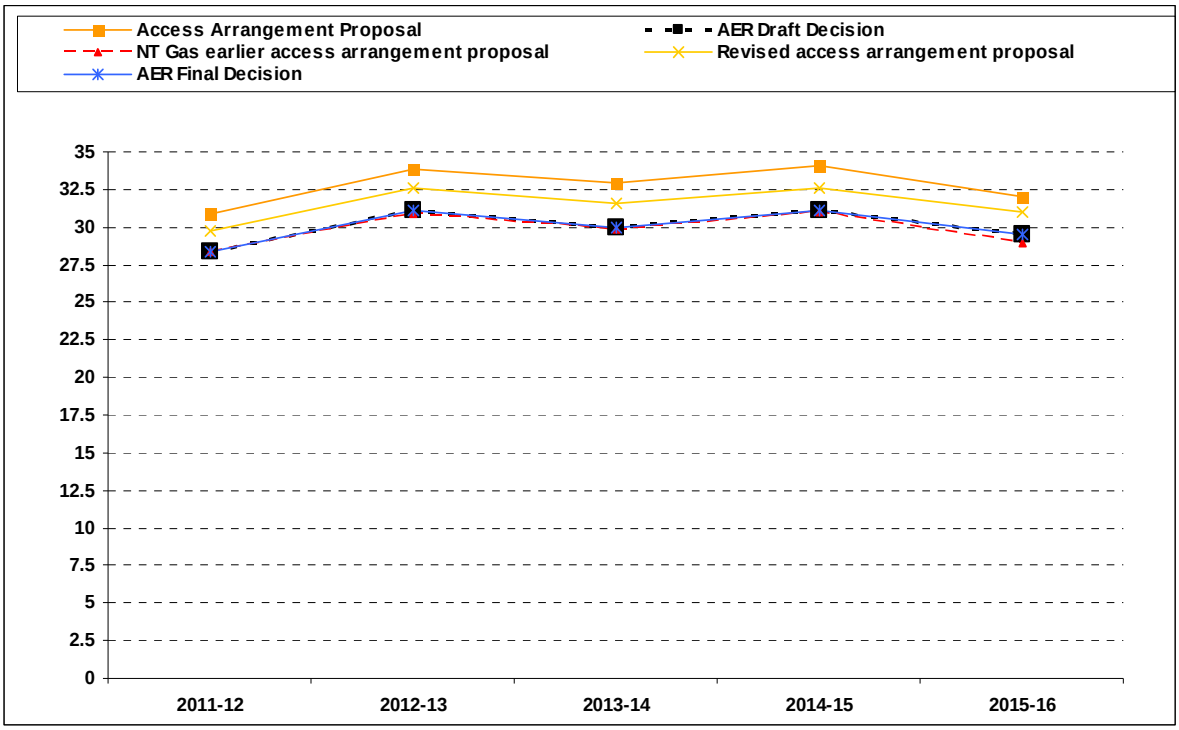
NT Gas proposed a single reference tariff structure, as approved by the AER in the draft decision. The AER has accepted a 2011–12 reference tariff for set at $0.6513 per gigajoule (GJ) of delivery point maximum daily quantity (MDQ), compared to $0.7605 proposed by NT Gas in its revised access arrangement proposal. The tariff is calculated based on the AER's forecasts of required replacement capex, the costs of capital and the cost of operating the AGP. In addition, the tariff reflects NT Gas's forecasts of demand on the pipeline over the access arrangement period. The final decision sets out the AER's considerations and forecasts of each of these cost components.

Cost of capital

The AER has calculated a cost of capital of 9.73 per cent, which differs from the 10.90 per cent proposed by NT Gas in its revised access arrangement proposal. The cost of capital in the earlier access arrangement period was 8.91 per cent. If the cost of capital had remained at 8.91 per cent for the access arrangement period, but all other factors changed as in this final decision, NT Gas's revenue requirement would have been 3.9 per cent lower than the revenue requirement allowed by the AER in this decision.

Figure 2 shows NT Gas's revenue in the access arrangement period under a number of cost of capital scenarios.

Figure 2: NT Gas's forecast revenue under different cost of capital scenarios units ($m, nominal)



Source: AER analysis.

The parameters used to calculate the cost of capital by NT Gas and the AER are set out in table 1.

Table 1: NT Gas's proposed and AER's allowed cost of capital parameters (units as stated)

Parameters	NT Gas revised access arrangement proposal	AER final decision
Nominal risk free rate (%)	5.54	5.53
Inflation forecast (%)	2.50	2.55
Cost of debt (%)	10.14	9.33
Debt risk premium (%)	4.6	3.8
Cost of equity (%)	12.04	10.33
Equity beta	1.00	0.80
Market risk premium (%)	6.50	6.00
Gearing (%)	60	60.00
Nominal cost of capital (%)	**10.90**	9.73

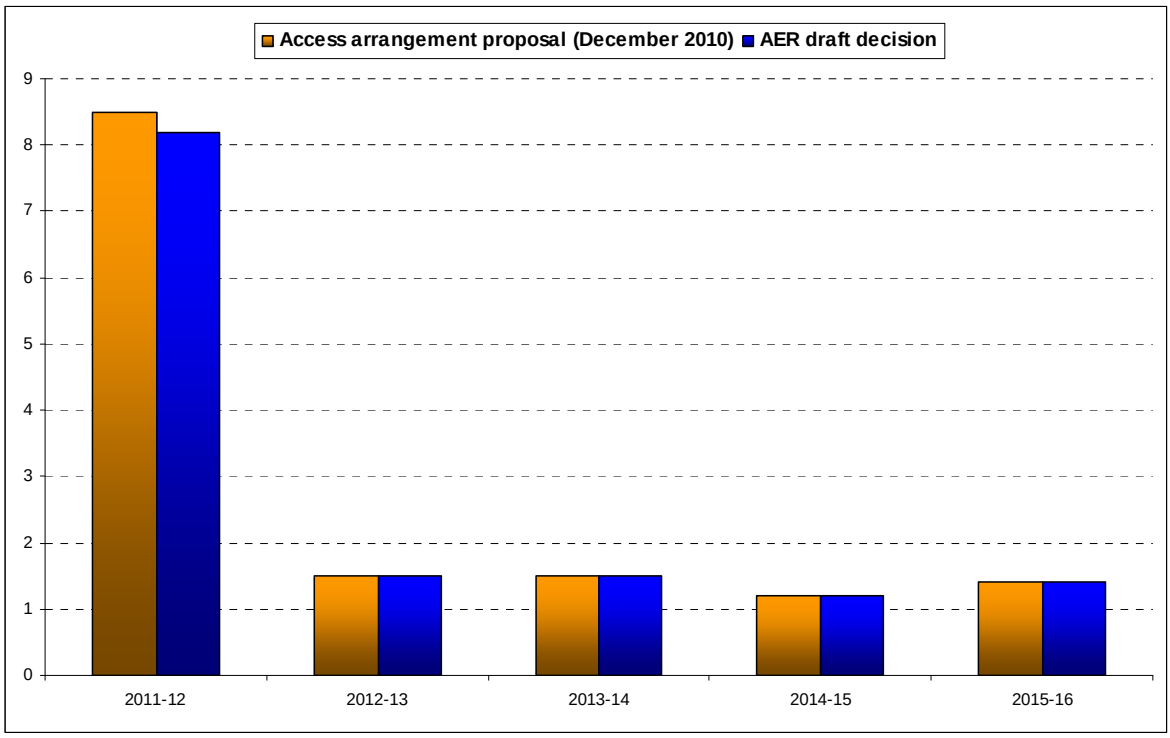
Source: NT Gas, *Revised access arrangement submission*, May 2011, p. 73, AER analysis.

The AER considers that the revised parameters proposed by NT Gas do not meet the requirements of the NGR. In addition, the AER does not consider NT Gas's proposed approach of calculating the cost of equity meets the requirements of the NGR.

Capital expenditure

In its draft decision, the AER accepted NT Gas's proposed forecast capex but made further adjustments to account for amendments to the real labour cost escalation and the removal of project management fees. As a result, the AER approved $13.9 million forecast capex for the access arrangement period. This was 3.5 per cent lower than NT Gas's proposed $14.4 million forecast capex for the access arrangement period.[4] Figure 3 shows NT Gas's forecast capex proposed in the December 2010 access arrangement proposal compared to the forecast capex approved in the draft decision.

Figure 3: NT Gas proposed forecast capital expenditure and AER draft decision ($m , real, 2010–11)



Source: NT Gas, *Revised access arrangement information*, May 2011, p. 10, AER, *Draft decision*, April 2011, p. 50.

Despite the capex program being largely accepted in the draft decision, NT Gas revised its forecast capex to $40.7 million. The increase in expenditure is 183 per cent higher than NT Gas's proposed $14.4 million in its December 2010 proposal.

Enhanced integrity program

The draft decision accepted NT Gas's enhanced integrity (capex) program. The AER maintains its view that NT Gas established the requirement to maintain the integrity and improve safety of services offered by the pipeline and to comply with regulatory obligations in accordance with the NGR. The draft decision accepted $12.8 million but made further adjustments to account for amendments to project management fees and real labour cost escalation. NT Gas, however, did not incorporate the draft

4 NT Gas, *Access arrangement submission*, December 2010, pp. 81,83, AER, *Draft decision*, April 2011, p. 50.

decision in its revised access arrangement proposal.[5] Instead NT Gas proposed $31.6 million in revised forecast capex for the enhanced integrity program.

The AER does not accept NT Gas's revised forecast capex on the enhanced integrity program as the amendments go further than necessary to address matters raised in the draft decision. Once the AER has made a draft decision, the service provider may submit additions or other amendments to its access arrangement proposal (r. 60(1) of the NGR). However, the NGR requires that amendments must be limited to those necessary to address matters raised in the access arrangement draft decision unless the AER approves further amendments (r. 60(2) of the NGR).

As a consequence, for the reasons set out in chapter 3, the AER maintains its view that expenditure on the enhanced integrity program is necessary for the maintenance of the AGP and as a consequence approves $17.8 million (2010–11) proposed by NT Gas in December 2010. The accepted capex forecast is higher than that approved by the AER in its draft decision and reflects the carryover of expenditure previously expected in 2010–11 and delayed until 2011–12. In total, the accepted forecast capex is 49 per cent less than that proposed by NT Gas in its revised access arrangement proposal.

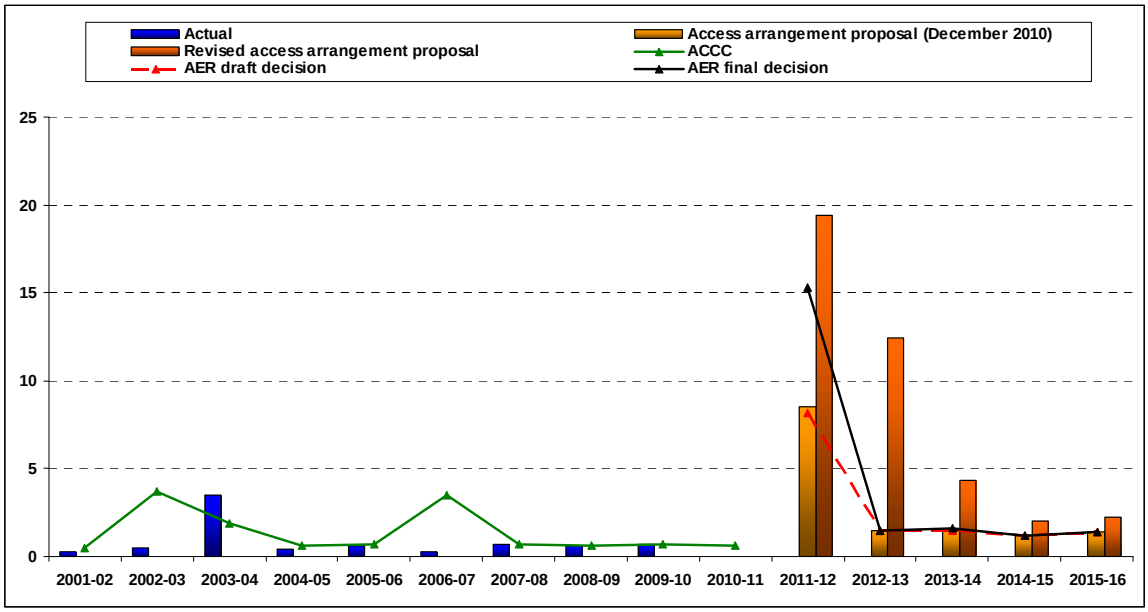
Other capex issues

NT Gas provided additional information in its revised access arrangement proposal in support of its real labour cost escalators and project management costs related to the enhanced integrity program that were not accepted by the AER in its draft decision. In the final decision, the AER does not accept NT Gas proposed real labour cost escalators. However, the AER accepts NT Gas's proposed project management costs associated with the enhanced integrity program.

The AER's final decision on NT Gas's forecast capex results in a real increase in average annual expenditure of 223 per cent over the access arrangement period, compared to the 526 per cent increase forecast by NT Gas, as shown in figure 4.

5 NT Gas, *Revised access arrangement submission*, May 2011, p. xi.

Figure 4: Total capex–NT Gas proposed and AER final decision ($m , real, 2010–11)



Source: NT Gas, *Access arrangement information*, May 2011, p. 4; AER, *Draft decision*, April 2011, p. 49; NT Gas, *Revised access arrangement information*, May 2011, p. 4.

Operating expenditure

In the draft decision, the AER reduced NT Gas's forecast operating expenditure (opex) to $59 million ($2010–11). This represented a reduction of 19 per cent compared to NT Gas's access arrangement proposal of $73 million. In response to the matters raised in the draft decision, NT Gas revised its opex to $72 million ($2010–11).[6] As part of this revised forecast, NT Gas has moved debt raising costs from WACC to opex as required by the draft decision.[7]

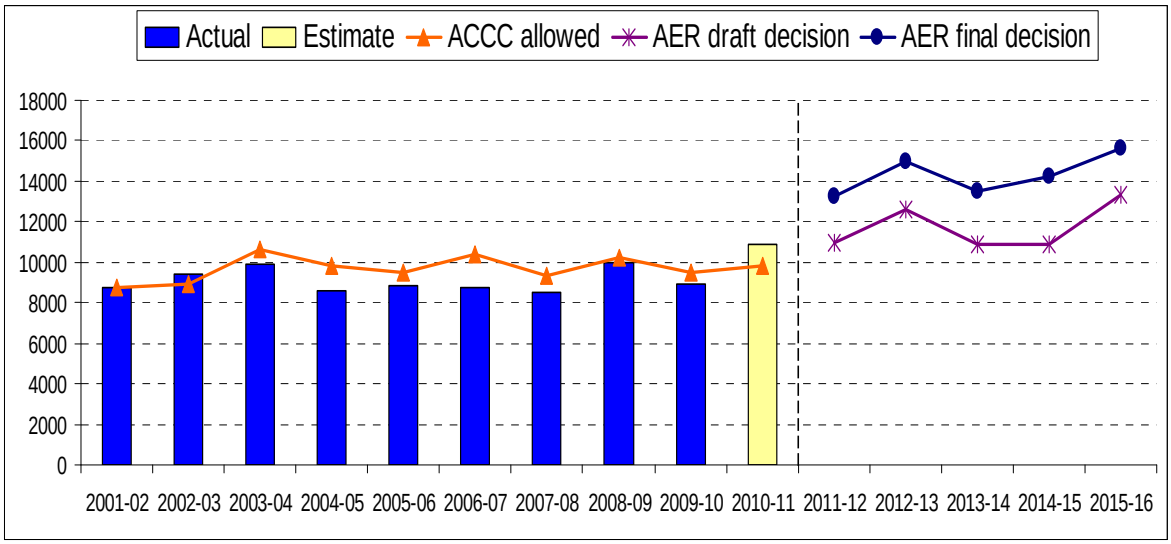
The AER maintains its view that NT Gas's forecast operating costs are not prudent and efficient and the lowest sustainable cost of managing its network, as the NGR requires. The AER has estimated real labour cost escalators that are lower than those forecast by NT Gas based on its own analysis and advice from Access Economics. However, while the AER does not accept NT Gas's proposed labour cost escalators, the AER considers that the resulting reduction in opex is not large enough to warrant revising NT Gas's revised access arrangement proposal.

The AER's final decision, which is to approve NT Gas's revised forecast opex is set out in figure 5.

6 NT Gas, *Revised access arrangement submission*, May 2011, p. 108.

7 NT Gas, *Revised access arrangement submission*, May 2011, p. 107.

Figure 5: Total opex–NT Gas revised access arrangement proposal and AER final decision ($m, 2010–11)

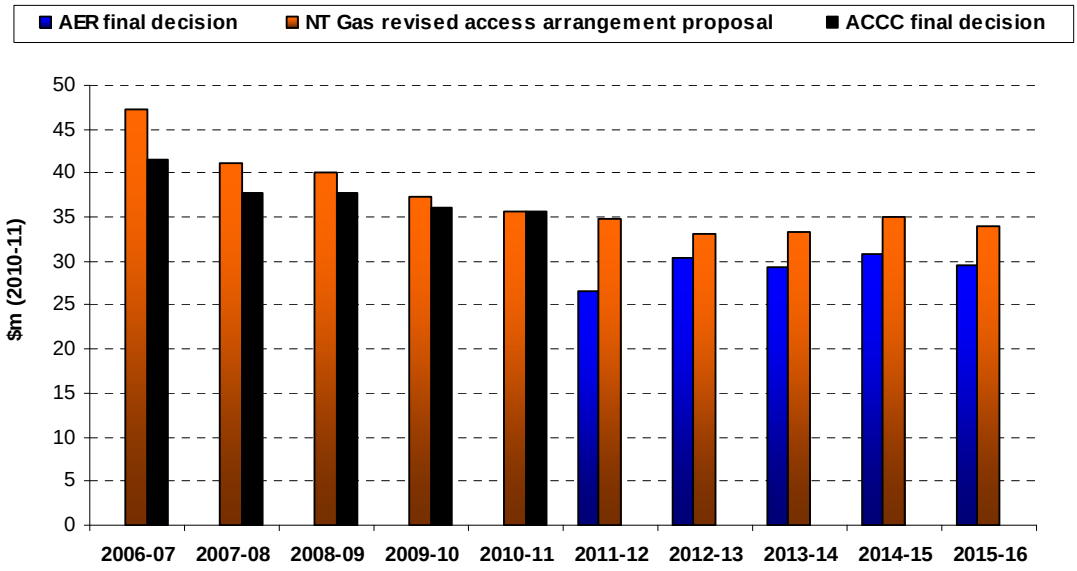


Source: NT Gas, *Access arrangement submission*, December 2010, p. 140; NT Gas, *Revised access arrangement submission*, May 2011, p. 108; AER, *Draft decision*, April 2011, p. 127; AER analysis.
Note: Figure 5 excludes debt raising costs.

Revenue requirement

The AER has calculated NT Gas's revenue requirement over the access arrangement period to be $146.5 million (nominal), 14 per cent less than proposed by NT Gas in its revised access arrangement proposal. This compares to NT Gas's proposed revenue requirement of $170.3 million (nominal), a real increase of 13 per cent from that accepted in the draft decision. The forecast revenue requirement is shown in figure 6.

Figure 6: AER's approved revenue requirement for NT Gas ($m , real, 2010–11)



Source: NT Gas, *Access arrangement submission*, December 2010, p. 142; NT Gas, *Revised access arrangement submission*, May 2011, p. 111; AER analysis.

The AER's forecast revenue requirement is based on forecast capital and operating expenditure considered to be prudent and efficient, forecast depreciation, forecast inflation, and the return on capital. The main reasons for the difference between the AER revenue requirement and NT Gas's revised access arrangement proposal are changes to the rate of return parameters, the capex and opex forecasts, and the tax allowance. In calculating NT Gas's tax allowance, the AER has incorporated the recent Australian Competition Tribunal (Tribunal) ruling that a gamma value of 0.25 is appropriate.

Other issues

NT Gas broadly accepted the AER's amendments to its cost pass through mechanisms as set out in the draft decision. However, NT Gas has rejected a number of technical changes. The AER has accepted a number of these changes, including the proposed amendments to the definition of a *regulatory change event*, and cost pass through procedures. However, the AER does not accept NT Gas's proposed revision to the materiality threshold, and maintains its draft decision that costs incurred from an eligible cost pass through event should be assessed against one per cent of the smoothed forecast revenue in the years those costs are incurred.

The AER accepted NT Gas's demand forecast in the draft decision and does not make any revisions to it in the final decision. NT Gas's demand is forecast to grow at 2.3 per cent per annum over the access arrangement period and is therefore considered reasonable.

Terms and conditions

NT Gas's access arrangement sets out the proposed terms and conditions that are not directly related to the nature or level of tariff paid by users. The draft decision did not accept a number of the terms and conditions of NT Gas's access arrangement proposal and required them to be amended. NT Gas accepted many of the AER's amendments but proposed modifications or did not accept a number of the AER's required amendments.

The AER accepts most of NT Gas's proposed revisions to the wording of clauses as they do not affect the substance of the clauses. However, the AER proposes not to approve some of NT Gas's revised terms and conditions. The AER considers the revised provisions for the terms and conditions better promote the national gas objective of the NGL.

1 Introduction

1.1 Background

Prior to 17 June 2011, the ownership of the Amadeus Gas Pipeline (AGP) was vested in a consortium of banks and the pipeline is leased to N.T. Gas Pty Limited (NT Gas) as trustee of the Amadeus Gas Trust.[8]

NT Gas was formed from a consortium of companies to finance, construct, commission and operate the pipeline which was previously known as Amadeus Basin to Darwin Pipeline (ABDP).[9] The pipeline was commissioned in December 1986 and gas was first delivered to Power and Water Corporation (PWC) in January 1987.[10]

On 17 June 2011, APT Pipelines NT Pty Ltd (APTNT) acquired the AGP.[11] On 20 June 2011, APA Group (APA) confirmed that the transaction to transfer ownership of the AGP from NT Gas to APTNT occurred on 17 June 2011.[12] APTNT now owns, operates and controls the AGP and therefore satisfies the meaning of *service provider* under the National Gas Law (NGL).[13]

To maintain consistency with the AER's draft decision, NT Gas's access arrangement proposal, and NT Gas's revised access arrangement proposal, the final decision will refer to '*NT Gas*' and not '*APTNT*'.

The AGP is approximately 1658 km which includes the Mereenie spurline, Tennant Creek and Katherine laterals, and the Pine Creek outlet.[14] NT Gas supplies gas to PWC predominantly for generating electricity in Darwin.

The AGP consists of the mainline or system backbone and comprises four gas inlet stations (Palm Valley, Mereenie, Ban Ban Springs and Weddell), a compressor station (Warrego), one odorant station (Tylers Pass), eleven mainline valves, eleven scraper stations and thirteen offtakes.[15]

1.2 Regulatory requirements

The AER is responsible for the economic regulation of covered natural gas distribution and transmission pipelines in all states and territories (except WA). The AGP is a covered pipeline.[16] The AER's functions and powers are set out in the NGL and the National Gas Rules (NGR).

---

8 NT Gas, *Amadeus gas pipeline access arrangement revision proposal submission*, 23 December 2010, p. 5. (NT Gas, *Access arrangement submission*, December 2010).

9 NT Gas, *Access arrangement submission*, December 2010, p. 5.

10 NT Gas, *Access arrangement submission*, December 2010, p. 5.

11 APA Group, Email to the AER–*Application to exempt APTNT from ring fencing obligation under section 140 of the NGL*, 27 May 2011.

12 NT Gas, Email to the AER, *AER.NTGAS.39-41 - Project Management costs*, 20 June 2011.

13 NGL, s. 8.

14 NT Gas, *Access arrangement submission*, December 2010, p. ix.

15 NT Gas, *Access arrangement submission*, December 2010, p. ix.

16 AEMC, List of natural gas pipelines, viewed 9 December 2010, <http://www.aemc.gov.au/Gas/Scheme-Register/Pipeline-list-summary.html>.

1.3 Draft decision

The AER released its draft decision on 21 April 2011. The draft decision did not approve NT Gas's access arrangement proposal for the AGP for the period 1 July 2011–30 June 2016 on 21 May 2011 (draft decision).

1.4 Revised access arrangement proposal

NT Gas submitted a revised access arrangement proposal and revised access arrangement information for the AGP to the AER on 27 May 2011. NT Gas set out its response to the draft decision in a series of attachments to the access arrangement revision proposal submission.

1.5 Structure of final decision

The AER's consideration of NT Gas's revised access arrangement proposal and revised access arrangement information is set out as follows:

- Introductory chapters outline the regulatory environment, network description and pipeline services.
- Part A outlines the key components of the total revenue building blocks including the capital base, depreciation, the rate of return, taxation, operating expenditure (opex) and a summary of total revenue.
- Part B outlines the demand forecasts, reference tariffs and tariff variation mechanisms.
- Part C outlines the non-tariff components of the revised access arrangement proposal.

1.6 Next steps

The NGR provides that if the AER does not approve an access arrangement proposal it must propose an access arrangement or revisions to the access arrangement for the relevant pipeline.[17]

The AER has proposed an access arrangement incorporating the revisions set out in its final decision. This has been formulated with regard to the matters required to be included in an access arrangement by the NGL and NGR, NT Gas's revised access arrangement proposal, and the AER's reasons for refusing to approve that proposal.[18]

The AER must make a decision giving effect to its proposed access arrangement within two months of making the final decision. The AER expects to make that decision by 1 August 2011.

17 NGR, r. 64(1).

18 NGR, r. 64(2).

2 Pipeline services

NT Gas's revised access arrangement proposal describes the type and nature of pipeline services to be provided. This includes those services likely to be sought by a significant part of the market (reference service) and non-reference services.

The draft decision did not require any amendments to NT Gas's proposed pipeline services. The AER remains satisfied that NT Gas has identified the pipeline to which the access arrangement relates and described the proposed pipeline services and specified reference services in accordance with the requirements of the NGR.

2.1 Regulatory requirements

Rule 48(1) of the NGR provides that a full access arrangement must specify certain information for pipeline services, including reference services. Pipeline services include haulage services, interconnection services and ancillary services.[19] Reference services are defined as pipeline services that are likely to be sought by a significant part of the market.[20] An access arrangement must:

- identify the pipeline to which the access arrangement relates and a website at which a description of the pipeline can be inspected[21]
- describe the pipeline services the service provider proposes to offer to provide by means of the pipeline[22]
- specify the reference services, and the reference tariff for each reference service.[23]

Rule 109(1) of the NGR provides that a pipeline service provider must not make it a condition of the provision of a service that the prospective user also accept another non-gratuitous service, unless the bundling of services is reasonably necessary.

2.2 Revised access arrangement proposal

In chapter 2 of the draft decision, the AER did not propose any required amendments to NT Gas's access arrangement proposal in relation to pipeline services. NT Gas's revised access arrangement proposal in relation to pipeline services is unchanged from its access arrangement proposal.

2.3 Submissions

No submissions were made on pipeline services.

2.4 AER's consideration

The AER's consideration of NT Gas's proposed pipeline services is set out in chapter 2 of the draft decision.

19 NGL, s. 2.

20 NGR, r. 101(2).

21 NGR, r. 48(1)(a).

22 NGR, r. 48(1)(b).

23 NGR, r. 48(1)(c) and r. 48(1)(d).

2.5 Conclusion

As set out in chapter 2 of the draft decision, the AER considers NT Gas has appropriately identified the pipeline to which the access arrangement relates and described the proposed pipeline services in accordance with the requirements of the NGR. The AER approves NT Gas's proposed pipeline services and specification of reference services as these comply with r. 48(1)(a)–(c) of the NGR.

Part A – Total revenue (building block components)

3 Capital base

This chapter sets out the AER's consideration and analysis of the opening and projected capital base proposed by NT Gas in its revised access arrangement proposal.

In its revised access arrangement proposal, NT Gas proposed an opening capital base on 1 July 2011 of $102.7 million (nominal). NT Gas accepted the draft decision to use March to March inflation. However, NT Gas did not accept the draft decision to adjust the depreciation amounts involved in making up the opening capital base for the difference between actual and forecast inflation. The AER does not approve NT Gas's proposed opening capital base and therefore proposes revisions to NT Gas's opening capital base.

In the draft decision, the AER accepted forecast capex of $13.9 million ($2010–11). NT Gas's revised access arrangement proposal included forecast capex of $40.7 million ($2010–11) over the access arrangement period. NT Gas did not accept the AER's amendments in relation to adjustments made for real labour cost escalators and project management costs.

For the final decision, the AER does not accept the revisions to the enhanced integrity program submitted by NT Gas. The AER has accepted a carryover of expenditure proposed for 2010–11 (in NT Gas's December 2010 access arrangement proposal) and delayed until 2011–12. In total, the accepted forecast capex is 49 per cent less than that proposed by NT Gas in its revised access arrangement proposal. Overall, the AER approves $21.0 million in forecast capex over the access arrangement period, which compares with $40.7 million ($2010–11) proposed by NT Gas. Consistent with its draft decision, the AER still considers that NT Gas has overestimated its real labour cost escalation.

The AER accepts NT Gas's proposed project management costs for the access arrangement period are a necessary component of the delivery of the enhanced integrity program. The AER considers that NT Gas have provided sufficient justification for the inclusion of the project management costs.

The AER has calculated a closing capital base on 30 June 2016 of $102.2 million (nominal).

3.1 Regulatory requirements

In assessing NT Gas's opening capital base, the AER is required to consider the transitional provisions of the NGR (Clause 3(2) of schedule 1 of the NGR). This relates to actual or forecast capex (new facilities investment) under s. 8.21 of the Code.

In relation to the opening and projected capital base, the NGR requires NT Gas to demonstrate:

- capex (by asset class) over the earlier access arrangement period (r. 72(1)(a)(i) of the NGR)

- how the capital base is arrived at including a demonstration of how it is increased or diminished over the previous access arrangement period (r. 72(1)(b) of the NGR)

- the opening capital base is derived in accordance with r. 77(2). Rule 77(2) of the NGR specifies the components that contribute to the derivation of the opening capital base including conforming capex, depreciation and redundant and disposed of assets

- a forecast of conforming capex (r. 72(1)(c)(i) of the NGR) and depreciation over the access arrangement period, including a demonstration of how it is derived (r. 72(1)(c)(ii) of the NGR)

- that the forecasts must be arrived at on a reasonable basis, and must represent the best forecast or estimate possible in the circumstances (r. 74(2) of the NGR)

- the projected capital base is derived using the formula (opening capital base plus forecast conforming capex less forecast depreciation and disposed pipeline assets) in r. 78 of the NGR

- forecast capex is such as would be incurred by a prudent service provider (r. 79(1)(a) of the NGR)

- forecast capex is justifiable on a ground stated in r. 79(2) of the NGR. Such as, where the overall economic value is positive, or that either the expenditure is necessary to maintain and improve the safety of services or to comply with a regulatory obligation or meet levels of demand for services existing at the time the capex is incurred.

Rule 90 of the NGR requires that the access arrangement must contain provisions governing the calculation of depreciation for establishing the opening capital base for the next access arrangement period. The provisions must resolve whether depreciation of the capital base is to be based on forecast or actual capex.

Rule 85(1) of the NGR allows an access arrangement to include a capital redundancy mechanism. The AER may also require such a mechanism in the access arrangement.

The NGR requires NT Gas to show the key expenditure performance indicators to be used to support the expenditure to be incurred over the access arrangement period (r. 72(1)(f) of the NGR).

The NGR also sets out how an access arrangement proposal may be amended. A service provider may, with the AER's consent, revise an access arrangement proposal even though submissions have already been sought (r. 58(3) of the NGR). Once the AER has made a draft decision, the service provider may submit additions or other amendments to its access arrangement proposal (r. 60(1) of the NGR). However, the NGR requires that amendments must be limited to those necessary to address matters raised in the access arrangement draft decision unless the AER approves further amendments (r. 60(2) of the NGR). The AER may however, approve further amendments to the access arrangement proposal, for example, to deal with a change in

circumstances of the service provider's business since submission of the access arrangement proposal.[24]

3.2 Revised access arrangement proposal

In the draft decision, the AER accepted most elements of NT Gas's December 2010 access arrangement proposal in respect of its capital base. However, the AER proposed a number of amendments in order to approve NT Gas's access arrangement proposal. In particular, the AER proposed that NT Gas:

- adjust estimated capex in 2010–11 with updated 2010–11 figures reducing the NT Gas opening capital base by $13.6 million ($2010–11)
- reduce its opening capital base by $0.8 million ($2010–11) to reflect the AER's calculation of depreciation during the earlier access arrangement period
- amend its forecast capex by applying real labour cost escalators in 2010–11 estimated by the AER
- remove project management costs from the enhanced integrity program capex due to insufficient information justifying these costs
- use of March to March inflation figures to adjust the capital base.[25]

In its revised access arrangement proposal, NT Gas accepted the amendments in relation to the use of March to March inflation figures to adjust the capital base.[26] However, NT Gas did not accept the following amendments:

- the calculation of the opening capital base for 1 July 2011 using the AER's method of depreciation which took into account the difference between actual and forecast inflation
- the application of the real labour cost escalators estimated by the AER
- the removal of the project management costs associated with forecast enhanced integrity program capex.[27]

3.2.1 Opening capital base

Table 3.1 sets out the opening capital base as proposed by NT Gas in its revised access arrangement proposal. NT Gas accepted aspects of amendment 3.1 set out in the draft decision. However, NT Gas did not accept the adjustments made to the enhanced integrity program which included the removal of project management costs and real labour cost escalators. Further, NT Gas did not accept the AER's amendment to calculate depreciation in establishing the opening capital base. Consequently, NT

24 NGR, r. 60(2).

25 AER, *Draft decision*, April 2011, p. 49.

26 NT Gas, *Revised access arrangement information*, May 2011, p. xi.

27 NT Gas, *Revised access arrangement information*, May 2011, p. xi.

Gas proposed a revised capital base on 1 July 2011 of $102.7m; this is set out in table 3.1 below.[28]

Table 3.1: NT Gas proposed opening capital base ($m, 2010–11)[a]

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	Total
Opening capital base	228.5	217.1	205.5	191.6	174.1	155.6	142.1	133.4	121.5	109.5	228.5
plus capex	0.2	0.4	3.0	0.4	0.5	0.3	0.7	0.6	0.7	6.1	13.0
plus speculative capex	-	-	-	-	-	-	-	-	-	-	-
plus reused redundant assets	-	-	-	-	-	-	-	-	-	-	-
less depreciation	(18.3)	(19.5)	(20.9)	(22.5)	(24.2)	(17.6)	(15.5)	(15.8)	(16.2)	(16.5)	(18.7)
plus indexation	6.7	7.5	4.1	4.5	5.2	3.8	6.0	3.3	3.5	3.6	48.2
less redundant assets	-	-	-	-	-	-	-	-	-	-	-
less disposals	-	-	-	-	-	-	-	-	-	-	-
Closing capital base	217.1	205.5	191.6	174.1	155.6	142.1	133.4	121.5	109.5	102.7	102.7

Source: NT Gas, *Revised access arrangement information*, May 2011, p. 13.

3.2.1.1 Capital expenditure in the earlier access arrangement period

The revised access arrangement proposal has not incorporated the AER's proposed amendment 3.1 to estimated capex in 2010–11.[29] In particular, NT Gas did not accept the AER's adjustments to real labour cost escalators and project management costs made to the enhanced integrity program in 2010–11.[30] Table 3.2 sets out the draft decision, NT Gas's revised access arrangement proposal and access arrangement proposal on capex for the earlier access arrangement period.

28 AER, *Draft decision*, April 2011, p. 49, NT Gas, *Revised access arrangement information*, May 2011, p. 13. NT Gas accepted the AER's amendment to forecast capex for 2010–11 however it did not accept the AER's adjustments to real cost escalators and project management costs.

29 NT Gas, *Revised access arrangement information*, May 2011, p. xi.

30 NT Gas, *Revised access arrangement information*, May 2011, p. xi.

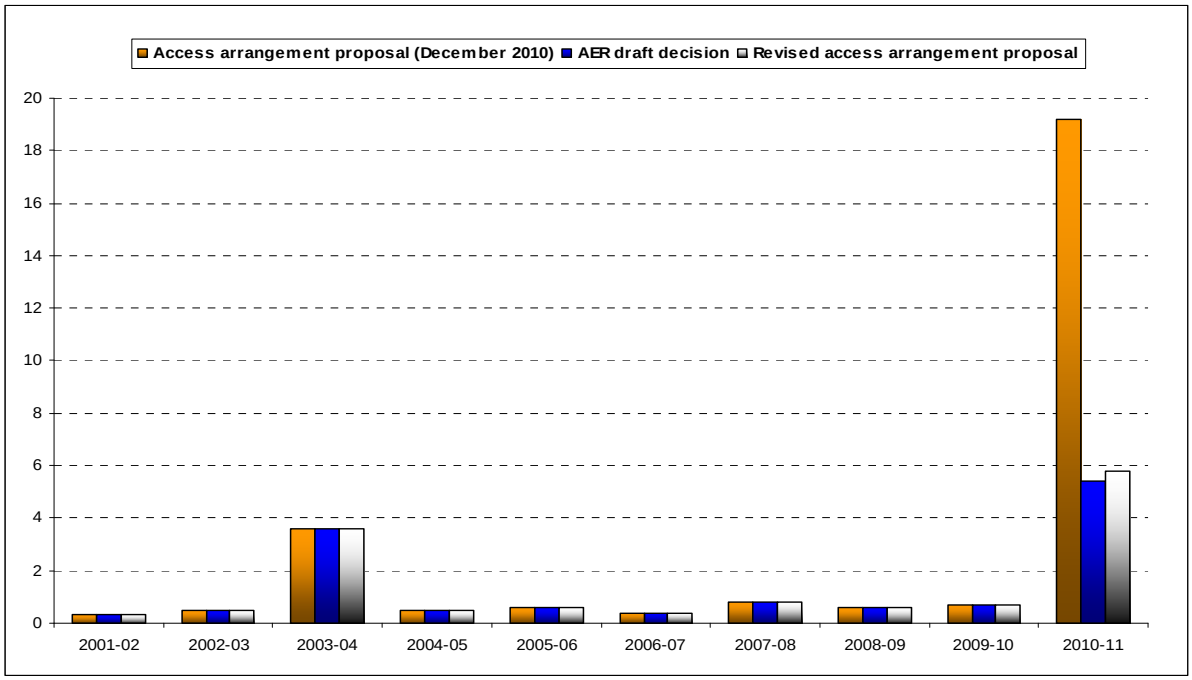
Table 3.2: Forecast and actual/estimated capital expenditure for 2006–11 ($m, 2010–11)

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11[a]	Total
NT Gas access arrangement proposal December 2010	0.3	0.5	3.6	0.5	0.6	0.4	0.8	0.6	0.7	19.2	26.8
Draft decision	0.3	0.5	3.6	0.5	0.6	0.4	0.8	0.6	0.7	5.4	13.1
NT Gas revised access arrangement proposal may 2011	0.3	0.5	3.6	0.5	0.6	0.4	0.8	0.6	0.7	5.8	13.6

Source: NT Gas, *Access arrangement information*, May 2011, p. 4; AER, *Draft decision*, April 2011, p. 49; NT Gas, *Revised access arrangement information*, May 2011, p. 4.
a: estimate

NT Gas included $0.4 million ($2010–11) of additional capex in its calculation of the opening capital base over what the AER had included in the draft decision.[31] Figure 3.1 compares NT Gas's capex over the earlier access arrangement period submitted by NT Gas in December 2010 with the draft decision and NT Gas's revised access arrangement proposal.

Figure 3.1: Comparison of approved and actual/estimated capital expenditure for NT Gas over the earlier access arrangement period ($m, real, 2010–11)



31 NT Gas, *Access arrangement submission*, December 2010, pp. 81, 83; NT Gas, *Revised access arrangement submission*, May 2011, pp 14,27; AER, *Draft decision*, April 2011, p. 49.

Source: NT Gas, *Access arrangement information*, May 2011, p. 4; AER, *Draft decision*, April 2011, p. 49; NT Gas, *Revised access arrangement information*, May 2011, p. 4.

3.2.1.2 Adjustment to the capital base for inflation in the earlier access arrangement period

The revised access arrangement proposal incorporated the draft decision (amendment 3.1) to adjust the roll forward model (RFM) which uses the March to March CPI to calculate inflation.[32] NT Gas's revised access arrangement proposal has incorporated the draft decision inflation of 2.57 per cent.[33]

3.2.1.3 Depreciation in the earlier access arrangement period

In its revised access arrangement proposal, NT Gas has not incorporated the draft decision (amendment 3.1) to recalculate its capital base as at 1 July 2011 using forecast depreciation (updated for actual inflation) from the earlier access arrangement period.[34] Instead, NT Gas used the forecast depreciation (unadjusted for actual inflation) from the earlier access arrangement period.

3.2.2 Projected capital base

NT Gas did not accept the draft decision amendments (3.3 and 3.4).on the projected capital base.[35] In particular, NT Gas maintained its approach on real labour cost escalators and project management costs for forecast capex for the enhanced integrity program.[36] Further, NT Gas proposed revised forecasts for the enhanced integrity program. Based on these forecast capex revisions, NT Gas calculated a revised projected capital base of $130.1 million (nominal) at 1 July 2016, compared with its earlier forecast of $110.4 million (nominal). The revised access arrangement proposal included forecast capex of $40.7 million ($2010–11) and depreciation of $32.5 million (nominal) for the access arrangement period.[37]

NT Gas's projected capital base is outlined in table 3.3 below.

32 NT Gas, *Revised access arrangement submission*, May 2011, p. 13.

33 NT Gas, *Revised access arrangement submission*, May 2011, p. 28.

34 NT Gas, *Revised access arrangement information*, May 2011, p. xi.

35 NT Gas, *Revised access arrangement submission*, May 2011, p. xi.

36 NT Gas, *Revised access arrangement submission*, May 2011, p. xi.

37 NT Gas, *Revised access arrangement information*, May 2011, p. 12.

Table 3.3 Revised projected capital base ($m, nominal)

	2011–12	2012–13	2013–14	2014–15	2015–16
Opening capital base	102.7	116.2	127.1	129.2	128.3
plus indexation	2.6	3.0	3.3	3.3	3.3
plus forecast capex	20.7	13.8	5.0	2.4	2.6
less forecast depreciation	9.9	5.8	6.2	6.5	4.1
less forecast disposals	0.0	0.0	0.0	0.0	0.0
less forecast redundant assets	0.0	0.0	0.0	0.0	0.0
Closing capital base	116.2	127.1	129.2	128.3	130.1

Source: NT Gas, *Revised access arrangement submission*, May 2011, pp. 28–9.

3.2.2.1 Forecast capital expenditure for the access arrangement period

In its revised access arrangement proposal, NT Gas forecast capex over the access arrangement period of $40.7 million ($2010–11). This compares with $14.5 million ($2010–11) forecast in its December 2010 access arrangement proposal.[38] The revised forecasts reflected significant revisions to the enhanced integrity program, and adjustments to real labour cost escalators and forecast of project management costs.[39] NT Gas forecast costs for this program to be $39.4 million ($2010–11) compared with $18.8 million ($2010–11) included in NT Gas's December 2010 access arrangement proposal.[40]

In addition, NT Gas did not accept the adjustments made in the draft decision on capex forecasts for the access arrangement period as it did not accept the AER's real labour cost escalator forecasts and the removal of the project management costs.[41] NT Gas also submitted information to support its revised forecasts, consistent with the revisions it had submitted in March 2011.[42] NT Gas's revised forecast capex is shown in table 3.4.

Table 3.4 Revised forecast capex for the access arrangement period ($m, 2010–11)

	2011–12	2012–13	2013–14	2014–15	2015–16	Total
Replacement	19.3	12.5	4.0	1.9	1.9	39.7

38 NT Gas, *Revised access arrangement information*, May 2011, p. 9, NT Gas, *Access arrangement information*, December 2010, p. 11.

39 NT Gas, *Revised access arrangement information*, May 2011, p. 9.

40 NT Gas, *Revised access arrangement information*, May 2011, p. 9, NT Gas, *Access arrangement information*, December 2010, p. 83.

41 NT Gas, *Revised access arrangement information*, May 2011, p. xii.

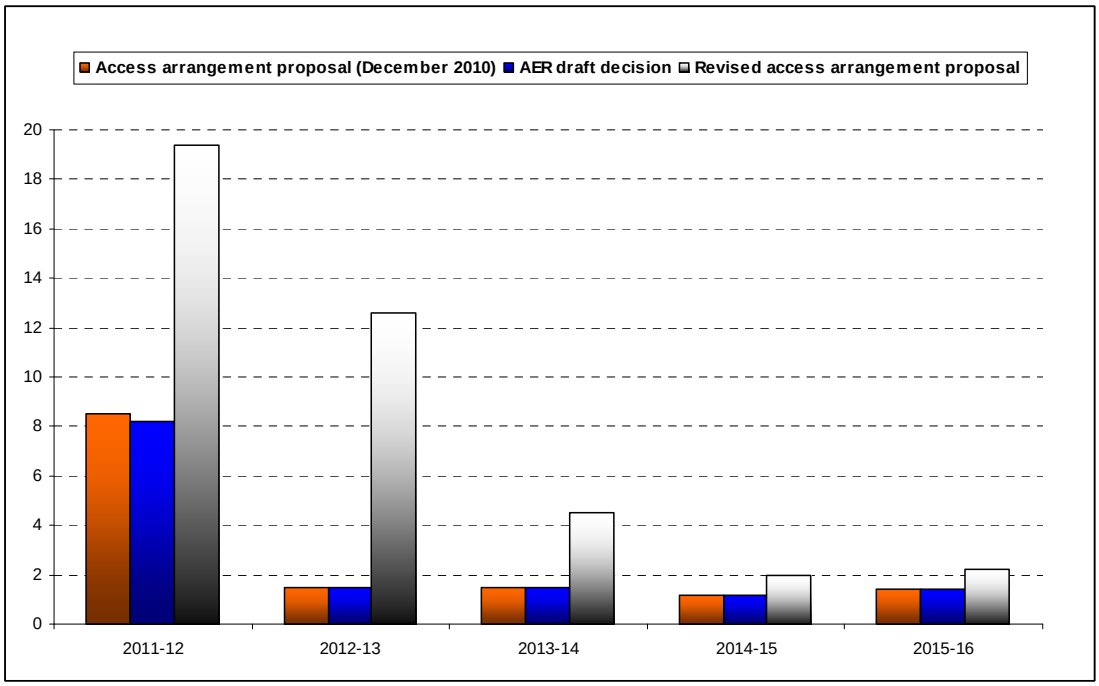
42 NT Gas, *Submission on revised capex numbers—access arrangement revision proposal*, March 2011, attachment A.

Non-system	0.1	0.1	0.4	0.1	0.3	1.1
Total	19.4	12.6	4.5	2.0	2.2	40.7

Source: NT Gas, *Revised access arrangement information*, May 2011, p. 10.

Figure 3.2 compares NT Gas's forecast capex as submitted in its December 2010 access arrangement proposal with the draft decision and NT Gas's revised access arrangement proposal.

Figure 3.2 NT Gas December proposal, AER draft decision and NT Gas revised proposal - forecast capital expenditure ($m , real, 2010–11)



Source: NT Gas, *Access arrangement information*, May 2011, p. 10; AER, *Draft decision*, April 2011, p. 50; NT Gas, *Revised access arrangement information*, May 2011, p. 10.

Cost escalators

NT Gas did not accept the AER's real labour cost escalators. NT Gas's revised real labour cost escalators are discussed in appendix B of the final decision.

Project management costs

In its revised access arrangement proposal, NT Gas submitted that its direct project management costs are a necessary part of the costs of delivering its capital program.[43] NT Gas also submitted that in response to the AER's concerns it has reviewed its direct project management costs and the methodology used to allocate these costs to individual projects.[44] NT Gas further submitted that a more accurate allocation of its expected direct project management costs have been included in its forecast capex

43 NT Gas, *Revised access arrangement submission*, May 2011, p. 11.

44 NT Gas, *Revised access arrangement submission*, May 2011, p. 11.

following an internal review.[45] Overall, NT Gas has proposed $[c-i-c] million in project management costs for the enhanced integrity program.[46]

NT Gas's revised total project management cost allocation is set out in table 3.5.

Table 3.5 Project management cost allocation

Costs	Description
Project planning and engineering costs associated with each project	▪ varies in relation to the complexity of the project (uniqueness of the task, number of sites involved, etc) ▪ included in detailed project costing

Direct project management costs	Includes the costs of providing:
	▪ Labour (including the time-related costs for contractors not otherwise allocated to specific capital projects):
	  ▪ Project manager
	  ▪ Technical regulatory manager
	  ▪ Senior engineer instrumental electrical
	  ▪ Project engineer (2)
	  ▪ Administration and document controller
	▪ Vehicles and fuel for the project manager and engineers
	▪ Accommodation, hotel and unit accommodation for fly-in, fly-out team members
	▪ Flights for project team members
	▪ Regulatory compliance assurance.
	▪ Purchase or lease of office facilities, including the installation, rental and removal of temporary office demountable on site at NT Gas Palmerston Office, and car parking.

Source: NT Gas, *Revised access arrangement submission*, May 2011, p. 23.

The project management costs are related to specialist contractors engaged to undertake the enhanced integrity program.[47] NT Gas advised these contractors would include a dedicated project manager and a project team to provide engineering design, management and document control.[48] NT Gas submitted that:

- for the enhanced integrity program to proceed, the project management costs must be included in the forecast capex
- the costs are in line with normal regulation and accounting practice
- these costs should not be characterised as 'fees,' as described in the draft decision

45 NT Gas, *Revised access arrangement submission*, May 2011, p. 11.

46 NT Gas, *Revised access arrangement submission*, May 2011, p. 11.

47 NT Gas, *Revised access arrangement submission*, May 2011, p. 22.

48 NT Gas, *Revised access arrangement submission*, May 2011, p. 22.

- the methodology to calculate the level of project management costs had been revised from the methodology proposed in the December 2010 access arrangement proposal
- it had undertaken a bottom-up forecast of its enhanced integrity program direct project management costs expected over the duration of the program (2010–11 to 2015–16).[49]

Table 3.6 sets out the revised total project management cost proposed by NT Gas.

Table 3.6 Revised total project management costs ($m, real 2010–11)

Costs	
Labour	[c-i-c]
Vehicles	[c-i-c]
Accommodation	[c-i-c]
Flights	[c-i-c]
Office facilities	[c-i-c]
Total	[c-i-c]

Source: NT Gas, *Revised access arrangement submission*, May 2011, p. 25.

3.2.2.2 Adjustment to the capital base for inflation in the access arrangement period

In its revised access arrangement proposal, NT Gas incorporated an inflation forecast of 2.5 per cent, which is consistent with the method proposed by the AER in the draft decision.[50]

3.2.2.3 Forecast depreciation allowance in the access arrangement period

NT Gas's proposed allowance for depreciation in the access arrangement period was discussed in chapter 4 of the draft decision.

3.3 Summary of submissions

The AER received submissions from the Northern Territory Major Energy Users (NTMEU), Power and Water Corporation (PWC) and APT Northern Territory Pipelines Pty Ltd (APTNT and referred to as NT Gas in the final decision).[51]

NTMEU submitted that:

- the AER had incorrectly allowed NT Gas to roll expenditure on the Katherine Meter Station into the capital base despite advice from PWC that this was enabled by a capital contribution[52]

49 NT Gas, *Revised access arrangement submission*, May 2011, p. 22.

50 NT Gas, *Revised access arrangement submission*, May 2011, p. 28.

51 To maintain consistency with the AER's draft decision, NT Gas's access arrangement proposal, and revised access arrangement proposal, the final decision will refer to 'NT Gas' and not 'APTNT'.

- NT Gas initially submitted that it would incur $19.2 million of capex in 2010–11. NT Gas then submitted an updated forecast which indicated that $5.9 million of capex would be incurred in 2010–11 (a 70 per cent reduction). NTMEU submitted that this casts doubt on NT Gas's ability to:
  - forecast its capital costs accurately
  - undertake and complete a capex program of vastly increased scope over its program during the last access arrangement period[53]
- NT Gas's capex investment in the earlier access arrangement period was deferred at no cost to its reliability indicating that NT Gas was 'gaming the system' by gaining an extra return on capital[54]
- the nearly 50 per cent upward revision in the cost of the capex program from NT Gas's initial proposal to its revised access arrangement proposal suggested that NT Gas was incapable of accurately forecasting its capex needs[55]
- in order to ensure the correct incentives are placed on service providers, the AER should use historic capex as a benchmark for future capex[56]
- stakeholders must be allowed to see and comment on the reasonableness of the AER's considerations on the revised, more extensive capex program proposed by NT Gas[57]
- the AER's consideration of project management costs was suitable, as these fees were not required in the historic approach to capex.[58]

PWC submitted that:

- it was concerned about an apparent lack of technical and operational rigor and scope in NT Gas's submission in forecasting its capex program[59]
- there was not sufficient justification for the proposed expenditure and work plan on anchor block repairs, cathodic protection upgrade, and below ground station pipe-work recoating[60]
- it supported the AER in its exclusion of project management costs, which inflated project cost estimates.[61]

---

52 NTMEU, *Submission to the AER*, June 2011, pp. 9–10.

53 NTMEU, *Submission to the AER*, June 2011, pp. 10–11.

54 NTMEU, *Submission to the AER*, June 2011, pp. 12–13.

55 NTMEU, *Submission to the AER*, June 2011, pp. 13–14.

56 NTMEU, *Submission to the AER*, June 2011, pp. 14–17.

57 NTMEU, *Submission to the AER*, June 2011, pp. 18–19.

58 NTMEU, *Submission to the AER*, June 2011, p. 19.

59 PWC, *Submission to the AER*, June 2011, p. 1.

60 PWC, *Submission to the AER*, June 2011, p. 2.

61 PWC, *Submission to the AER*, June 2011, p. 2.

NT Gas

NT Gas submitted that the access arrangement proposal that the AER was required to assess in its draft decision was the access arrangement proposal of December 2010 as varied by the information provided by NT Gas on 25 February 2011 and/or the access arrangement revision proposal submitted on 18 March 2011.[62] Further, with regard to the approved capex in the draft decision, NT Gas submitted that it is incorrect for the AER to assert that it approved NT Gas's forecast capex as set out in NT Gas's December 2010 access arrangement proposal.[63] NT Gas submitted that the draft decision did not approve its forecast capex provided in the December 2010 access arrangement proposal.[64] By only accepting the December 2010 access arrangement proposal, a significant proportion of the total capex estimated amount for 2010–11 and the forecast amount for the next access arrangement period has 'fallen through the gap'.[65] Therefore, NT Gas submitted that the "matter" addressed in the revised access arrangement proposal was that the AER's did not approve NT Gas's forecast capex.[66] In its revised access arrangement proposal, NT Gas was responsive to the AER's draft decision–reflecting the fact that significant forecast expenditure had been shifted from the earlier access arrangement period to the access arrangement period.[67]

NT Gas also submitted that with regard to the AER's consideration of the revised forecasts; as from February and/or March 2011, the revised forecasts formed part of NT Gas's access arrangement proposal.[68] NT Gas submitted that as a result, the AER should exercise discretion by taking into account the revised forecasts as:

- those forecasts represent the best forecast or estimate of capex possible in the circumstances[69]

- in NT Gas's view, the revised forecasts were made in response to an information request from the AER.[70]

NT Gas further submitted that the AER should not make its final decision on forecast capex allowances based on the information presented in the December 2010 access arrangement proposal.[71] NT Gas submitted that such an outcome would be considered not to have arrived at on a reasonable basis, nor to represent the best forecast or estimate possible in the circumstances.[72]

62 APTNT, *Submission to the AER*, 24 June 2011, p. 2.

63 APTNT, *Submission to the AER*, 24 June 2011, p. 2.

64 APTNT, *Submission to the AER*, 24 June 2011, p. 2.

65 APTNT, *Submission to the AER*, 24 June 2011, pp. 2–3.

66 APTNT, *Submission to the AER*, 24 June 2011, p. 4.

67 APTNT, *Submission to the AER*, 24 June 2011, p. 4.

68 APTNT, *Submission to the AER*, 24 June 2011, p. 4.

69 APTNT, *Submission to the AER*, 24 June 2011, p. 4.

70 APTNT, *Submission to the AER*, 24 June 2011, p. 2.

71 APTNT, *Submission to the AER*, 24 June 2011, p. 4.

72 APTNT, *Submission to the AER*, 24 June 2011, p. 4.

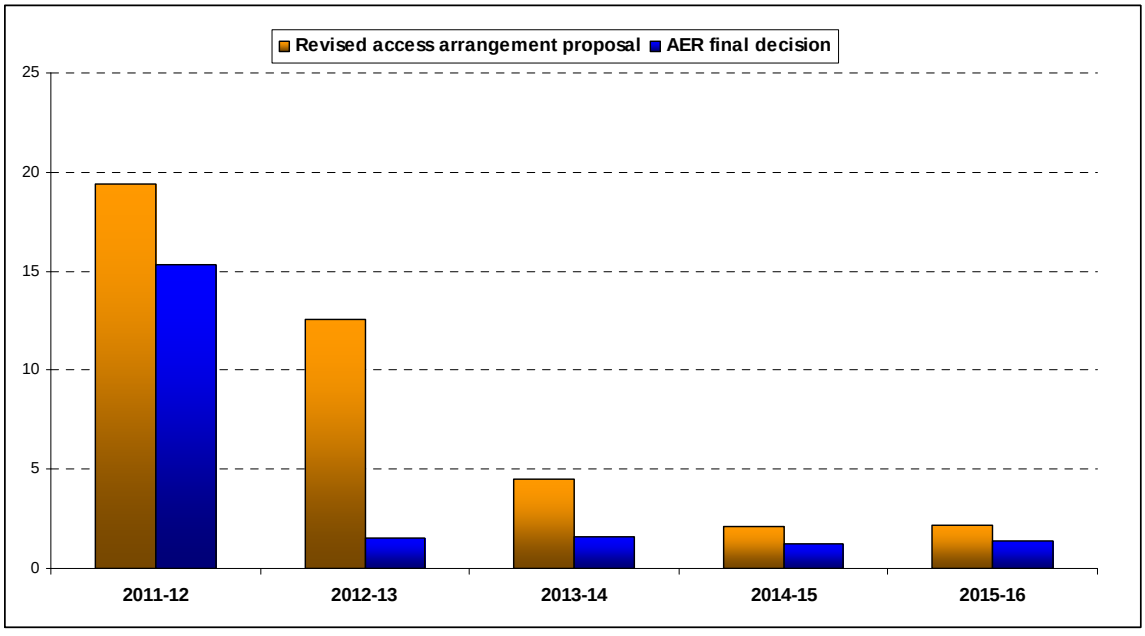
3.4 AER's consideration

In its revised access arrangement NT Gas has accepted only some aspects of the capital base revisions proposed in the draft decision. NT Gas accepted the AER's decision on the appropriate inflation rate and the approach to inflating future tariffs.[73] However, NT Gas did not accept the revisions to its real labour cost escalators and project management costs from its capex in the final year of the earlier access arrangement period. Further, NT Gas did not accept the AER's amendment in relation to forecast capex for the access arrangement period.

The AER does not accept NT Gas's revised capital base because it considers that NT Gas's revisions do not meet the requirements of the NGR. The AER therefore approves $92.1 million ($2010–11) for the opening capital base. The AER also does not accept NT Gas's revised capex forecast. The AER approves a total forecast capex of $21.0 million ($2010–11) for the access arrangement period compared with $40.7 million ($2010–11) proposed by NT Gas in the revised access arrangement proposal.

Figure 3.3 shows the AER's approved forecast of capex for the access arrangement period compared to those proposed in the revised access arrangement period.

Figure 3.3: NT Gas's forecast capex compared to the AER's final decision ($m, real 2010–11)



Source: NT Gas, *Revised access arrangement information*, May 2011; p. 10; AER analysis.

The AER's consideration of these issues is set out below.

3.4.1 Opening capital base

NT Gas did not accept the draft decision on the opening capital base for the earlier access arrangement period.[74] In particular, NT Gas did not accept the amendments

73 NT Gas, *Revised access arrangement submission*, May 2011, p. xi.

74 NT Gas, *Revised access arrangement submission*, May 2011, p. xi.

proposed by the AER in regard to real labour cost escalators and project management costs. In addition, NT Gas did not accept the AER's calculation of depreciation over the earlier access arrangement period.[75]

The AER has reviewed the opening capital base on 1 July 2011 proposed by NT Gas in its revised access arrangement proposal. The AER proposes further revisions be made to conforming capex, depreciation and the rates of inflation applied to the capital base. Overall, the adjustment results in an opening capital base of $92 million (nominal), $10.6 million less than that proposed by NT Gas in its revised access arrangement proposal.

3.4.1.1 Conforming capital expenditure for the earlier access arrangement period

The AER does not approve NT Gas's revised capex in the earlier access arrangement period.

In the draft decision, the AER did not accept NT Gas's proposed capex for the earlier access arrangement period. As outlined in draft decision, the AER did not approve NT Gas's proposed capex for 2010–11 and instead used an updated estimate of actual expenditure in this year.[76] In response, NT Gas has accepted only part of the draft decision on capex for the earlier access arrangement period.[77] NT Gas has proposed adjustments be made to real labour cost escalators and project management costs.[78]

Although the AER approves NT Gas's proposed project management costs as discussed in section 3.4.2.3 below, it has revised NT Gas's conforming capex in the earlier access arrangement period to incorporate necessary adjustments to real labour cost escalators. These are discussed in appendix B of the final decision. For the reasons discussed in appendix B, the AER considers that the real labour cost escalators related to capex have not been made on a reasonable basis, do not represent the best forecast or estimate possible under r. 74 of the NGR and that this expenditure does not meet the capex criteria under r. 79 of the NGR. As a consequence, the AER proposes to revise the capex in the earlier access arrangement period as set out in revision 3.1.

3.4.1.2 Deprecation used in the roll forward model

The AER does not accept NT Gas's proposed deprecation amounts used to roll forward the capital base as at 1 July 2011. In the draft decision, the AER considered the ACCC forecast depreciation (updated for actual inflation) should be used to roll forward the capital base. Although, in its revised access arrangement proposal NT Gas adopted the ACCC's forecast deprecation to roll forward the capital base, it did not update the forecast depreciation for the difference between forecast and actual inflation as required by in the draft decision.[79] This has resulted in the proposed depreciation adjustments being even lower than those submitted in the December 2010 access arrangement proposal, which the draft decision considered were already understated.

---

75 NT Gas, *Revised access arrangement submission*, May 2011, p. xi.

76 AER, *Draft decision*, April 2011, p. 49.

77 NT Gas, *Revised access arrangement submission*, May 2011, p. xi.

78 NT Gas, *Revised access arrangement submission*, May 2011, p. xi.

79 AER, *Draft decision*, April 2011, pp. 35–36

NT Gas submitted that the AER confused the concepts of depreciation and the return of capital and, by applying indexation to the return of capital, forces a misstatement of the amount of capital returned to the business.[80] The AER does not accept NT Gas's argument. The AER considers that nominal amount of depreciation is a function of the nominal regulated capital base, which ensures that the total amount of depreciation for an asset in real terms is equal to capex on that asset over the life of the asset. The AER further considers that while NT Gas indexed the capital base on actual inflation, it should also update the forecast depreciation using actual inflation.

[

c-i-c

.]

The result of the AER calculation is that NT Gas's opening capital base is reduced by $10.5 million ($2010–11) compared to its revised access arrangement proposal. The AER's adjustment to NT Gas's revised opening capital base is greater than the reduction proposed in the draft decision which was $0.8 million ($2010–11). This is due to the lower amount of depreciation used by NT Gas to roll-forward the capital base in its revised access arrangement proposal, and the adjustment to the nominal forecast depreciation figures [c-i-c]. Table 3.7 sets out the AER approved and NT Gas's proposed depreciation amounts for the earlier access arrangement period.

Table 3.7: Approved depreciation and the NT Gas's proposed for the earlier access arrangement period ($m, nominal)

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
AER approved straight line depreciation	18.5	20.2	21.8	23.6	25.9	18.5	16.3	16.7	17.2	17.7
NT Gas revised depreciation	18.3	19.5	20.9	22.4	24.2	17.6	15.5	15.8	16.2	16.5

Source: NT Gas, *Revised access arrangement submission*, May 2011, p. 16, AER Analysis.

3.4.1.3 Adjustment to the capital base for inflation

The AER considers the opening capital base figures for 2010–11 must be updated to take into account the latest inflation figures available from the Australian Bureau of Statistics (ABS). The forecast inflation for 2010–11 of 2.57 per cent has been updated

[80] NT Gas, *Revised access arrangement submission*, May 2011, pp. 12–13.

for actual inflation of 3.33 per cent. The effect of the update for actual inflation for 2010–11 resulted in an increase in the indexation component of the opening capital base from $2.7 million to $3.5 million (nominal). Therefore, the AER has revised the value of the opening capital base and proposes the revisions outlined in section 3.5.

3.4.1.4 Summary on the opening capital base

The AER considers that NT Gas's proposed opening capital base is not consistent with r. 77(2) or r. 74(2) of the NGR. Based on the adjustments to capex, deprecation and inflation in the earlier access arrangement period, the AER has calculated the opening capital base to be $92.1 million (nominal) as at 30 June 2011. The AER proposes to revise the opening capital base as set out in revision 3.2.

3.4.2 Projected capital base

In its draft decision, the AER did not accept NT Gas's forecast capex for the access arrangement period. The AER approved $13.9 million forecast capex over the access arrangement period, 3.5 per cent less than that proposed by NT Gas in its December 2010 access arrangement proposal. This reduction reflected adjustments to NT Gas's proposed real labour cost escalators and project management costs, which the AER considered were not justified.[81]

In its revised access arrangement proposal, NT Gas proposed $40.7 million in forecast capex over the access arrangement period. This forecast represents a 190 per cent increase in the capex forecast compared to those proposed in NT Gas's December 2010 access arrangement proposal and was foreshadowed by NT Gas prior to the draft decision. NT Gas has also provided additional information in support of project management costs and real cost escalators in its revised access arrangement proposal.

The AER considers NT Gas's revised capex forecasts should not be accepted. The amendments to the proposed revised capex program must be limited to those necessary to address matters raised in the draft decision and are therefore not consistent with r. 60(2) of the NGR. The AER also does not accept NT Gas's estimation of costs associated with real labour cost escalators as they do not represent the best forecast or estimates possible in the circumstances.[82] However, in light of new information, the AER considers that the project management costs can now be accepted. Overall, the AER accepts forecast capex of $21.0 million, 48 per cent less than the revised forecast proposed by NT Gas.

In addition, the AER requires that forecast deprecation be used to roll forward the capital base when the access arrangement is next revised. Further, the AER requires the adjustment of the capital base for updated inflation. As a result, the AER proposes a closing capital base of $102.2 million (nominal) compared to NT Gas's proposed $130.1 million (nominal). The AER's consideration of these issues are set out below.

3.4.2.1 Changes to enhanced integrity program

In its December 2010 access arrangement proposal, NT Gas proposed capex forecasts relating to the enhanced integrity program of $18.8 million ($2010–11). Around $10.7

81 AER, *Draft decision*, April 2011, pp. 43–44.

82 NGR, r. 74(2)(b).

million of this amount was expected to be incurred in 2010–11, the final year of the earlier access arrangement period.

On 14 January 2011, the AER received a report from its consultant, Wilson Cook, assessing NT Gas's proposed expenditure. The report included an assessment in relation to the enhanced integrity program.[83]

On 31 January 2011, the AER emailed NT Gas seeking clarification on a range of issues. These mainly dealt with requests for updates of actual expenditure. The only clarification sought in relation to forecast costs of the enhanced integrity program was:

> *Some of the integrity projects (including the Channel Island Piggability project) are continuing from the earlier access arrangement period into the access arrangement period. Can NT Gas provide a cost breakdown of the Channel Island Piggability project forecast for the access arrangement period?*[84]

On 14 February 2011, the deadline for public submissions relating to NT Gas's access arrangement proposal passed.

On 25 February 2011,[85] NT Gas proposed (in preliminary form) significant revisions of $37.8 million ($2009–10) to the forecast cost of the enhanced integrity program. [86] On 18 March 2011 NT Gas provided the revisions in a more detailed form. NT Gas has submitted that these should be considered as revisions to NT Gas's access arrangement proposal. It points out that the NGR provides:

> A service provider may, with the AER's consent, revise a full access arrangement proposal even though the initiating notice has been published.[87]

NT Gas further submitted:

> It would be an odd outcome indeed if, in direct response to an information request from the AER, a service provider revised their proposal, and the AER did not consent to such a revision.[88]

As a result, NT Gas submitted that, for the purposes of the draft decision, the access arrangement proposal was that which NT Gas submitted in December 2010, as revised by the February and March 2011 revisions.[89]

The AER disagrees with NT Gas's submission. It is true that the AER's 31 January 2011 email was an information request. However, it did not invite revisions to NT Gas's access arrangement proposal. As can be seen from the extract above, the 31 January 2011 email was a request for further detail relating to proposals already submitted as part of the December 2010 access arrangement proposal.

---

83 Wilson Cook, *Review of Expenditure in Relation to the Amadeus Gas Pipeline*, 14 January 2011.

84 AER, Email to NT Gas, *Follow up questions to the information session (28/01)*, 31 January 2011,' p. 2

85 NT Gas, Email to AER, AER.NTGAS.15-18 - Update and details on special projects, 25 February 2011.

86 NT Gas, Email to AER, *NT Gas submission on AA revision proposal - revised capex*, 18 March 2011.

87 NGR, r. 58(3).

88 APTNT, *Submission to the AER*, 24 June 2011, p. 2.

89 APTNT, *Submission to the AER*, 24 June 2011, p. 2.

Regardless, as NT Gas points out, the NGR requires that NT Gas seek consent from the AER to revise an access arrangement proposal. The AER gave no such consent. The AER accepts that it must not unreasonably withhold consent. However, for the reasons set out in the draft decision, the AER considered that it was not unreasonable to withhold consent in these circumstances.[90] As a result, NT Gas's unamended December 2010 access arrangement proposal was the access arrangement proposal for the purposes of the draft decision.

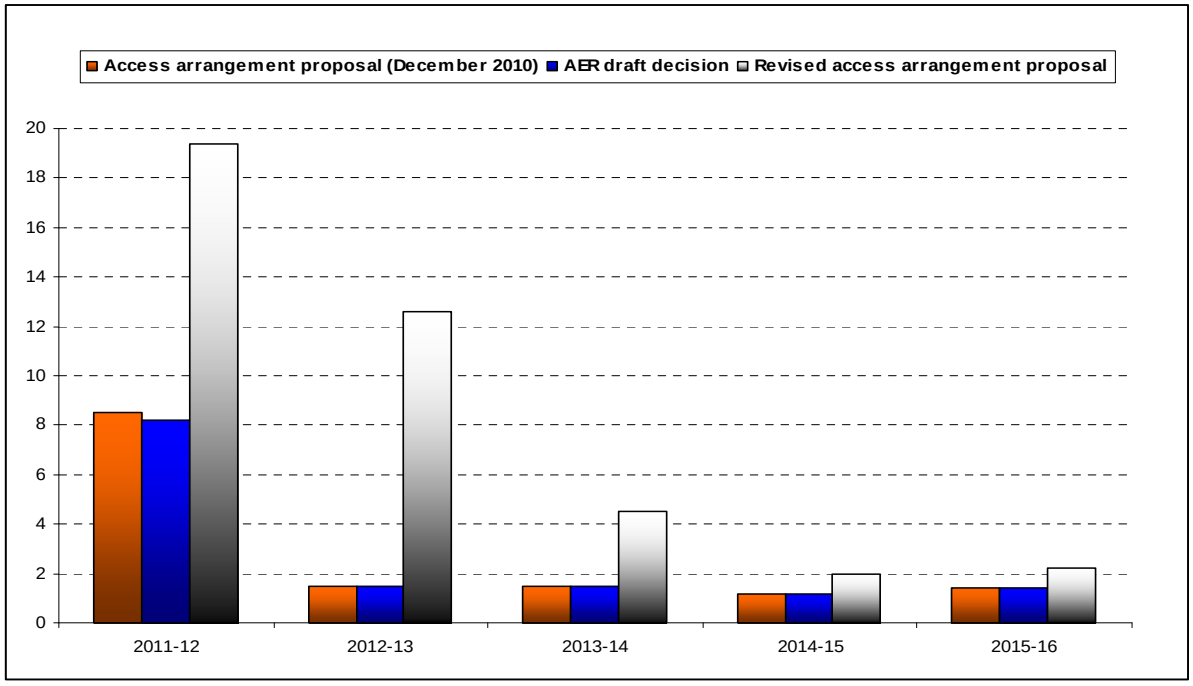
In the draft decision, the AER largely accepted the capex forecasts proposed by NT Gas in its December 2010 access arrangement proposal but required a number of adjustments to be made to project management costs and real labour cost escalation.[91] As a result, the AER approved $13.9 million forecast capex for the access arrangement period, 3.5 per cent less than proposed by NT Gas.

In its revised access arrangement proposal, NT Gas has proposed a forecast capex of $40.7 million (2010–11), 190 per cent higher than originally proposed by NT Gas in December 2010. The increase reflects an additional attempt by NT Gas to include the reforecast costs of its enhanced integrity program, which makes up around 98 per cent of NT Gas forecast capex in the access arrangement period. NT Gas revised its forecast cost of the enhanced integrity program to $39.7 million from $18.8 million ($2010–11). Figure 3.4 shows NT Gas's forecast capex proposed in the revised access arrangement proposal compared to the forecast capex proposed in its December 2010 access arrangement proposal and to the draft decision.

90 AER, *Draft decision*, April 2011, p. 42-43.

91 AER, *Draft decision*, April 2011, pp. 37–45.

Figure 3.4: NT Gas's forecast capex compared to the draft decision ($m, real 2010–11)



Source: NT Gas, *Access arrangement submission*, December 2010, pp. 81–81, 89; NT Gas, *Revised access arrangement submission*, May 2011, p. 27; AER, *Draft decision*, April 2011, p. 50.

The AER notes that the NGR permits a service provider to propose additions or other amendments to its access arrangement proposal, following a draft decision. However, this is limited. The amendments must be "*necessary to address matters raised in the access arrangement draft decision unless the AER approves further amendments*".[92]

The AER considers that NT Gas's proposed amendments relating to the enhanced integrity program are not necessary to address matters raised in the draft decision. In considering what would constitute a matter raised in the draft decision, the AER has considered the legislative framework. Rule 59 of the NGR sets out the AER's task when making a draft decision. It makes no reference to a draft decision raising matters. Rather, r. 59 of the NGR requires the AER to "indicate… the nature of the amendments that are required in order to make the proposal acceptable to the AER." It seems appropriate for the reference in r. 60 of the NGR to "matters raised in the draft decision" to be interpreted in light of this task. As a result, it seems that the reference to "matter" in r. 60 of the NGR, is a reference to those matters which the AER indicates in the draft decision are in need of amendment. On this view, if the AER does not indicate the need for an amendment, no matter has arisen.

Also, this interpretation seems to have some consistency with the broader legislative framework. Part 8 of the NGR includes provisions which:

a. set out detailed requirements for access arrangement information that must be submitted together with the access arrangement proposal[93]

92 NGR, r. 60(2).

93 NGR, Part 8, Division 2.

b. require the AER's draft decision to specify the nature of amendments required[94]

c. attempt to limit amendments to matters raised in the draft decision.[95]

These provisions seems to indicate a desire for the decision making process to go through stages of filtering issues. It seems to encourage service providers to raise all necessary issues at the start of the process (in their access arrangement proposal and access arrangement information). Any revisions after that point, require the AER's consent.[96] The AER then assesses the material provided, consultants' reports and submissions, and makes a draft decision. All matters that the AER accepts in the draft decision are settled at that point and cannot be revisited (hence, the limitation in r. 60(2) of the NGR). Only those matters which are still in contention, or which the AER allows to be amended, continue to be considered. The final decision resolves these issues.

As mentioned above, the AER largely accepted the capex forecasts proposed by NT Gas in its December 2010 access arrangement proposal. The AER did not require any amendments relating to the scope or costs of the enhanced integrity program. As a result, the AER considers that no matter has been raised in the draft decision. In turn, the AER considers that NT Gas's proposed revisions relating to the enhanced integrity program are not necessary to address a matter raised in the draft decision.

Despite the above, the AER has discretion to approve further amendments that go beyond matters raised in the draft decision. The AER regularly exercises this discretion to deal with matters such as updated information about inflation figures, revised forecasts of economic growth or commodity prices used to determine real cost escalation. This type of updated information is typically accepted as it represents the best available information on specific parameters and, in the AER's view, should be incorporated into a final decision.

However, the AER considers that the forecast capex submitted by NT Gas in its revised access arrangement proposal goes well beyond amendments to include updated information. Rather it goes to the scale and scope of the proposed capex program which have changed substantially. It appears that the main reason for the amendment relates to NT Gas deciding to undertake a review of its capex program. NT Gas indicated that it had:

> …appointed a special project manager [to undertake] a detailed review of all projects, including scope and delivery timetables, and developed a comprehensive plan for delivery of the projects including detailed costings.[97]

Another reason the AER might accept further amendments to an access arrangement proposal relates to changed circumstances. The example in r. 60(2) of the NGR states:

> *Example:*

94 NGR, r. 59.

95 NGR, r. 60.

96 NGR, r. 58(3).

97 NT Gas, Email to AER, *NT Gas submission on AA revision proposal - revised capex*, 18 March 2011.

> *The AER might approve amendments to the access arrangement proposal to deal with a change in circumstances of the service provider's business since submission of the access arrangement proposal.*

The AER has considered the submissions from NT Gas on this issue, in order to determine what, if any, changes occurred over the course of this access arrangement review. The AER considers there has been no change in the circumstances of the service provider's business since the submission of NT Gas's access arrangement proposal that would warrant the revisions that have been proposed by NT Gas in its enhanced integrity program.

The AER also notes that there have, and continue to be, other avenues available for NT Gas to ventilate its access arrangement proposal for significant revisions to the enhanced integrity program. Should NT Gas consider its access arrangement as proposed is substantially flawed, due to the forecasts being substantially out of date and therefore not meeting the expenditure requirements of the business, it is open to NT Gas to submit a new access arrangement proposal and commence the review process anew. In doing so this would provide the AER, its consultants and interested parties with the opportunity to consider the access arrangement proposal in line with the consultation process that is embodied in the procedure for a full access arrangement review set out in the NGR. The AER considers that if NT Gas considers its capex forecast are substantially deficient, recommencing the review would also provide for improved procedural fairness for all interested parties.

On this basis, the AER has decided not to exercise its discretion to allow further amendments in relation to the enhanced integrity program.

In making its final decision, therefore, the AER has considered the forecast capex program as it stood in NT Gas's access arrangement proposal in December 2010. The AER's decision, therefore, reflects the consideration made in the draft decision.[98] However, the AER will allow the capex forecasts to be adjusted to include the full enhanced integrity program as it was initially proposed in December 2010. At that time, the program was expected to take place over two years, 2010–11 and 2011–12. As the program was delayed, around $6 million of expenditure that was expected to be incurred in 2010–11 will be added to forecast expenditure in 2011–12. In the draft decision, the AER had excluded this amount. At the time of making its draft decision, the AER anticipated NT Gas would have included this amount in its revised access arrangement proposal to reflect the revised timing of the program put forward in its December 2010 access arrangement proposal. The AER is satisfied that these costs would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice and are justifiable.[99]

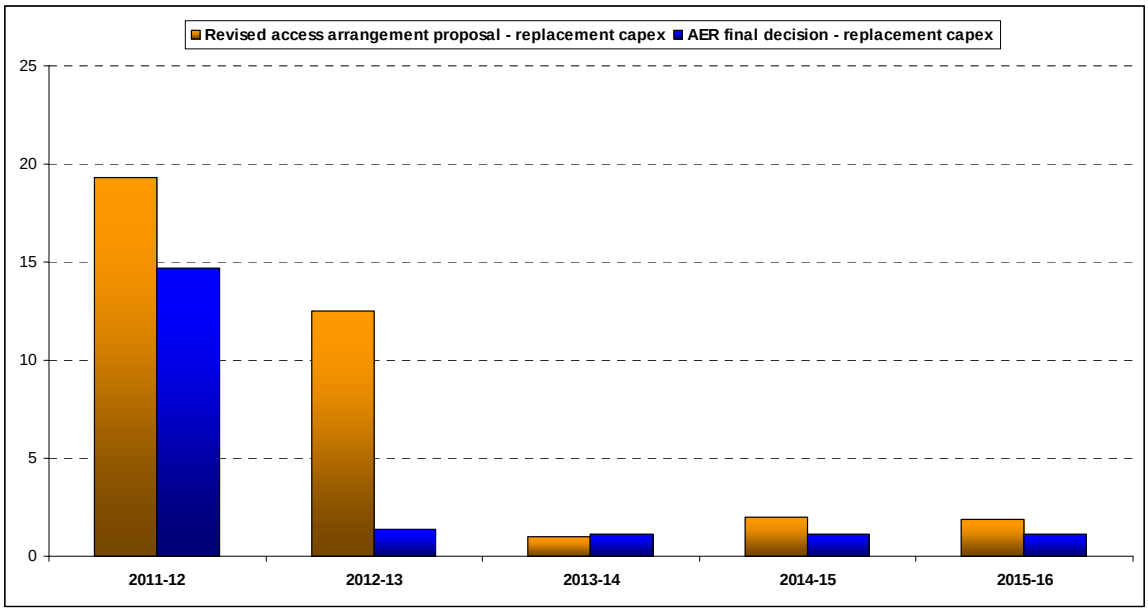
In total, the AER accepts forecast replacement capex of $19.9 million ($2010–11), a decrease of $19.8 million ($2010–11), 50 per cent less than that proposed by NT Gas in its revised access arrangement proposal. This forecast includes the revised real labour cost escalators (see section 3.4.2.3). Overall, the AER's approved forecast capex represents an increase of 51 per cent on the total amount accepted by the AER

98 AER, *Draft decision*, April 2011, pp. 42–43.

99 NGR, r. 79(1).

in its draft decision. A comparison of the proposed replacement capex and that approved by the AER are shown in figure 3.5 below.

Figure 3.5: NT Gas's forecast replacement capex compared to the AER's final decision ($m, real, 2010–11)



Source: NT Gas, *Revised access arrangement submission*, May 2011, p. 27; AER analysis.

3.4.2.2 Non-systems capital expenditure

In the draft decision, the AER accepted a forecast of $1.1 million ($2010–11) for non-systems capex for the access arrangement period. In the revised access arrangement proposal, NT Gas identified an error in its forecast for non-systems capex.[100] The AER accepts the majority of NT Gas's forecast non-systems capex. However, the AER requires NT Gas to make adjustments for real labour cost escalators and inflation. The AER considers that NT Gas's revised real labour cost escalators have not been made on a reasonable basis and do not represent the best forecast or estimate possible under r. 74 of the NGR. The AER's consideration of NT Gas's revised real labour cost escalators is discussed in appendix B of the final decision.

3.4.2.3 Other adjustment made to the projected capital base

Project management costs

The AER accepts NT Gas's forecast project management costs set out in its December 2010 access arrangement proposal. It considers that they are costs which would be incurred by a prudent service provider acting efficiently, as required by r. 79(1)(a) of the NGR. The AER also considers that the project management costs proposed by NT Gas represent the best estimate possible estimated in the circumstances as required by r. 74(2)(b) of the NGR.

In the draft decision, the AER raised concerns that insufficient information was provided to support NT Gas's proposed forecast.[101] The AER considered that due to a

100 NT Gas, *Revised access arrangement submission*, May 2011, p. 2.

101 AER, *Draft decision*, April 2011, p. 44.

lack of substantiation, the proposed project management costs were not made on a reasonable basis and did not represent the best forecast or estimate possible under r. 74 of the NGR. It also considered that this expenditure did not meet the capex criteria under r. 79 of the NGR. Both NTMEU and PWC have submitted agreement with the draft decision assessment of the proposed project management fees.[102]

In its revised access arrangement proposal, NT Gas provided details of the categories of costs included in the project management costs, as set out in table 3.5 in section 3.2.2.1. Further, NT Gas submitted that its direct project management costs are a necessary part of the costs of delivering the enhanced integrity program.[103]

The AER accepts that NT Gas's forecast project management costs are necessary costs for the delivery of the enhanced integrity program. Further, the AER accepts that the enhanced integrity program will be carried out by a special project team under a specialised project management structure. NT Gas has submitted that the special project team includes a dedicated project manager, contract staff in engineering design and management and document control to oversee and undertake projects within the structure.[104] The AER considers that the project management costs as set out in the NT Gas December 2010 access arrangement proposal are a necessary component for the delivery of the enhanced integrity program. The AER also considers that NT Gas has provided sufficient justification as to the inclusion of the project management costs in its proposed forecast capex. As a result, the AER considers that NT Gas's proposed project management costs are the best estimates possible in the circumstances as required by r. 74(2)(b) of the NGR.

Cost escalators

The AER's consideration of NT Gas's revised real labour cost escalators is discussed in appendix B of the final decision. For the reasons outlined in appendix B, the AER is not satisfied that the revised real labour cost escalators applied to NT Gas's forecast capex comply with the requirements of r. 79 and r. 74(2) of the NGR. As a result the AER proposes that NT Gas amend its forecast capex by applying the real labour cost escalators set out in table B.3 in appendix B.

3.4.2.4 Conclusion on capital expenditure

In its revised access arrangement proposal, NT Gas did not accept the AER's amendments to forecast capex as required in the draft decision.[105] The AER considers that the forecast capex accepted in the draft decision differed only marginally from NT Gas's December 2010 proposed expenditure. As discussed in section 3.4.2.1 the AER considers that NT Gas's forecast capex in its revised access arrangement is not necessary to address a matter raised in the draft decision. Further, the AER has decided not to exercise its discretion to allow further amendments in relation to this matter.

102 PWC, *Submission to the AER*, June 2011, p. 2, NTMEU, *Submission to the AER*, June 2011, pp. 14–17.

103 NT Gas, *Revised access arrangement submission*, May 2011, p. 11.

104 NT Gas, *Revised access arrangement submission*, May 2011, p. 24.

105 AER, *Draft decision*, April 2011, p. 50.

Table 3.8 shows the revised capex proposed by NT Gas compared with the capex which the AER considers satisfies the new capex criteria of the NGR.[106]

Table 3.8: NT Gas's revised and approved capital expenditure for 2011–2016 ($m, real, 2010–11)

	2011–12	2012–13	2013–14	2014–15	2015–16	Total
Expansion						
NT Gas proposed	0.0	0.0	0.0	0.0	0.0	0.0
AER approved	0.0	0.0	0.0	0.0	0.0	0.0
Replacement						
NT Gas proposed	19.3	12.5	4.0	1.9	1.9	39.7
AER approved	15.1	1.4	1.1	1.1	1.1	19.9
Non-systems						
NT Gas proposed	0.1	0.1	0.4	0.1	0.3	1.1
AER approved	0.1	0.1	0.4	0.1	0.3	1.1
Total capital expenditure						
NT Gas proposed	19.4	12.6	4.6	2.0	2.2	40.7
AER approved	15.3	1.5	1.6	1.2	1.4	21.0

Source: NT Gas, *Revised access arrangement submission*, May 2011, p. 27; AER analysis.

Therefore, the AER proposes to revise forecast capex as set out in revision 3.3.

3.4.2.5 Depreciation

The AER does not accept NT Gas's forecast depreciation allowance. The AER's assessment of NT Gas's forecast depreciation allowance in its revised access arrangement proposal is discussed in chapter 4 of the final decision. Table 3.9 reproduces the conclusions from chapter 4 below.

106 NGR, r. 79.

Table 3.9 AER approved depreciation for the access arrangement period ($'000, nominal)

	2011–12	2012–13	2013–14	2014–15	2015–16
Straight-line depreciation	5093	5454	5648	5857	3417
Inflationary gain	2349	2692	2663	2632	2585
Regulatory depreciation	2744	2763	2985	3225	832

Source: AER analysis.

3.4.2.6 Adjustment to the capital base for inflation

NT Gas has accepted the forecast inflation rate proposed in the draft decision and has incorporated this forecast in its revised access arrangement proposal.[107] However, as noted in the draft decision, the AER bases the forecast inflation on the most up to date information. As discussed in chapter 5 the AER calculates a forecast inflation rate over the access arrangement period of 2.55 per cent.

3.4.2.7 Summary of the projected capital base

The AER has considered the components of NT Gas's proposed projected capital base. Given the revisions required to NT Gas's forecast capex, depreciation and adjustment of the capital base for inflation, the AER considers that NT Gas's projected capital base does not comply with r. 60(2), r. 74(2) and r. 78 of the NGR. The AER proposes to revise the projected capital base as set out in revision 3.4.

3.4.3 Calculation of the opening capital base at the next access arrangement period

As outlined in the draft decision, the AER considers NT Gas's method of calculating depreciation for rolling forward the capital base from one access arrangement period to the next is consistent with r. 90 of the NGR.[108]

3.5 Conclusion

Opening capital base

The AER does not approve the opening capital base proposed by NT Gas for the access arrangement period as it does not comply with r. 77(2) of the NGR. The AER's proposed revisions 3.1 and 3.2 are set out below.

Projected capital base

The AER does not approve the proposed projected capital base proposed by NT Gas as it does not comply with r. 60(2) and r. 78 of the NGR. The AER considers that it is not necessary to address a matter raised in the draft decision. Further, the AER has

107 NT Gas, *Revised access arrangement submission,* April 2011, p. xi.

108 AER, *Draft decision,* April 2011, p. 92.

decided not to exercise its discretion to allow further amendments in relation to this matter. The AER's proposed revisions 3.3 and 3.4 are set out below.

Closing capital base for the access arrangement period

The AER approves the NT Gas's proposed estimation of depreciation on the basis of forecast capex for establishing NT Gas's opening capital base for the next access arrangement period as it complies with r. 90 of the NGR.

3.6 Revisions

The AER proposes the following revisions to:

Revision 3.1: the revised access arrangement and access arrangement information to delete Table 3.7 and replace it with the following:

Table 3.10 Opening capital base for the earlier access arrangement period ($m, nominal)

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Opening capital base	228.5	216.9	204.6	189.9	171.2	150.9	136.4	126.6	113.7	100.5
plus net capex	0.2	0.4	3.0	0.4	0.5	0.3	0.7	0.6	0.7	6.0
less forecast disposals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
less depreciation	18.5	20.2	21.8	23.6	25.9	18.5	16.3	16.7	17.2	17.7
plus indexation	6.7	7.5	4.1	4.5	5.1	3.7	5.8	3.1	3.3	3.3
plus reused redundant assets	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Closing capital base	216.9	204.6	189.9	171.2	150.9	136.4	126.6	113.7	100.5	92.1

Revision 3.2: the revised access arrangement information to delete Table 3.3 and replace it with the following, and make all other necessary changes so as to be consistent with the following:

Table 3.11: Capital expenditure by asset class over the earlier access arrangement period ($'000, 2010–11)

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	Total
Pipeline	22	196	0	0	0	152	0	267	410	3019	4065
Compression	0	0	0	0	0	0	0	0	0	0	0
Meter stations	0	0	509	123	0	0	0	0	80	2276	2989
SCADA & Communications	2	2	2942	89	270	60	4	105	13	0	3487
Operation & Management Facilities	254	274	125	246	307	149	761	248	189	421	2973
Building	0	0	0	0	0	0	0	0	0	0	0
Total	278	471	3576	459	577	361	765	620	692	5716	13514

Revision 3.3: the revised access arrangement and revised access arrangement information to delete Table 3.11 and replace it with the following, and make all other necessary changes so as to be consistent with the following:

Table 3.12: Forecast capital expenditure by asset class over the access arrangement period ($m, 2010–11)

	2011–12	2012–13	2013–14	2014–15	2015–16	Total
Pipeline	14.5	0.9	1.0	0.8	0.9	18.2
Compression	0.0	0.0	0.0	0.0	0.0	0.0
Meter Stations	0.5	0.1	0.0	0.1	0.0	0.7
SCADA & Communications	0.1	0.3	0.5	0.1	0.4	1.4
Operation & Management facilities	0.1	0.1	0.1	0.1	0.1	0.6
Building	0.0	0.0	0.0	0.0	0.0	0.0
Total	15.3	1.5	1.6	1.2	1.4	21.0

Revision 3.4: the revised access arrangement information to replace table 3.13 and replace it with the following, and make all other necessary changes so as to be consistent with the following:

Table 3.13: Projected capital base for the access arrangement period ($m, real 2010–11)

	2011–12	2012–13	2013–14	2014–15	2015–16
Opening capital base	92.1	105.6	104.4	103.2	101.4
plus indexation	2.3	2.7	2.7	2.6	2.6
plus forecast capex	16.2	1.7	1.7	1.4	1.7
less regulatory depreciation	5.1	5.5	5.6	5.9	3.4
less forecast disposals	0.0	0.0	0.0	0.0	0.0
less forecast redundant assets	0.0	0.0	0.0	0.0	0.0
Closing capital base	105.6	104.4	103.2	101.4	102.2

4 Depreciation

The draft decision accepted NT Gas's proposed method of depreciation and standard asset lives for the access arrangement period. The draft decision also accepted NT Gas's proposed method of using forecast depreciation for rolling forward the capital base for the next access arrangement period. However, the AER did not approve NT Gas's remaining asset lives for some asset classes. The AER did not consider that the method used by NT Gas to calculate the remaining asset lives allowed for the depreciation of capex over the assets' economic lives. Therefore, the depreciation schedule proposed by NT Gas was not considered to be consistent with r. 89(1)(b) of the NGR. The AER did not accept the proposed forecast depreciation allowance due to changes in various factors that affected the capital base and the changes to remaining asset lives. In the draft decision, the AER calculated a forecast regulatory depreciation allowance of $14 million (nominal) based on the straight-line method for the access arrangement period.

In response, NT Gas did not accept various aspects of the draft decision that affected the capital base and the calculation of remaining asset lives, which impacts on the forecast regulatory depreciation allowance. The changes to the capital base, including the inflation adjustment of the roll forward of the capital base, are discussed in chapter 3 of the final decision. NT Gas proposed a revised forecast regulatory depreciation allowance of $17 million (nominal) over the access arrangement period.

The AER does not accept the forecast regulatory depreciation allowance proposed by NT Gas because the depreciation schedule does not satisfy r. 89(1)(b). The depreciation allowance is also impacted by changes the AER has made in relation to NT Gas's capital base as discussed in chapter 3. In considering the proposed changes to the capital base and remaining asset lives, the AER has calculated a total forecast regulatory depreciation allowance of $13 million (nominal) for the access arrangement period.

4.1 Regulatory requirements

NT Gas is required to provide a depreciation schedule that sets out the basis on which the assets constituting the capital base are to be depreciated for determining reference tariffs (r. 88(1) of the NGR). The schedule may consist of a number of separate schedules each relating to an asset or particular asset classes (r. 88(2) of the NGR).

Rule 89(1) of the NGR provides that the depreciation schedule should be designed:

(a) so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services; and

(b) so that each asset or group of assets is depreciated over the economic life of that asset or group of assets; and

(c) so as to allow, as far as reasonably practicable, for adjustment reflecting changes in the expected economic life of a particular asset, or particular group of assets; and

(d) so that (subject to rules about capital redundancy), an asset is depreciated only once (i.e. the amount by which an asset is depreciated

over its economic life does not exceed the value of the asset as at the time of its inclusion in the capital base (adjusted, if the accounting method approved by the AER permits, for inflation)); and

(e) so as to allow the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs.

Rule 89(2) states that compliance with r. 89(1) may involve the deferral of a substantial amount of depreciation.

Rule 89(3) of the NGR states that the AER's discretion under r. 89 of the NGR is limited.[109]

Rule 90 of the NGR requires that the access arrangement must contain provisions governing the calculation of depreciation for establishing the opening capital base for the next access arrangement period. The provisions must resolve whether depreciation of the capital base is to be based on forecast or actual capex.

Clause 5(1)(d) of schedule 1 of the NGR, requires the AER, in deciding whether to approve an access arrangement revision proposal from a transitional access arrangement, to take into account the depreciation schedule for the transitional access arrangement under section 8.32 of the Code.[110]

4.2 Revised access arrangement proposal

The draft decision accepted the proposed straight-line method and the use of standard asset lives to calculate forecast depreciation.[111] The draft decision also accepted NT Gas's proposed method of using forecast capex to calculate depreciation for establishing the opening capital base for the next access arrangement period.[112] However, the draft decision required that amendments be made to the opening values for the buildings and operation and management facilities asset classes. Further, the draft decision required changes to the proposed forecast depreciation allowance to take into account changes to the capital base and calculation of remaining asset lives.[113]

NT Gas accepted the AER's amendment to the opening value of the buildings asset class as at 1 July 2011. NT Gas has also accepted a subsequent adjustment to the opening value for the operation and management facilities asset class in line with the revised opening value of buildings.[114]

109 Under r. 40(2) of the NGR, limited discretion means the AER may not withhold its approval to an element of an access arrangement proposal that is governed by the relevant provision if the AER is satisfied that it complies with applicable requirements of the NGL, and is consistent with applicable criteria (if any) prescribed by the NGL.

110 This clause is also relevant if the AER makes its own proposal for revision of a transitional access arrangement under r. 63 or r. 64 of the NGR.

111 AER, *Draft decision*, April 2011, p. 55.

112 AER, *Draft decision*, April 2011, p. 55.

113 AER, *Draft decision*, April 2011, pp.59–60.

114 NT Gas, *Revised access arrangement submission*, May 2011, p. 35.

4.2.1 Remaining asset lives

NT Gas did not accept the AER's amendment to the remaining asset lives.[115] NT Gas proposed that amendment 3.1 to the historical return of capital component and the forecast capex for 2010–11 have impacted on the calculation of remaining asset lives.[116] NT Gas proposed that the AER's method in calculating the weighted average remaining asset lives does not accurately represent the remaining lives of the residual assets.[117] It submitted that the AER calculated the weighted average remaining asset lives based on the forecast amount and timing of asset additions in the earlier access arrangement, rather than the actual capex.[118]

NT Gas also submitted it tested the reasonableness of its proposed remaining asset lives and the AER's method of calculating the weighted average remaining life of an asset.[119] NT Gas tested this for each asset class by dividing the opening asset value by the annual depreciation amount for that asset class.[120] NT Gas submitted that the difference between the remaining asset lives based on the test of reasonableness, the AER's weighted average remaining lives method, and NT Gas proposed remaining asset lives was not significant.[121]

Table 4.1 compares the remaining asset lives approved in the draft decision and those proposed by NT Gas in the December 2010 access arrangement proposal and the revised access arrangement proposal.

Table 4.1: AER's draft decision remaining asset lives and NT Gas's proposed remaining asset lives (years)

Asset class	NT Gas access arrangement proposal	Draft decision	NT Gas revised access arrangement proposal
Pipeline	58.7	54.8	56.6
Compression	20.0	20.0	20.0
Meter stations	31.0	33.4	28.0
SCADA and communications	6.4	6.4	6.4
Operation and management facilities	4.0	4.0	4.0
Building	36.0	36.0	36.0

Source: NT Gas, *Access arrangement submission*, December 2010, p. 94;
NT Gas, *Revised access arrangement submission*, May 2011, p. 33;
AER, *Draft decision*, April 2011, p. 57.

115 NT Gas, *Revised access arrangement submission*, May 2011, pp. 32–33.

116 NT Gas, *Revised access arrangement submission*, May 2011, p. 32.

117 NT Gas, *Revised access arrangement submission*, May 2011, p. 32.

118 NT Gas, *Revised access arrangement submission*, May 2011, p. 32.

119 NT Gas, *Revised access arrangement submission*, May 2011, p.33.

120 NT Gas, *Revised access arrangement submission*, May 2011, p.33.

121 NT Gas, *Revised access arrangement submission*, May 2011, p.33.

4.2.2 Forecast depreciation

Due to revisions to the projected capital base (including forecast inflation) and the remaining asset lives, NT Gas recalculated the forecast regulatory depreciation allowance from that determined by the AER in the draft decision. Table 4.2 sets out NT Gas's revised forecast depreciation for the access arrangement period.

Table 4.2: NT Gas's revised forecast regulatory depreciation allowance ($m, nominal)

	2011–12	2012–13	2013–14	2014–15	2015–16
Regulatory depreciation[a]	7.2	2.8	3.0	3.2	0.8

Source: NT Gas, *Revised access arrangement information*, May 2011, p.11.
a: Regulatory depreciation is straight-line depreciation less the inflationary gain (negative depreciation) on the capital base.

4.3 Summary of submissions

No submissions were made on NT Gas's forecast depreciation allowance.

4.4 AER's consideration

The AER does not accept the forecast regulatory depreciation allowance proposed by NT Gas. This is primarily due to NT Gas's proposed method of calculating the remaining asset lives, indexation applied to the opening capital base, and forecast capex. The AER's consideration of NT Gas's remaining asset lives and forecast regulatory depreciation allowance is discussed below.

The AER acknowledges that some of the remaining asset lives proposed by NT Gas in the revised access arrangement proposal are similar to those calculated by the AER in the draft decision. However, the AER does not accept the method proposed by NT Gas to calculate the remaining asset lives for pipeline, compression, meter stations and SCADA asset classes. NT Gas has not applied any depreciation to the actual capex on these asset classes during the earlier access arrangement period. The AER considers that a consequence of NT Gas's method to calculate the remaining asset lives of the above asset classes is that these assets are not depreciated over their economic lives as required by r. 89(1)(b) of the NGR.

The AER has corrected the methodology used to calculate the remaining asset lives for the compression and SCADA asset classes. NT Gas did not propose any material difference to these remaining asset lives. This was due to the relatively small amount of capex attributed to the SCADA assets, and none for compression assets over the earlier access arrangement period. As a consequence, the AER also does not propose any adjustments to the remaining asset lives for these assets. However, the AER does propose revisions to the remaining assets lives for pipelines and meter stations asset classes.

NT Gas proposed an alternative method to estimate the remaining asset lives for buildings and operation and management facilities asset classes. In the draft decision, the AER accepted NT Gas's estimate of remaining asset lives for each of these asset classes. The AER considered the method proposed by NT Gas as being consistent with r. 89(1)(b) of the NGR. NT Gas accepted the amendment to the opening value of

buildings as at 1 July 2011 contained in the draft decision. The draft decision also accepted NT Gas's proposed method to roll forward the capital base using forecast depreciation for the next access arrangement period as being consistent with r. 90 of the NGR.[122] The AER's discussion in relation to the opening value of buildings is further discussed in section 4.5.3 of the draft decisions.

4.4.1 Remaining asset lives

The AER has reviewed the roll-forward model (RFM) submitted by NT Gas as part of its revised access arrangement proposal.[123] NT Gas has submitted that it has maintained its method to calculate the remaining life of the various asset classes as proposed in the December 2010 access arrangement proposal.[124]

NT Gas proposed a weighted average method to calculate the remaining asset lives as at 1 July 2011 for pipelines, compression, meter stations and SCADA.[125] The AER considers that NT Gas's calculation of a weighted average remaining life does not take into account the depreciation of certain assets acquired during the earlier access arrangement period. In the draft decision, the AER considered that NT Gas's method was not consistent with r. 89(1)(b) of the NGR.

Further, in the draft decision, the AER identified two other issues that impacted on NT Gas's proposed remaining asset lives. These were:

- the reduction of forecast capex for 2010–11 for pipelines and meter stations. This reduced the weighting of 2010–11 capex in the remaining life calculation

- NT Gas incorrectly calculated the remaining life of meter station capex. It had used a standard asset life of 35 years instead of the approved standard asset life of 50 years.[126]

These issues do not appear to have been addressed by NT Gas in the revised access arrangement proposal. The AER maintains that the correction of these issues is necessary to amend the remaining asset lives as proposed in the draft decision.[127]

The AER considers that the *weighted average remaining life* method better reflects the useful life of the mix of assets within an asset class. However, circumstances may prevent a detailed application of this method. In the present circumstances the data is aggregated to some degree.[128] However, NT Gas's proposed weighted average method does not take into account the disaggregated data that exists. In particular, it

122 AER, *Draft decision*, April 2011, p. 55.

123 NT Gas, *Revised access arrangement submission*, May 2011, p.143, attachment A.1 (confidential).

124 NT Gas, *Access arrangement submission*, December 2010, p.171, attachment E-1 (confidential).

125 NT Gas, *Access arrangement submission*, December 2010, p.171, attachment E-1 (confidential).

126 AER, *Draft decision*, April 2011, pp. 56–57.

127 AER, *Draft decision*, April 2011, p. 57.

128 In 2002 ACCC final decision, the ACCC used accelerated depreciation to address the issue of asset stranding. The annual depreciation of certain asset classes (pipelines and compression facilities)was calculated as the difference between the closing capital base and opening capital base, divided over 10 years of the earlier access arrangement period. As a result, the annual depreciation was effectively an aggregate of the depreciation on the initial capital base and the capex in each year over the earlier access arrangement period.

does not take into account the capex spent on different assets over the earlier access arrangement period, indicating that the assets have not been depreciated over this period. The AER does not consider that this is consistent with r. 89 of the NGR and that forecast depreciation (adjusted for actual inflation) should be applied across all asset classes as discussed below.

In the draft decision, the AER applied the weighted average method to calculate the remaining asset lives allowed for the depreciation of capex during the earlier access arrangement period, in accordance with r. 89 of the NGR. The AER considered that the remaining asset lives proposed by NT Gas for pipelines and meter stations were not consistent with r. 89(1)(b) of the NGR, and therefore required NT Gas to make amendment 4.2. While the AER did not accept the method of calculating the remaining asset lives, the AER did not require adjustments to the proposed remaining asset lives for compression and SCADA asset classes.[129] This was because the remaining asset lives of these asset classes did not vary significantly between those calculated in the draft decision and those proposed by NT Gas in December 2010.[130]

In its revised access arrangement proposal, NT Gas proposed that the AER's weighted average method of calculating the remaining asset lives did not accurately represent the remaining lives of the residual assets.[131] As discussed in the draft decision, the ACCC's 2002 final decision accepted NT Gas's proposal to accelerate depreciation to address the risk of asset stranding.[132] The accelerated annual depreciation calculated by the ACCC was effectively an aggregate of the depreciation attributable to both the initial capital base and forecast capex. The AER considers that NT Gas's proposed method to calculate the weighted average remaining asset lives does not take into account the depreciation of capex over the earlier access arrangement period. NT Gas's proposed method results in capex associated with the affected asset classes not depreciating until 1 July 2011. The AER considers that NT Gas's proposed method does not result in appropriate remaining asset lives because it does not depreciate assets over its economic life as required under r. 89(1)(b) of the NGR.

The AER took into account the forecast nominal straight-line depreciation against the initial capital base and actual capex in calculating the remaining asset lives for the proposed asset classes.[133] The allocation of forecast depreciation (adjusted for actual inflation) to each asset class conducted as follows:

- for each asset class calculate the proportion of the initial capital base and forecast capex that contributes to the total regulatory asset base in the relevant year of the earlier access arrangement period

129 AER, *Draft decision*, April 2011, p. 57.

130 AER, *Draft decision*, April 2011, p. 57.

131 NT Gas, *Revised access arrangement submission*, May 2011, p. 32.

132 ACCC, *Final decision*, December 2002, p. 66.

133 Section 8.9(c) of the Code required that under a cost of service methodology, the capital base at the commencement of each access arrangement period (after the first) be determined based on the depreciation for the immediately preceding access arrangement review, or forecast depreciation. In the context of the roll forward of the capital base, the term forecast depreciation was used to define the amount of depreciation calculated as a function of forecast capex approved in the earlier access arrangement period.

- multiply the resulting proportions by the aggregate adjusted nominal straight-line depreciation to derive the amount of forecast depreciation to be allocated to the initial capital base and actual capex for each asset class.

The AER considers that the apportionment of depreciation using forecast capex described above is appropriate. Aside from the adjustment (and the adjustment to forecast depreciation for actual inflation discussed in chapter 3) the AER's method is consistent with NT Gas's proposed method for calculating the weighted average remaining asset lives.

The AER considers that NT Gas's proposed method to calculate the remaining asset lives means that the above mentioned asset classes are not depreciated over their economic lives as required by r. 89(1)(b) of the NGR. The AER considers that its methodology to calculate the remaining asset lives ensures that each class of assets are depreciated over their economic life is consistent with r. 89(1)(b) of the NGR.

The AER's approved weighted average remaining asset lives is shown in table 4.3.

Table 4.3 AER approved opening asset values and remaining lives ($m nominal)

Asset class	AER asset value	AER remaining life (years)
Pipeline	58.7	54.9
Compression	6.3	20.0
Meter stations	8.0	33.6
SCADA and communications	5.9	6.4
Operation and management facilities	9.3	4.0
Building	3.9	36.0

Source: AER analysis.

The AER notes that while its discretion is limited under r. 89 of the NGR, NT Gas's method of calculating the remaining asset lives is not consistent with the depreciation criteria under r. 89 of the NGR. Rule 40(2) of the NGR requires the AER to exercise its discretion to correct an inconsistency between the proposed depreciation schedule and the depreciation criteria. Therefore, the AER proposes to revise the remaining asset lives as set out in revision 4.1.

4.4.2 Forecast depreciation

The AER considers that NT Gas's revised regulatory depreciation allowance should be recalculated to address the AER's revisions to the capital base, up-to-date inflation indexation and the approved remaining asset lives. Regulatory depreciation is straight-line depreciation net of inflation indexation applied to the capital base for each year. The AER proposes to revise forecast depreciation as set out in revision 4.2.

Table 4.4: AER's forecast depreciation for the access arrangement period ($m, nominal)

	2011–12	2012–13	2013–14	2014–15	2015–16
Straight-line depreciation	5.1	5.5	5.6	5.9	3.4
Indexation	2.3	2.7	2.7	2.6	2.6
Regulatory depreciation	2.7	2.8	3.0	3.2	0.8

Source: AER analysis.

The AER considers the use of straight-line depreciation proposed by NT Gas promotes the efficient growth in the market for reference services consistent with r. 89(1)(a) of the NGR. The AER also considers that NT Gas's depreciation schedule is consistent with r. 89(1)(d) of the NGR which requires that each asset is depreciated only once. No deferral of depreciation was proposed by NT Gas, and under r. 89(2) is not required in the present circumstances.

4.5 Conclusion

The AER considers that NT Gas's proposed method to derive the remaining asset lives of asset classes is not consistent with r. 89(1)(b) of the NGR. Although, for most asset classes this inconsistency does not significantly affect the proposed remaining values of the asset lives for pipelines and meter stations, there is a significant impact. Accordingly, the AER does not approve the depreciation schedule proposed by NT Gas for the access arrangement period as it does not comply with r. 89(1)(b) of the NGR.

Rule 40(2) of the NGR requires the AER to exercise its discretion to correct an inconsistency between the proposed depreciation schedule and the depreciation criteria under r. 89 of the NGR. On this basis, the AER requires revision to the depreciation schedule and the forecast regulatory depreciation allowance to take into account of the revisions made to the remaining asset lives, the opening capital base and forecast capex as discussed in chapter 3 of the final decision. Therefore the AER proposes to revise NT Gas's access arrangement proposal by making revisions 4.1 and 4.2.

4.6 Revisions

The AER proposes the following revision:

Revision 4.1: make all amendments necessary in the revised access arrangement and revised access arrangement information to take account of the AER's approved remaining lives and asset values for the asset classes of pipelines and meter stations as discussed in section 4.4.1 and shown in table 4.3.

Revision 4.2: the revised access arrangement and revised access arrangement information should be amended to reflect the forecast depreciation allowance in table 4.4.

5 Rate of return

The AER has rejected NT Gas's proposed rate of return[134] of 10.90 per cent as it is not commensurate with prevailing market conditions in the market for funds and the risks involved in providing reference services. A rate of return of 9.73 per cent is appropriate for the benchmark service provider. The AER has undertaken a number of reasonableness checks to confirm the rate of return it has proposed.

This chapter sets out the AER's consideration of the appropriate rate of return for NT Gas for the access arrangement period, and deals with issues raised in NT Gas's revised access arrangement proposal. These issues include the determination of the market risk premium (MRP), equity beta and debt risk premium (DRP). The AER's draft decision accepted NT Gas's proposed averaging period used to determine the risk free rate, gearing ratio and method of forecasting inflation, which were unchanged in its revised access arrangement proposal.

The AER has confirmed its draft decision on the parameters to determine the rate of return. The AER considers that the MRP, equity beta and DRP proposed by NT Gas were too high with respect to the risks involved in providing reference services under prevailing market conditions. The rate of return of 9.73 per cent proposed by the AER is based on the 20 day averaging period ending 1 April 2011.

5.1 Regulatory requirements

Rule 72(1)(g) of the National Gas Rules (NGR) requires that the access arrangement information for a full access arrangement proposal must include the proposed rate of return, the assumptions on which the rate of return is calculated and a demonstration of how it is calculated.

Rule 74 of the NGR requires that any forecast or estimate included in the access arrangement information be arrived at on a reasonable basis, be supported by a statement of the basis of that forecast or estimate, and represent the best forecast possible in the circumstances.

Rule 87(1) of the NGR requires that the rate of return on capital is to be commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services.

Rule 87(2) of the NGR requires that in determining a rate of return on capital, it will be assumed that the service provider meets benchmark levels of efficiency, uses a financing structure that meets benchmark standards—as to gearing and other financial parameters—for a going concern, and reflects in other respects best practice. Further, a well accepted approach that incorporates the cost of equity and debt is to be used; and a well accepted financial model is to be used. The weighted average cost of capital (WACC) is given as an example of a well accepted approach, and the capital asset pricing model (CAPM) is given as an example of a well accepted financial model.

134 Based on the nominal vanilla WACC formulation.

5.2 Revised access arrangement proposal

The AER did not approve NT Gas's proposed rate of return as it did not comply with r. 87 of the NGR. It required NT Gas to amend its access arrangement to take account of the rate of return set out in table 5.1.[135]

Table 5.1 AER draft decision on WACC parameters

Parameter	
Nominal risk free rate (%)	5.53
Inflation (%)	2.57
Equity beta	0.80
Market risk premium (%)	6.00
Debt risk premium (%)	3.79
Gearing (%)	60.00
Cost of debt (%)	9.32
Cost of equity (%)	10.33
Nominal vanilla WACC (%)	**9.72**

Source: AER, *Draft decision*, April 2011, p. 88.

NT Gas did not accept the AER's draft decision on the equity beta, MRP and DRP. In support of its revised proposed DRP, NT Gas submitted a report from Australia Ratings, which concluded that the Bloomberg fair value estimates should be used to calculate the DRP.[136] NT Gas nominated an averaging period of 20 business days ending 1 April 2011 to calculate the bond rates, which was accepted in the draft decision.

NT Gas has proposed a nominal vanilla WACC of 10.90 per cent in its revised access arrangement proposal, as set out in table 5.2.[137]

135 AER, *Draft decision*, April 2011, p. 69.

136 Australia Ratings, *Estimating the debt risk premium*, May 2011.

137 NT Gas, *Revised access arrangement submission*, May 2011, p. 72.

Table 5.2 NT Gas revised access arrangement proposal WACC parameters

Parameter	NT Gas revised access arrangement proposal
Nominal risk free rate (%)	5.54
Equity beta	1.0
Market risk premium (%)	6.50
Debt risk premium (%)	4.60
Gearing (%)	60.00
Cost of equity (%)	12.04
Cost of debt (%)	10.14
Nominal vanilla WACC (%)	**10.90**

Source: NT Gas, *Revised access arrangement submission*, May 2011, p. 72; NT Gas, *Revised access arrangement information*, May 2011, p. 24.

5.3 Submissions

The Northern Territory Major Energy Users (NTMEU) submitted that:

- the WACC set by the AER was too high, particularly due to the DRP
- there were several issues with the NT Gas proposal and supporting report from Australia Ratings with regard to setting the benchmark DRP under the NGR
- it supported the AER's decision to revert back to a 6 per cent MRP, and questioned its decision to increase this value to 6.5 per cent given the limited impact of the global financial crisis (GFC) in Australia
- the equity beta of 0.8 set by the AER is probably at the high end of a reasonable range.[138]

5.4 AER's consideration

For the reasons set out below and in appendix A, the AER has not accepted NT Gas's proposed rate of return in its revised access arrangement proposal. The AER considers that the rate of return proposed by NT Gas is excessive and inconsistent with the requirements of r. 87 of the NGR. In particular, the AER considers that the rate of return proposed by NT Gas is not the best estimate commensurate with the prevailing conditions in the market and the risk of providing reference services.

Having rejected NT Gas's proposal the AER now needs to determine an alternative value. In determining an appropriate rate of return the AER has reviewed a variety of evidence and arguments, and has exercised its judgment to arrive at an outcome that it

138 NTMEU, *Submission to the AER*, June 2011, pp. 41–51.

determines best satisfies the requirements of the NGR and NGL. The AER has also compared the rate of return it has proposed against high level indicators for reasonableness. These indicators suggest that the rate of return established by the AER is at least sufficient to meet the objectives and requirements of the NGR and NGL.

The AER's considerations are summarised in the following sections:

- an evaluation of why the rate of return set by the AER is appropriate
- equity beta
- market risk premium
- debt risk premium
- averaging period and risk free rate
- gearing (debt to equity) ratio
- method of inflation forecast.

Further details on particular matters, including the overall rate of return, equity beta, MRP and DRP are contained in appendix A.

5.4.1 Evaluation of the overall rate of return

This section considers the overall rate of return resulting from parameters proposed by the AER elsewhere in this chapter. This assessment considers whether the overall rate of return proposed by the AER is commensurate with prevailing conditions in the market for funds,[139] and that the service provider has an opportunity to recover at least its efficient costs.[140]

The AER's draft decision assessed the overall rate of return using market data and finance theory.[141] This analysis indicated that the overall rate of return set by the AER, although lower than the rate of return proposed by NT Gas, was at least sufficient to meet the cost of capital faced by regulated service providers.

NT Gas did not accept the AER's draft decision on the overall rate of return. Its revised access arrangement proposal disputed the implications of recent regulated asset sales and the cost of equity implied from broker reports. NT Gas also referred to consultant reports that were presented by Envestra in respect of its access arrangement reviews for networks in Queensland and South Australia, which included arguments around the AER's reasonableness assessments.[142] These arguments are addressed in further detail in appendix A.

139 NGR, r. 87(1).

140 NGL, s. 24(2)(a).

141 AER, *Draft decision*, April 2011, pp. 190–196.

142 NT Gas, *Submission of additional documents - WACC*, 7 June 2011.

The techniques available to the AER to assess the overall rate of return, for its draft and now this final decision, can produce a broad range of plausible rates of return. In view of this, the AER primarily relies upon detailed analysis of the input parameters (discussed later in this chapter) in accordance with established finance practice to determine the rate of return. The additional overall techniques are given appropriate consideration in assessing the reasonableness of these results.

The AER has examined broker WACCs, regulated asset sales and trading multiples. As set out below, these analyses support the conclusion that the overall rate of return set by the AER is commensurate with prevailing conditions in the market for funds. Further, two of these analyses—recent regulated asset sales and trading multiples—suggest that that the regulated cost of capital has been at least as high as the actual cost of capital faced by the businesses, and most likely has been in excess of the actual cost of capital associated with the risks involved in providing reference services.

For this decision, the AER determines the overall rate of return using a nominal vanilla WACC of 9.73 per cent. This is based on a cost of equity of 10.33 per cent, a cost of debt of 9.33 per cent and a gearing ratio of 60 per cent. The cost of equity is estimated using the CAPM, based on an MRP of 6 per cent and an equity beta of 0.8. The cost of debt is estimated using a DRP of 3.80 per cent. The risk free rate is estimated at 5.53 per cent using 10 year Commonwealth Government Securities. The reasons behind these parameter inputs are summarised later in this chapter, with further details included in appendix A.

After considering the information before it, the AER considers that the overall rate of return of 9.73 per cent satisfies the requirements of the NGL and NGR. The AER's considerations on the overall rate of return are summarised below, with further details included in appendix A.

Broker reports

The WACC determined by the AER is within the broad range of discount rates applied in equity broker reports (once converted to a consistent reporting basis), as evident in table 5.3.

Table 5.3 Comparison of WACC used by brokers and the AER (per cent)

Broker	Companies assessed	Nominal vanilla WACC
Citigroup	DUE, SKI	9.20–10.90
Credit Suisse	APA	9.35
Deutsche Bank	APA, DUE, SPN	9.22
Goldman Sachs	APA, ENV, SKI	10.04–10.66
Morgan Stanley	SPN	8.16
UBS	SKI	8.04–8.44
Wilson	HDF	10.02
Aggregate range	**APA, DUE, ENV, HDF, SKI**	**8.04–10.90**
AER	**(Benchmark firm)**	**9.73**

Source: Equity broker reports, AER analysis.
Note: This table shows only those brokers who report the WACC in vanilla form or provide sufficient detail to enable conversion to this form. More broker reports are included in appendix A where different forms of WACC are considered. Companies evaluated are APA Group (APA), DUET Group (DUE), Envestra Limited (ENV), Hastings Diversified Utilities Fund (HDF) and Spark Infrastructure Group (SKI).

Regulated asset sales

Sales of regulated assets have been at premiums to the value of the regulated asset base of between 20 and 119 per cent, as evident in table 5.4.[143]

143 AER, *Draft decision*, April 2011, pp. 190–192.

Table 5.4 RAB multiple for recent regulated asset sales

Date	Acquirer	Target	RAB multiple (times)
Dec 06	APA	Directlink	1.45
Oct 06	APA	Allgas	1.64
Aug 06	APA	GasNet	2.19
Apr 06	Alinta	AGL Infrastructure assets	1.41 – 1.52
Mar 06	APA	Murraylink	1.47
Aug 04	DEUT/Alinta/Alcoa	Dampier to Bunbury Natural Gas Pipeline	1.20
Aug 04	APA	Southern Cross Pipeline and Parmelia Gas	1.47
Apr 03	Alinta/AMP/Aquila	Alinta Gas Network	1.35
Apr 03	Alinta/AMP/Aquila	Multinet Gas	1.44
Apr 03	Alinta/AMP/Aquila	United Energy	1.52
Aug 02	CKI/HEH	Citipower	1.69
Oct 00	Consortium	ElectraNet	1.37
Sep 00	CKI/HEH	Powercor	1.71
Jun 00	Singapore Power	PowerNet	1.49
Dec 99	CKI/HEH	ETSA Utilities	1.26
Jul 99	CKI	19.97% of Envestra	1.49
Jun 99	GPU	GasNet	1.72
Mar 99	Envestra/Boral	Stratus Networks	1.99
Jan 99	Texas Utilities	Westar	1.86

Source: Grant Samuel & Associates Pty Limited, *Financial Services Guide and Independent Expert Report in relation to the Recapitalisation and Restructure of Babcock & Brown Infrastructure*, 9 October 2009, p. 78 and Grant Samuel & Associates Pty Limited, *Independent Expert Report in relation to the Acquisition of the Alinta Assets*, 5 November 2007, p. 65.

The AER considers that the acquisition premiums have been substantial, and that premiums of this magnitude are unlikely to be explained by factors associated with the sale process.[144] For example, in the case of Envestra's purchase of Country Energy's NSW gas network, the AER considered that synergistic gains to the extent of half of its operational expenditure (an implausibly high amount) would still not be

144 Such as expected synergies arising from the sale or misjudgment of the true value of the business. AER, *Draft decision*, April 2011, p. 66–7.

sufficient to justify the 26 per cent premium paid above the RAB value.[145] The proportion of operational expenditure to total revenues for Country Energy (34 per cent) is of similar magnitude to other businesses listed in table 5.4. This suggests that the regulated cost of capital has been at least as high as the actual cost of capital faced by the businesses, and most likely has been in excess of the actual cost of capital. Market transactions therefore do not support the view that regulated rates of return result in under compensation with respect to actual required rates of return. The AER considers that the premium it calculated on the sale of Country Energy's gas network in October 2010 is sound, given that it was based on sale details in the official ASX announcement by Envestra.

Trading multiples

Trading multiples for listed businesses operating regulated networks have also exceeded the value of the regulated asset base by between 15 and 81 per cent, as evident in table 5.5.[146]

Table 5.5 RAB multiples of regulated assets using recent market data

Entity	Average RAB as at 30 June 2009	Average RAB as at 30 June 2010
SP AusNet	1.50	1.40
Spark	1.81	1.73
DUET	1.21	1.15
Envestra	1.28	1.21

Source: Grant Samuel & Associates Pty Limited, *Financial Services Guide and Independent Expert Report in relation to the Recapitalisation and Restructure of Babcock & Brown Infrastructure*, 9 October 2009, p. 77. Based on share prices at 29 September 2009 and average nominal RAB for relevant year. RAB is based on the respective regulatory determinations except for DUET which allows for the $908 million expenditure on the Stage 5A and 5B expansion of the Dampier to Bunbury Natural Gas Pipeline.

The AER considers that the trading premiums have been substantial and that, similar to its analysis of recent regulated asset sales, premiums of this magnitude are unlikely to be explained by other factors alone.[147] This suggests that the regulated cost of capital has been at least as high as the actual cost of capital faced by the businesses, and most likely has been in excess of the actual cost of capital.

Other assessments

The AER has evaluated a number of other information sources in assessing the overall rate of return raised in the revised access arrangement proposal —specifically, broker

145 AER, *Draft decision*, April 2011, p. 191.

146 Grant Samuel & Associates Pty Limited, *Financial Services Guide and Independent Expert Report in relation to the Recapitalisation and Restructure of Babcock & Brown Infrastructure*, 9 October 2009, p. 77; AER, *Draft decision*, April 2011, p. 193.

147 Such as differences in tax structure, gearing or growth options. AER, *Draft decision*, April 2011, p. 67.

reports on dividend yields, relative debt returns and the Modigliani-Miller theorem.[148] The AER considers that:

- projections based on dividend yields produce such a broad range of results that they do not provide any meaningful conclusion
- analysis of relative returns to debt and equity produces only an absolute lower bound for the cost of equity, which the rate of return established by the AER satisfies
- the Modigliani-Miller theorem, while conceptually sound, faces limitations in terms of simplifying assumptions that prevent its use in estimating a 'real world' rate of return.

Most importantly, none of these analyses indicate that the overall rate of return set by the AER would not allow NT Gas the opportunity to recover at least its efficient costs incurred in providing reference services.

Conclusion

The AER considers that the analyses of market data support the conclusion that the rate of return established by the AER is commensurate with the prevailing conditions in the market for funds and the risks involved in providing reference services.[149] The AER considers that the rate of return established in this decision is at least sufficient to meet the cost of capital faced by regulated service providers.[150]

5.4.2 Equity beta

The equity beta provides a measure of the 'riskiness' of an asset's return compared with the return on the entire market. The equity beta reflects the exposure of the asset to systematic or 'non-diversifiable' risk, which is the only form of risk that requires compensation under the CAPM.

Consistent with the 2009 WACC review[151], the AER's draft decision considered that an equity beta of 0.8 would ensure that the service provider has the opportunity to recover at least its efficient costs incurred in providing reference services.[152] As shown in table 5.6, the AER considers that CEG's equity beta estimates support the empirical findings in the WACC review of an equity beta range of 0.4 to 0.7 for Australian energy network businesses.[153]

148 See appendix A.1.

149 NGR, r. 87(1).

150 NGL, s. 24(2)(a).

151 While the SORI has no status under the NGR, it was intended to provide guidance to the gas sector.

152 AER, *Draft decision*, April 2011, p. 85.

153 AER, Final decision: *WACC review*, 1 May 2009, pp. xv–xviii, 239–292, 343–361.

Table 5.6 Equity beta estimates

Company	Equity beta
CEG estimates	
Envestra	0.51
Hastings	1.64
Australian Pipeline	0.54
DUET	0.34
Spark Infrastructure	0.53
SP AusNet	0.14
Simple average	**0.62**
AER WACC review range	**0.41 – 0.68**

Source: Competition Economist Group, *Estimating the cost of capital under the NGR, A report for Envestra*, September 2010, p. 49 and AER, *Final decision, Electricity transmission and distribution network service providers, Review of the weighted average cost of capital (WACC) parameters*, 1 May 2009, p. 343.

NT Gas's revised access arrangement proposal did not accept the AER's draft decision and stated that the equity beta should be 1.0. Consistent with its original proposal, NT Gas maintained its view that the average regulated energy network business has lower business risk and higher financial risk compared to the market average. Therefore, the average regulated energy network business should have an equity beta of 1.0, which is the same as the market equity beta.

For the following reasons, the AER rejects NT Gas's revised access arrangement proposal of an equity beta estimate of 1.0 as it would result in a cost of capital which is excessive with respect to the risk involved in providing reference services. The AER maintains its position in the draft decision and considers that an equity beta of 0.8 provides the best estimate commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services, as required under r. 74(2) and r. 87(1) of the NGR.[154] The AER has reached this conclusion for a number of reasons including the following:

- The AER considers that, on both theoretical and empirical grounds, the lower systematic risk faced by regulated businesses more than offsets the impact of higher financial risk faced by these businesses. This is supported by the AER's empirical estimate of an equity beta range of 0.4 to 0.7 for regulated energy businesses, which is less than the market equity beta of 1.0. The AER's approach to estimating equity betas addresses the impact of both types of risk. It takes a

154 NGL, s. 24(2).

sample of firms with a similar level of systematic risk, and then adjusting the sample for financial risk to reflect the target benchmark gearing level.[155]

- The AER considers that regulated businesses face lower systematic risk than the market, primarily due to the stable cash flows of these businesses. The lower equity beta is the result of a regulatory regime that provides protection to regulated businesses that are not available to those in the competitive environment, including:
    - tariff variation mechanism allows for the annual adjustment for inflation, lowering exposure to inflation risk
    - roll forward of the capital asset base occurs in a manner that lowers exposure to cost overruns for capital expenditure
    - cost pass through mechanism allows for certain costs to be passed on to consumers during the access arrangement period, lowering exposure to costs not forecast at the commencement of the access arrangement period
    - the access arrangement provides for acceleration of the review submission date on occurrence of a trigger event
    - a service provider may submit an access arrangement variation proposal for the AER's approval.

NT Gas made a "fundamental point" that the AGP pipeline was unique and that there was no evidence to support the AER's draft decision to depart from the previously adopted equity beta value of 1.0.[156] However the AER's draft decision presented evidence to support this decision regarding the benchmark equity beta value, including data already considered during the AER's WACC review.[157] The AER's decision was also substantiated by parts of Synergies' own analysis.[158]

Regarding the uniqueness of the AGP, NT Gas appears to suggest that it faces stranding risk and this requires some form of compensation in its access arrangement (either through a higher than average beta estimate or in its cash-flows) and disputes certain characteristics of its pipeline usage as identified in the AER's draft decision.[159] However this does not acknowledge that compensation for stranding risk was already provided for in an accelerated depreciation allowance in NT Gas's current access arrangement. NT Gas also did not address previous comments made by stakeholders, including Allen Consulting Group (on behalf of PWC) and NT Treasury regarding the low stranding and operational risks of the AGP compared to other pipeline

155 AER, Final decision: Electricity transmission and distribution network service providers, Review of the weighted average cost of capital (WACC) parameters, 1 May 2009, pp. 252–254.

156 NT Gas, *Revised access arrangement submission*, May 2011, pp. 70–71.

157 AER, *Draft decision*, April 2011, pp. 83–4.

158 AER, *Draft decision*, April 2011, p. 196.

159 NT Gas, *Revised access arrangement submission*, May 2011, pp. 70–71.

operators.[160] The NTMEU also questioned the arguments presented by NT Gas in this regard, and noted that an equity beta of no more than 0.8 should be used.[161]

In conclusion, the AER considers that the empirical evidence presented in the WACC review contains the best available estimate of the equity beta that would apply to a benchmark gas distribution network service provider, taking into account the need to reflect prevailing market conditions and the risks involved in providing reference services.[162] The sample set of data used to derive the equity beta in the WACC review provides a value of between 0.4 and 0.7.

The AER has given consideration to other factors, such as the need to achieve an outcome that is consistent with the national gas objective (NGO)—in particular, the need for efficient investment in natural gas services for the long-term interests of consumers of natural gas. The AER has also taken into account the revenue and pricing principles, the importance of regulatory stability and is also mindful it has recently considered an equity beta of 0.8 to be appropriate, if not overstated, for other gas businesses. On the basis of the information presented, the AER concludes that an equity beta of 0.8 provides NT Gas with an opportunity to recover at least its efficient costs incurred in providing reference services and meeting regulatory requirements.[163]

5.4.3 Market risk premium

The MRP is the expected return over the risk free rate that investors require to invest in a well diversified portfolio of risky assets.[164] The MRP represents the risk premium investors who invest in such a portfolio can expect to earn for bearing only non-diversifiable (systematic) risk. The MRP is common to all assets in the economy and is not specific to an individual asset or business.

The MRP is not observable because it is a forward looking value. In addition to this, the available evidence that can be used to estimate the MRP is imprecise and subject to varied interpretation, a point that is well recognised in academic literature[165] as well as in reports put forward by regulated entities.[166] As a result, a degree of judgment is required to determine the MRP value that is the best estimate in the circumstances and commensurate with prevailing conditions in the market for funds.

In the draft decision, the AER did not accept NT Gas's original proposal for an MRP of 6.5 per cent. The AER adopted an MRP of 6 per cent for the purposes of determining the cost of equity using the CAPM. An MRP of 6 per cent was consistently adopted in regulatory decisions prior to the AER's WACC review,

160 AER, *Draft decision*, April 2011, p. 197.

161 NTMEU, *Submission to the AER*, June 2011, pp. 50–51.

162 NGR, r. 74(2)(b) and r. 87(1).

163 NGL, s. 24(2).

164 All assets other than the risk free asset have the potential to provide a negative return and are therefore classified as risky assets.

165 See for example Mehra R. and Prescott E.C., 'The equity premium, A puzzle', *Journal of Monetary Economics*, 15, 1985, pp. 145–161; Damodoran A., *Equity Risk Premiums (ERP), Determinants, Estimation and Implications*, September 2008, p. 1; Doran J.S., Ronn E.I. and Goldberg R.S., *A simple model for time-varying expected returns on the S&P 500 Index*, August 2005, pp. 2–3.

166 See for example Officer and Bishop, *Market risk premium, a review paper*, August 2008, pp. 3–4.

including at times when indications were that the MRP was below 6 per cent.[167] At the time of the WACC review the AER acknowledged the uncertainty in the market due to the onset of the GFC. The AER considered one of two scenarios could have explained market conditions at that time:

- The prevailing medium-term MRP was above the long-term MRP, but would return to the long-term MRP over time; or

- There had been a structural break in the MRP and the forward looking long-term MRP (and consequently also the prevailing MRP) is above the long-term MRP that previously prevailed.

Due to the uncertainty about the effects of the GFC on future market conditions the AER departed from the previously adopted forward looking MRP estimate of 6 per cent and increased it to 6.5 per cent. The significant uncertainty that characterised markets at the time of the WACC review has substantially diminished. Conditions in the market for funds have eased considerably from those prevailing at the time of the WACC review.

The AER considers that it is appropriate to assess a range of evidence to inform the best estimate of the MRP. In applying its judgment, the AER has considered the following available evidence:[168]

- Historical excess return estimates for three time periods, 1883–2010, 1937–2010 and 1958–2010. These estimates provide a range of 5.9–6.4 per cent if calculated on an arithmetic mean basis and a range of 3.8–4.8 per cent if calculated on a geometric mean basis.[169] These figures estimate the realised return that stocks have earned in excess of the 10-year government bond rate and may inform expectations of the excess return that could be earned in the future.

- Dividend growth model (DGM) based estimates of the MRP incorporating assumptions drawn from independent sources provide an estimated range for the MRP of approximately 4.5–5.6 per cent. DGM based estimates of the MRP are highly sensitive to the assumptions made so it is best to consider DGM based estimates of the MRP along with a range of other evidence.

- Implied volatility from the prices of options on the ASX 200 index has returned to pre-GFC levels, which indicates that the MRP is unlikely to be above pre-GFC levels. However, the AER is not aware of a reliable basis for directly estimating the MRP from implied volatility, especially for a long-term horizon.

- Surveys of market practitioners prior to the GFC supported 6 per cent as the most commonly adopted value for the MRP. The latest survey evidence from supports an MRP of approximately 6 per cent. The results of the most recent 2011 survey reflect the views of many more Australian respondents than in previous surveys.

167 AER, *Draft decision*, April 2011, pp. 69–71.

168 See Appendix A.2.

169 Handley, Memorandum: *Additional Estimates of the Historical Equity Risk Premium for the Period 1883 to 2010*, 25 May 2011, p. 1.

- Recent evidence from broker reports indicates that, on average, current market practice is to adopt an MRP estimate of 5.9 per cent on average and a recent report from AMP Capital Investors indicates that its forward looking MRP is lower than 6 per cent.

The AER considers the evidence outlined above supports a value of 6 per cent as the best estimate of the MRP. It also indicates that the AER's approach of increasing the MRP to 6.5 per cent at the time of the WACC review is no longer appropriate. The NTMEU also commented that a value of 6.5 per cent is too high when considering current market data, and questioned whether the AER should have departed from the previously adopted value of 6 per cent given the limited impact of the GFC on the Australian market.[170] The AER's detailed consideration of the evidence is contained in appendix A.

In its revised access arrangement proposal, NT Gas did not agree with the draft decision to adopt an MRP of 6 per cent and maintained its proposal for an MRP of 6.5 per cent.

NT Gas outlined some specific issues for the AER's consideration. The AER has considered the information put forward by NT Gas and does not consider that an MRP above 6 per cent is justified:

- NT Gas submitted that various events, including natural disasters and uncertainty over sovereign debt in Europe, could affect investor expectations. [171] While NT Gas provided some comments on the relationship between financial markets and the "real economy", it did not clearly articulate the relevance of this, nor of the aforementioned events, in estimating the long-term MRP. Such events are likely to impact on investors' short-term expectations but unlikely to affect investors' long-term expectations or the long-term economic outlook for the Australian economy. For example, in its May 2011 *Statement on monetary policy*, the Reserve Bank of Australia (RBA) noted that the Australian equity market fell sharply following the Japanese earthquakes but subsequently recovered all of this decline.[172] More recently, the Reserve Bank Governor commented that "the banking and sovereign debt problems in Europe have also added to uncertainty and volatility in financial markets over recent months" however "(d)espite the challenging international environment, the central scenario for the world economy envisaged by most forecasters remains one of growth at, or above, average over the next couple of years".[173]

- NT Gas submitted that historical excess return estimates support an estimate of 6.5 per cent for the MRP.[174] However, as illustrated in appendix A.2.1, the latest

170 NTMEU, *Submission to the AER*, June 2011, p. 49.

171 NT Gas, *Revised access arrangement submission*, May 2011, pp. 45–46.

172 RBA, *Statement of monetary policy*, May 2011, p. 53. The RBA also noted that following this recovery, the Australian equity market trended downwards in part due to the appreciation of the Australian dollar. The RBA did not attribute this downward trend to the effect of the Japanese earthquakes.

173 RBA, *Statement by Glenn Stevens, Governor: Monetary Policy Decision*, 5 July 2011. Available at http://www.rba.gov.au/media-releases/2011/mr-11-15.html viewed 15 July.

174 NT Gas, *Revised access arrangement submission*, May 2011, p. 47.

historical excess return estimates are in the range 5.9–6.4 per cent and these are likely to be overstated to some degree because they are calculated on an arithmetic mean basis. NT Gas also submitted that the most relevant period over which to estimate the MRP is from 1958 onwards. However, historical excess returns by their nature are highly volatile, which means that longer data series can provide a more statistically robust estimate. The AER notes that there are benefits and drawbacks of using data over longer periods and shorter (but more recent) periods. For this reason the AER has considered historical excess return estimates over a number of periods to inform the best estimate of the MRP.

- NT Gas submitted that survey evidence is not reliable.[175] However, survey evidence is likely to reflect the views of market practitioners and there is no reason to suspect bias in survey based evidence. The AER notes that there is a range of survey evidence both prior to the GFC, which supports an MRP of 6 per cent and this is consistent with the MRP estimates adopted in recent broker reports.

NT Gas also referred to a series of consultant reports that were presented by Envestra in respect of its access arrangement reviews for networks in Queensland and South Australia, which included arguments on the MRP.[176] The AER's detailed consideration of these reports is contained in appendix A.

In conclusion, the AER considers that available evidence on the MRP is imprecise. As a result, the MRP is subject to a margin of variation. The AER has used its judgment to interpret the information before it. The AER considers that the available evidence, both prior to and following the GFC, supports 6 per cent as the best estimate of the forward looking MRP arrived at on a reasonable basis. The AER considers that an MRP of 6.5 per cent proposed by NT Gas is excessive based on the available evidence and is not consistent with the requirement that the rate of return be commensurate with prevailing conditions in the market for funds.[177] For these reasons the AER considers that an MRP of 6 per cent best meets the NGO, which is to promote efficient investment in, and efficient operation and use of, natural gas services for the long-term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.

The AER also considers that an MRP of 6 per cent is consistent with the revenue and pricing principles set out in section 24(2)(a) of the NGL. These state that the service provider should be provided with a reasonable opportunity to recover at least the efficient costs.

5.4.4 Debt risk premium

The DRP is the margin above the nominal risk free rate that a debt holder would require in order for it to invest in a benchmark efficient service provider. When combined with the nominal risk free rate, the DRP represents the return on debt and is an input for calculating the WACC.

175 NT Gas, *Revised access arrangement submission*, May 2011, pp. 50–1.

176 NT Gas, *Submission of additional documents - WACC*, 7 June 2011.

177 NGR, r. 87(1).

The AER's draft decision rejected NT Gas's proposed approach to establishing the DRP. Instead, the AER proposed the DRP be based on an average of Bloomberg's BBB fair value estimates (extrapolated to a maturity of 10 years) and the observed yields on the APA Group bond.

NT Gas did not agree with the AER's approach and its revised access arrangement proposal determined the DRP based solely on Bloomberg's fair value estimates.[178] This approach provided a DRP of 460 basis points above the risk free rate.[179]

The AER has also considered the relevance of the recent ruling of the Australian Competition Tribunal in the case of Jemena Gas Networks (JGN), which determined that the AER should have adopted Bloomberg's fair value estimates alone in setting the DRP.[180] The AER considers there are several important factors that distinguish the circumstances of the JGN decision with this decision for NT Gas:

- The APA Group bond was not relied upon in setting the DRP in the case of JGN, nor was it given any particular consideration by the Tribunal.[181] The AER has chosen to place reliance on this bond in the case of NT Gas as it is a close match for its benchmark corporate bond, given its near BBB+ credit rating and 10 year maturity. The similarities between the risks involved in providing the services offered by the APA Group and those of the benchmark service provider are also relevant considerations when setting the DRP in accordance with rule 87(1) of the NGR.

- In the case of JGN, the quantitative methods used to judge the accuracy of Bloomberg and CBASpectrum were employed because there were no other ways to distinguish between these two sources of information. The APA Group bond is an actual bond issued in the market and has observations reported by UBS and Bloomberg, and its yields are therefore more transparent and readily understood than the proprietary nature of Bloomberg's fair value estimates.

- Bloomberg's estimates are derived from a group of bonds with a maturity of up to five and a half years, which is well below the AER's benchmark term to maturity. Similarly, the empirical testing undertaken in the JGN case was heavily reliant on bond observations with shorter maturities than the AER's benchmark.

- The use of Bloomberg's 7 year BBB rated fair value estimates, and its further extrapolation to 10 years, presumes that a curve fitted to shorter dated bonds will reflect the spreads for longer dated bonds, which may not be true.

- Further analysis (presented in this chapter) on recently issued longer dated bonds indicates that Bloomberg's extrapolated fair values may not be reflective of what might be a benchmark corporate bond rate. These data further support the reasonableness of the spreads on the APA Group bond as a suitable benchmark.

178 NT Gas, *Revised access arrangement submission*, May 2011, pp. 52–69.

179 For the reasons discussed in section 5.3.5, the AER has approved a 20 day averaging period.

180 Application by Jemena Gas Networks (NSW) Ltd (No 5) [2011] ACompT 10 (9 June 2011).

181 This is evident from the Tribunal's selection of the relevant graph at paragraph [89], which does not include the APA Group bond.

The AER considers that the DRP proposed by NT Gas is excessive and not commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services. Given that its proposed DRP is so far above what would otherwise be considered an efficient amount, the AER considers that the proposed DRP is not consistent with section 24 of the NGL, in so much as the estimate of the benchmark cost of debt has insufficient regard to:

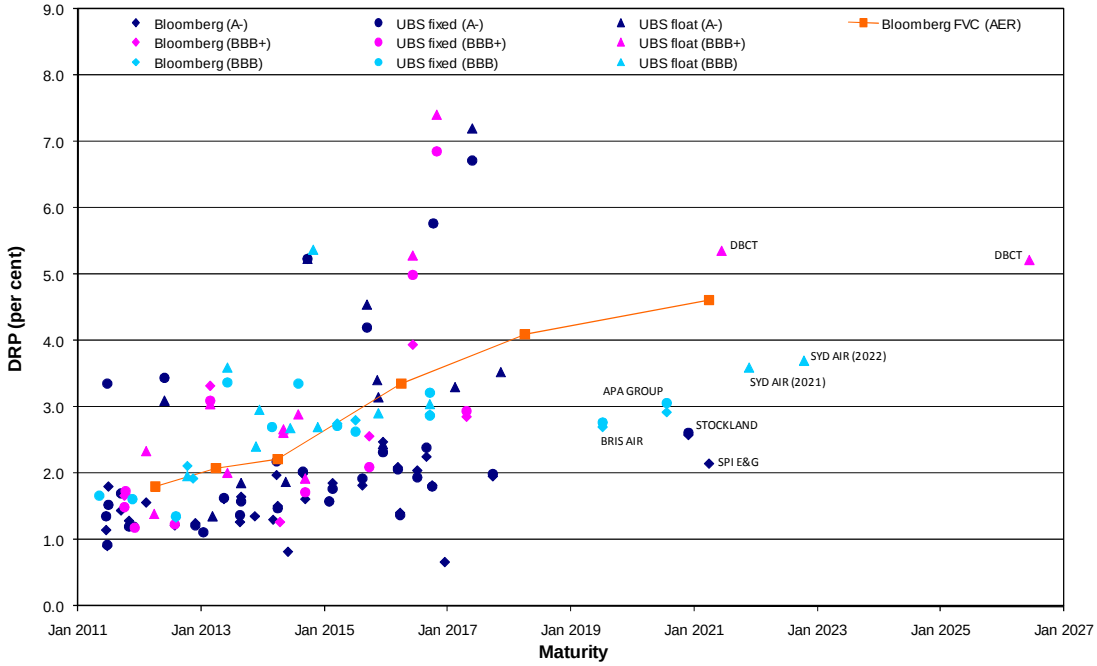
- the regulatory and commercial risks involved in providing the reference service (section 24(5))
- the economic costs and risks of the potential for under and over investment (section 24(6)).

As detailed in appendix A, the AER considers that the evidence in support of the observed yields of the APA Group bond has strengthened significantly since the draft decision. Specifically, the observed yields for four bonds with similar terms to maturity and credit ratings as the benchmark corporate bond—Brisbane and Sydney Airports, and SP AusNet—have now been available for a period of months. This has facilitated a more robust consideration of their yield estimates. These observed yields all support the AER's consideration that the observed yields of the APA Group bond are more reflective of prevailing conditions in the market for funds for the AER's notional benchmark service provider than Bloomberg's (extrapolated) 10 year, BBB fair value estimates.

Further, as figure 5.1 demonstrates, the empirical evidence suggests that Bloomberg's (extrapolated) 10 year, BBB rated fair value estimate is likely to overstate the costs of debt, particularly for regulated network service providers. That is, with exception of DBCT, all observed yields for bonds with characteristics comparable to the benchmark corporate bond are below Bloomberg's (extrapolated) 10 year, BBB rated fair value estimate.[182]

182 As discussed in appendix A, the yield on the DBCT bonds have fallen significantly since the conclusion of NT Gas' averaging period. In particular, the trading margin on the DBCT bond maturing in 2021 has fallen by 110 basis points. Subsequently, the observed yield on the DBCT bond is now below Bloomberg's fair value curve, and is more consistent with other comparable bonds.

Figure 5.1 Australian corporate bonds with credit ratings ranging from BBB to A



Source: Bloomberg, UBS, AER analysis.
Note: Yields are annualised, and floating bonds have been converted to fixed rate equivalents. No other adjustments have been made.

On this basis, the AER does not consider it appropriate to set the DRP based solely on the (extrapolated) Bloomberg BBB rated fair value estimate. The AER considers that greater reliance could reasonably be placed on the APA Group bond to determine the DRP.

The AER has reached this conclusion for the following reasons:[183]

- There is evidence to suggest that the behaviour of the Bloomberg fair value estimates since the onset of the GFC is somewhat counterintuitive. The extrapolated 10 year DRP derived from Bloomberg is currently nearing all time highs. The spread between Bloomberg's seven and 10 year, AAA rated fair value estimates—which is used by the AER to extrapolate Bloomberg's seven year, BBB rated fair value estimates—also remains at near historical highs. This implies that prevailing conditions in debt markets are more risky now than during the GFC. Given the substantial evidence indicating that debt market conditions have improved since the GFC and are likely to improve further, sole reliance on Bloomberg data seems unlikely to result in a DRP that accurately reflects forward looking expectations for the access arrangement period.

- The characteristics of the APA Group bond closely match those of the benchmark corporate bond adopted by the AER, namely its BBB credit rating and near 10 year maturity. As this bond has a lower credit rating than the BBB+ benchmark, its use would be expected to result in a DRP that overstates the benchmark cost of debt.

183 See appendix A.3 for details.

- The APA Group is an owner of various largely regulated energy network assets. The nature of the underlying risk and markets in which the APA Group operates resembles those of the benchmark gas pipeline service provider. Credit ratings are an imperfect indicator of default risk. Therefore, other factors should be taken into account when using bond data to set the benchmark cost of debt under the NGR.[184] In that context, the AER considers the APA Group bond is suitable for deriving a DRP that reflects the risks involved in providing reference services.

- A recently issued A– rated, 10 year bond by SP AusNet has observed yields that are below the APA Group bond. Similarly, the A– rated, 10 year bond issued by Stockland has a yield comparable to the APA Group bond.[185] Notably, both yields are significantly below the extrapolated 10 year, BBB rated Bloomberg estimates, and give further support for relying on the APA Group bond instead of only the Bloomberg estimates.

- A recently issued BBB rated, eight year bond by Brisbane Airport has observed yields that are approximately 28 basis points below the APA Group bond and over 191 basis points below Bloomberg's fair value estimates. This also provides support for relying on the APA Group bond instead of only the Bloomberg estimates.

- The BBB rated, Sydney Airport floating rate bonds maturing in 2021 and 2022 respectively, currently exhibit observed yields approximately 98 and 85 basis points below Bloomberg's (extrapolated) 10 year, BBB rated fair value estimates.

- The observed yields for the DBCT bond are now below Bloomberg's (extrapolated) 10 year, BBB rated fair value estimates. For the draft decision, the DBCT bond was the only comparable bond with observed yields above Bloomberg's fair value estimate. As at 3 June 2011, however, observed yields for the DBCT bond are approximately 11 basis points below Bloomberg's (extrapolated) 10 year, BBB fair value estimate.[186]

- The Independent Pricing and Regulatory Tribunal (IPART) recently published its final decision for a discussion paper to develop an approach to setting the debt margin.[187] The indicative debt margin was approximately 170 basis points below

184 Factors such as the industry in which the bond issuer operates potentially affect bond yields. See Oakvale Capital, *Report on the cost of debt during the averaging period: the impact of callable bonds*, January 2011, pp. 2–3, 17–19.

185 The AER considers that the Stockland bond provides a relevant point of reference to assess the reasonableness of both Bloomberg's BBB rated fair value estimates and the APA Group bond yield, albeit to a lesser extent than the Brisbane Airport, Sydney Airport and SP AusNet bonds (given the nature of its operations differ from the AER's notional benchmark service provider). This is discussed in detail in section A.3.3 of this final decision.

186 The decline in observed yields for the DBCT bond is primarily due to a significant reduction in the trading margin on 19 April 2011. Given the recent nature of the change, the AER considers that a longer period is required to properly assess the robustness of the recent observations of the DBCT bond yields. On this basis, the AER remains cautious of the reliability of the observed DBCT bond yields. This issue is discussed in further detail in appendix A.

187 IPART, Final decision: *Developing the approach to estimating the debt margin, Other industries*, April 2011.

> NT Gas's proposal. Although the methods used by IPART and the AER differ—notably, IPART has considered shorter term debt—the outcome of IPART's decision suggests that NT Gas's proposed DRP is excessive and not commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services.[188] The Economic Regulation Authority (ERA) has also recently published a draft decision with indicative debt margins almost 150 basis points below NT Gas's proposal.[189]

However, in the current circumstances, the AER considers that some uncertainty exists regarding the appropriateness of setting the DRP based upon a single bond yield. Accordingly, the AER has exercised its judgment to determine the proportion to apply to both data sources.

The proportion to apply to each data source should reflect their relative suitability for the purposes of establishing a benchmark DRP. In making its recent final decisions for the Envestra and APT Allgas access arrangements, the AER considered whether more recent evidence justified placing increased emphasis on the APA Group bond relative to the Bloomberg fair value curve. After doing so, the AER maintained the equal weighting applied to these two sources, which the AER also considers to be appropriate in the current circumstances for NT Gas.

Based on the 20 day averaging period ending 1 April 2011, these two information sources produce margins over the risk free rate of 4.60 per cent and 3.00 per cent.[190] This results in a DRP of 3.80 per cent (effective annual compounding rate). The AER considers this is the best DRP estimate possible in the circumstances of NT Gas.

Further detail in relation to these matters is contained in appendix A.3.

5.4.5 Averaging period and risk free rate

The risk free rate measures the return an investor would expect from an asset with zero volatility and zero default risk. The yield on long-term Commonwealth Government Securities (CGS) is often used as a proxy for the risk free rate because the risk of government default on interest and debt repayments is considered to be low.[191]

The AER's draft decision accepted NT Gas's access arrangement proposal for a 20 business day averaging period ending 1 April 2011. Using this approved averaging period, the AER determines a risk free rate of 5.53 per cent (effective annual compounding rate) for this decision.

---

188 NGR, r. 87(1).

189 ERA, *Draft decision on proposed revisions to the access arrangement for the Dampier to Bunbury natural gas pipeline*, March 2011, p. 169.

190 The margin over the risk free rate for the APA Group bond reflects an equally weighted average of the observed yields from Bloomberg and UBS. The AER notes that its draft decision calculated a value of 2.98 per cent for the APT bond, which was a rounding error. The value of 3.00 per cent has resulted in a corresponding increase to the DRP and therefore the overall WACC.

191 AER, Final decision: *WACC Review*, 1 May 2009, pp. 128–174.

5.4.6 Gearing ratio

The gearing ratio is defined as the ratio of the value of debt to total capital—that is, debt and equity—and is used to weight the costs of debt and equity when formulating the WACC.

The AER's draft decision accepted NT Gas's access arrangement proposal to apply a gearing of 60 per cent.[192] Therefore, the gearing ratio was not raised as an issue in NT Gas's revised access arrangement proposal.

5.4.7 Inflation forecast

The expected inflation rate is not an explicit parameter within the WACC calculation. However, it is used in the revenue model to forecast nominal allowed revenues and to index the capital base. It is an implicit component of the nominal risk free rate, with implications for the return on both equity and debt. The inflation forecast is established consistently with the ten year investment horizon of the risk free rate.

As noted in the draft decision, inflation forecasts can change in line with market sensitive data and regulatory practice in Australia has been to update these forecast values at the time of making a decision. For this decision, the AER has updated the inflation forecast based on the latest RBA expectations set out in table 5.7. The average forecast inflation rate over a ten year period is 2.55 per cent.

Table 5.7 AER inflation rate forecast (%)

	Jun–12	Jun–13	Jun–14	Jun–15	Jun–16	Jun–17	Jun–18	Jun–19	Jun–20	Jun–21	Geometric average
AER inflation forecast	2.50	3.00	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.55

Source: RBA, *Statement on monetary policy*, 6 May 2011, p. 63.

5.5 Conclusion

The AER proposes not to approve the rate of return proposed by NT Gas as it does not comply with r. 87 of the NGR and requires NT Gas to make the revisions set out in section 5.5.

5.6 Revisions

The AER proposes the following revision:

Revision 5.1: make all amendments necessary in the revised access arrangement proposal and access arrangement information to take account of the rate of return determined in accordance with table 5.8.

192 AER, *Draft decision*, April 2011, p. 87.

Table 5.8 WACC parameters for the access arrangement period

Parameter	
Nominal risk free rate (%)	5.53
Inflation (%)	2.55
Equity beta	0.80
Market risk premium (%)	6.00
Debt risk premium (%)	3.80
Gearing (%)	60.00
Cost of debt (%)	9.33
Cost of equity (%)	10.33
Nominal vanilla WACC (%)	**9.73**

6 Tax

In the draft decision, the AER accepted NT Gas's proposal to use a post-tax framework in calculating revenues. The AER also accepted NT Gas's proposed approach to calculate taxation and the tax asset standard lives. However, the AER did not accept NT Gas's proposed opening tax asset base and the tax remaining lives to estimate the cost of corporate income tax. The AER also did not accept the omission of an analysis of the existence of a tax loss carry forward. The AER did not accept NT Gas's estimate of the value of imputation credits by investors (gamma) of 0.2 and substituted a value of 0.45.

In the revised access arrangement proposal, NT Gas did not accept the estimate of gamma in the draft decision and proposed a gamma of 0.25. Further, NT Gas proposed that the forecast tax allowance be revised to reflect changes to the tax asset base, gamma, the roll forward of the regulatory capital base, and other building block components.

The AER accepts NT Gas's proposed tax loss carry forward (TLCF) amount of $0.99 million. The AER considers that the proposed is representative of the benchmark revenue and expenses of NT Gas. The AER has also accepted NT Gas's proposed method for calculating the opening tax asset base and the proposed remaining tax asset lives. However, the AER proposes to revises the capex for 2010–11, which affects the remaining tax asset lives and opening tax asset values as at 1 July 2011. The AER has also accepted a gamma of 0.25, consistent with the recent Australian Competition Tribunal (Tribunal) decision in its review of the AER's electricity distribution determinations for Queensland and South Australia.

The AER has calculated a forecast tax allowance of $6.9 million (nominal) for the access arrangement period. This forecast reflects the approved revenue and costs set out in the final decision.

6.1 Regulatory requirements

Rule 72(1)(h) of the NGR provides that the access arrangement information for an access arrangement proposal must include the proposed method for dealing with taxation, and a demonstration of how the allowance for taxation is calculated.

Rule 76(c) of the NGR provides for the estimated cost of corporate taxation as a building block for total revenue insofar as this is applicable.

6.2 Revised access arrangement proposal

6.2.1 Use of imputation credits (gamma)

NT Gas did not accept the draft decision amendment of a gamma estimate of 0.45. It proposed that the Tribunal has made its decision in relation to a review of the gamma applied in the AER's electricity distribution determinations for Queensland and South Australia.[193] NT Gas adopted the gamma value of 0.25 as determined by the Tribunal.

193 See Australian Competition Tribunal, *Application by Energex Limited (Gamma) (No. 5)[2011] A CompT 9*, 12 May 2011.

6.2.2 Tax asset base

In the draft decision, the AER accepted NT Gas's proposed standard tax asset lives.[194] However, the AER did not accept the proposed remaining tax asset lives as it did not reflect the applicable tax rulings in effect over the earlier access arrangement period.[195] Consequently, the AER required NT Gas to amend its tax depreciation rates used to roll forward the tax asset base to 1 July 2011. In the revised access arrangement proposal, NT Gas amended the tax asset lives and depreciation rates to reflect the various tax rulings published by the Australian Taxation Office (ATO)[196] Further, NT Gas has also accepted the AER's amendment of tax depreciation rates based on the diminishing value method of depreciation.[197]

NT Gas did not accept the amendment to calculate the remaining tax asset life for the opening tax asset base as at 1 July 2001 used to roll forward to 1 July 2011.[198] NT Gas proposed a recalculation of the opening value of the tax asset base and remaining tax asset lives to reflect the changes to the remaining lives of the opening tax asset base.[199] Table 6.1 sets out the revised opening tax asset values and remaining tax asset lives as at 1 July 2011.

Table 6.1: NT Gas's revised opening tax asset base and remaining tax asset lives (units as stated)

Asset class	Opening tax asset values ($, millions)	Remaining tax asset lives (years)
Pipeline	5.0	13.3
Compression	0.3	0.0
Meter stations	2.6	17.6
SCADA and communications	1.5	2.3
Operation and management facilities	1.8	16.0
Buildings	0.0	39.5
Total	11.2	-

Source: NT Gas, *Revised* a*ccess arrangement submission*, May 2011, p. 79.

6.2.3 Tax loss carry forward

In response to the assessment of TLCF set out in the draft decision, NT Gas proposed that the analysis of TLCF should reflect the actual costs and operating characteristics

194 AER, *Draft decision*, April 2011, p. 95.

195 AER, *Draft decision*, April 2011, p. 94.

196 ATO, *Taxation ruling – Income tax: depreciation*, www.ato.gov.au, viewed on 14 March 2011, (Tax rulings IT2685, TR2000/18, TR 2006/05).

197 NT Gas, *Revised access arrangement submission*, May 2011, pp. 78–79.

198 NT Gas, *Revised access arrangement submission*, May 2011, pp. 78–79.

199 NT Gas, *Revised access arrangement submission*, May 2011, pp. 78–79.

of the pipeline over the earlier access arrangement period.[200] NT Gas's revised access arrangement proposal sets out the TLCF based on the following assumptions:

- opening value of the TLCF to be taken from the ACCC 2001 access arrangement final decision
- revenue to be calculated as actual throughput charged at the approved access arrangement tariffs
- opex to be recorded as incurred (forecast for 2010–11)
- tax depreciation to be calculated in accordance with the tax value of the asset base and relevant tax legislation in place at the time
- interest to be calculated as the value of the capital base, multiplied by the 60 per cent gearing ratio and then by the 7.07 per cent return on debt allowed in the 2001 access arrangement
- capex for 2010–11 to be based on the draft decision of March 2011[201]
- [c-i-c].[202]

On this basis, NT Gas proposed a revised calculation of TLCF as at 1 July 2011 of $1 million (nominal), as shown in table 6.2 below.[203]

200 NT Gas, *Revised access arrangement submission*, May 2011, p. 84.

201 AER, *Draft decision*, April 2011.

202 NT Gas, *Revised access arrangement submission*, May 2011, p. 84.

203 NT Gas, *Revised access arrangement submission*, May 2011, p. 84.

Table 6.2: NT Gas's tax loss carried forward calculation ($m, nominal)

	2001–02	2002–03	2003–04	2004–05	2005–06
Opening tax loss	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
Revenue	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
Operating expenditure	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
Tax depreciation	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
Interest	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
PTM	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
Closing tax profit/loss	(193.71)	(171.63)	(145.67)	(116.11)	(83.78)
	2006–07	**2007–08**	**2008–09**	**2009–10**	**2010–11**
Opening tax loss	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
Revenue	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
Operating expenditure	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
Tax depreciation	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
Interest	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
PTM	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]	[c-i-c]
Closing tax profit/loss	(47.09)	(25.79)	(8.15)	(1.26)	(0.99)

Source: NT Gas, *Revised access arrangement submission*, May 2011, p. 85, attachment A.2 (confidential).

6.2.4 Forecast tax allowance

The draft decision required NT Gas to amend its proposal to include changes to the roll forward of the opening capital base, the rate of return on capital, and the capital and operating expenditure forecasts.[204] NT Gas has revised its forecast tax allowance to reflect its revised access arrangement proposal including changes to the calculation of the tax asset base, actual and forecast capex, and gamma.[205] NT Gas's revised forecast tax allowance is shown in table 6.3.

204 AER, *Draft decision*, April 2011, pp. 129–130.

205 NT Gas, *Revised access arrangement submission*, May 2011, p. 85.

Table 6.3: NT Gas's revised taxation allowance ($m, nominal)

	2011–12	2012–13	2013–14	2014–15	2015–16
Tax allowance	2.8	1.8	1.9	2.0	1.2

Source: NT Gas, *Revised access arrangement submission*, May 2011, p. 85.

6.3 Summary of submissions

No submissions were received in relation to NT Gas's forecast tax allowance.

6.4 AER's consideration

NT Gas accepted the draft decision on the depreciation rates to roll forward the tax asset base, based on changes to the tax asset lives and depreciation rates as determined by the tax commissioner. However, NT Gas did not accept the remaining tax asset lives for the assets comprising the tax asset base as at 1 July 2001 used to roll forward to 1 July 2011. The AER accepts that the remaining tax asset lives of the opening tax asset base should be amended, due to an error in the AER's modelling of the opening tax asset remaining lives. This requires the adjustment of the remaining tax asset lives of the opening tax asset base as at 1 July 2011. The AER also accepts NT Gas's revised value of gamma consistent with the findings of the Tribunal.

For reasons discussed below, the AER does not accept the forecast tax allowance proposed by NT Gas due to changes in the building block components set out in the final decision. The changes to NT Gas's proposed revenues and costs discussed in the final decision affect the forecast tax allowance. Therefore, AER does not consider NT Gas's proposed forecast cost of corporate income tax has not been estimated on a reasonable basis and does not represent the best estimate in the circumstances under r. 74(2) of the NGR.

6.4.1 Use of imputation credits (gamma)

In the draft decision, the AER considered the best estimate of gamma was 0.45. This was based on a payout ratio estimate of 70 per cent and an estimated value for a dollar of distributed imputation credits (theta) of 0.65. However, the AER noted that the value of gamma was being considered by the Tribunal, and that the Tribunal's decision on the value of gamma would be taken into account for the final decision on access arrangement for the AGP.

The AER accepts NT Gas's revised access arrangement proposal and considers that the findings of the Tribunal on a gamma of 0.25 should be applied for the purposes of the access arrangement review.[206] There is no new evidence currently before the AER that would cause it to depart from the findings of the Tribunal in respect of gamma.

Consistent with the approach outlined in the draft decision and the findings of the Tribunal, the AER considers that the best estimate of the payout ratio based on the empirical evidence currently available is 70 per cent.

206 Australian Competition Tribunal, *Application by Energex Limited (Gamma) (No. 5)[2011] A CompT 9*, 12 May 2011.

The AER considers that redemption rate studies that have been adjusted on economically justifiable bases [207] can be used as a check on the reasonableness of the market value of imputation credits as estimated from dividend drop-off studies.[208] The AER may consider further evidence on this in the future.

The AER considers that the market value of distributed imputation credits estimated by dividend drop-off studies is inherently imprecise. Dividend drop-off studies infer a value for imputation credits from the prices of stocks trading around the ex-dividend date. It is not imputation credits that are being traded but rather the package of cash dividends and any imputation credits that may be attached. Furthermore, dividend drop-off studies are affected by estimation issues including multicollinearity and heteroscedasticity. In light of these issues the AER considers that a range of evidence should be considered where available.

However, for the purposes of the final decision, the AER has applied a value consistent with findings of the Tribunal. The AER has adopted Strategic Finance Group's (SFG)'s latest dividend drop-off study based estimate of the market value of imputation credits of 0.35 for theta. Combined with a payout ratio estimate of 70 per cent this provides a gamma estimate of approximately 0.25.

6.4.2 Opening tax asset base (remaining tax asset lives)

6.4.2.1 Remaining tax asset lives

In its revised access arrangement proposal, NT Gas did not accept the remaining tax asset lives of assets comprising the opening tax asset base as at 1 July 2001 used to roll forward to 1 July 2011.[209] NT Gas proposed that the draft decision incorrectly calculated the remaining tax asset lives of the opening tax asset base as at 1 July 2011.[210] The AER considers that the remaining tax asset lives for the opening tax asset base as at 1 July 2001 contained in NT Gas's revised access arrangement proposal are consistent with those contained in the modelling in the ACCC final decision for the earlier access arrangement period. Therefore, the AER accepts the tax remaining lives proposed by NT Gas used to roll forward to reflect the remaining tax asset lives of the opening tax asset base as at 1 July 2011. The AER considers that the remaining tax asset lives as at 1 July 2011 are also affected by the adjustment to forecast capex for 2010–11. Therefore, the AER's calculation of the remaining tax asset lives as at 1 July 2011 will also reflect the AER's changes to forecast capex for 2010–11 as discussed in chapter 3 of the final decision.

The AER considers that the changes to NT Gas's forecast capex for 2010–11 have no significant impact on the remaining tax asset lives. However, the AER considers that the remaining tax asset life of buildings be amended to 36 years to maintain consistency with the regulatory asset base. The AER does not agree with NT Gas

---

207 Such as to incorporate any time value loss between when an imputation credits is distributed and when it is redeemed.

208 For example Hathaway and Officer (2004) used their redemption rate estimate for the value of imputation credits as a "background average" to corroborate their dividend drop-off estimate of the market value of imputation credits. See Hathaway and Officer, *The valuation of imputation credits, update 2004*, November 2004, pp. 14–15.

209 NT Gas, *Revised access arrangement submission*, May 2011, pp. 78–79.

210 NT Gas, *Revised access arrangement submission*, May 2011, pp.78–79.

proposed that the change in the remaining tax asset life of buildings from 36 to 39.5 years was to correct an error.[211] NT Gas proposed that the remaining tax asset life of buildings was changed to reflect that there was no capex on buildings over the earlier access arrangement period. However, this was inconsistent with an earlier response to an information request in relation to the buildings asset class. [212] NT Gas did not provide a reason to explain why the remaining asset lives for tax and regulatory purposes should differ.[213] Therefore, the AER does not accept NT Gas's the revised remaining tax asset life of buildings of 39.5 years. This is because the estimate of remaining tax asset life of buildings is not considered to have been derived on a reasonable basis, and is not considered the best estimate available under r.74(2) of the NGR. The AER considers that a remaining tax asset life of 36 years should be used, consistent with the remaining asset life for the regulatory asset base.

6.4.2.2 Opening tax asset base

NT Gas accepted the draft decision on the depreciation rates based on changes to the tax asset lives and depreciation rates determined by the tax commissioner.[214] Therefore, these issues are not discussed further in the final decision.

NT Gas has not accepted the capex forecast for 2010–11 as proposed in the draft decision.[215] The amount of forecast capex for 2010–11 impacts on the opening value of the tax asset base and remaining tax asset lives. The AER's revisions to NT Gas's capex proposal are discussed in chapter 3. The value of the opening tax asset base and estimates of remaining tax asset lives calculated by the AER takes into account these revisions The AER's estimate of NT Gas's opening tax asset values and remaining tax asset lives are shown in table 6.4.

Table 6.4: AER's revised opening tax asset base and remaining tax asset lives

Asset class	Opening tax asset values ($, millions)	Revised remaining tax asset lives (years)
Pipeline	5.0	13.2
Compression	0.3	0.0
Meter stations	2.6	17.6
SCADA and communications	1.5	2.3
Operation and management facilities	1.8	16.0
Buildings	0.0	36.0
Total	11.2	-

Source: AER analysis.

211 NT Gas, Email to the AER, *Re. AER.NTGAS.42–48*, 20 June 2011, p.1.

212 NT Gas, Email to the AER, *Re. AER.NTGAS.21–34*, 23 February 2011, pp. 7–8.

213 NT Gas, Email to the AER, *Re. AER.NTGAS.21–34*, 23 February 2011, pp. 7–8.

214 NT Gas, *Revised access arrangement submission*, May 2011, pp.78–79.

215 NT Gas, *Revised access arrangement submission*, May 2011, pp. 11–12.

The AER considers that the opening tax asset base and remaining tax asset lives presented in table 6.4 have been arrived at on a reasonable basis and represent the best estimate in the circumstances under r. 74(2) of the NGR. The AER proposes to revise the opening tax asset base and remaining tax asset lives as set out in revision 6.1.

6.4.3 Tax loss carry forward

NT Gas has included a calculation of the TLCF over the earlier access arrangement period in its revised access arrangement proposal.[216] NT Gas's revised access arrangement proposal reconstructed the TLCF based on a number of assumptions as set out in section 6.2.3.

The AER assessed NT Gas's proposed analysis of whether a TCLF exists as at 1 July 2011. The analysis covered the period from 1 July 2001 to 30 June 2011 and estimated a TLCF of $0.99 million.[217] The AER is satisfied that the assumptions used by NT Gas to calculate its revenues and costs over the earlier access arrangement period provide a reasonable estimate of the TLCF as at 30 June 2011. NT Gas's revised revenues and costs provide a better estimate of the TLCF than the revenues and costs used by the AER in the draft decision.[218] Based on the available data the AER accepts that the estimated TLCF of $0.99 million has been arrived at on a reasonable basis, and represents the best estimate possible in the circumstances.[219] Therefore, the estimated TLCF needs to be accounted for in the calculation of NT Gas's forecast tax allowance in this access arrangement period.

6.4.4 Forecast tax allowance

The AER has recalculated NT Gas's proposed forecast tax allowance due to changes to the opening tax asset base, remaining tax asset lives, and changes to NT Gas's proposed capex. The AER does not accept the taxation allowance proposed by NT Gas because of changes:

- to the indexation used to roll forward the capital base over the earlier access arrangement period that affect the opening capital base
- to the forecast capex in 2010–11 that affect the remaining tax asset remaining lives
- made to other building block components that impact on the revenues and costs used to derive the forecast tax allowance.

Therefore, the AER does not consider the forecast tax allowance proposed by NT Gas to represent the best estimate possible under r.74(2)(b) of the NGR. The AER requires NT Gas to make revision 6.1 to take account of all the various changes impacting on NT Gas's forecast tax allowance as shown in table 6.5:

216 NT Gas, *Revised access arrangement submission*, May 2011, pp. 83–85.

217 NT Gas, *Revised access arrangement submission*, May 2011, p. 143, attachment A.2, (confidential).

218 AER, *Draft decision*, April 2011, pp. 97–99.

219 NGR, r. 74(2).

Table 6.5: AER tax allowance for the access arrangement period ($m, nominal)

	2011–12	2012–13	2013–14	2014–15	2015–16
Tax allowance	1.1	1.5	1.6	1.7	1.0

Source: AER analysis.

6.5 Conclusion

The AER accepts NT Gas's changes to the remaining tax asset lives as at 1 July 2001 used to roll forward to 1 July 2011, tax loss carry forward, and gamma contained in its revised access arrangement proposal. The AER does not accept the forecast tax allowance proposed by NT Gas because of the changes made to the other building block components in the final decision. These changes impact on NT Gas's revenue and expenditures which affect the estimate of the cost of taxation. The AER considers NT Gas's proposed estimate of the cost of taxation does not represent the best estimate possible in the circumstances.[220] Therefore, the AER proposes to revise the access arrangement information as set out in revision 6.1.

6.6 Revisions

The AER proposes the following revisions to:

Revision 6.1: the revised access arrangement and access arrangement information to reflect the tax allowance set out in table 6.5 of this final decision.

220 NGR, r. 74(2)(b).

7 Operating expenditure

In its draft decision, the AER did not accept NT Gas's operating expenditure (opex) proposal of $73 million ($2010–11) as being prudent and efficient consistent with the NGR and therefore required amendments to; labour cost escalators, corporate overheads, insurance overheads, sales and marketing expenditure, step change for increased integrity works, step change in above-ground station recoating.

Overall, these amendments resulted in the AER accepting $59 million ($2010–11) in opex (excluding debt raising costs), which represented a $14 million ($2010–11) or 19 per cent decrease from the access arrangement proposal.

While accepting the AER's amendments to sales and marketing expenditure and the step change for increased integrity works, NT Gas has not accepted amendments in relation to labour cost escalators, corporate overheads, insurance overheads, and the step change in above-ground station recoating costs. The revised access arrangement proposal represented a $13 million or 22 per cent increase on the draft decision.

In the draft decision, the AER was concerned about a potential overlap of NT Gas's local overheads and APA Group (APA) corporate overheads. In response, NT Gas submitted there was no scope for double counting. However, NT Gas undertook a review of overhead function and responsibilities following the dissolution of the NT Gas governance due to the transfer of ownership to APA. As a result, NT Gas proposed a downward adjustment of $206 000 to base year operating costs. Furthermore, NT Gas provided a more detailed substantiation of its insurance overheads, which was sufficient for the AER to accept the proposed insurance allowance.

The AER has largely accepted the additional information provided in support of NT Gas's proposed opex costs. While the AER does not accept NT Gas's proposed labour cost escalators and debt raising costs, the AER considers the resulting reduction in opex ($0.4 million) is not large enough to warrant revising NT Gas's revised access arrangement proposal. Therefore the AER accepts NT Gas's revised forecast opex of $72 million ($2010–11) as set out in its revised access arrangement proposal. This represents a 3 per cent decrease on the expenditure proposed in NT Gas's December 2010 access arrangement proposal.

7.1 Regulatory requirements

Rule 91 of the NGR provides that opex must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted industry practice, to achieve the lowest sustainable cost of delivering pipeline services.

The access arrangement information for an access arrangement proposal must include opex (by category) over the earlier access arrangement period and a forecast of opex over the access arrangement period and the basis on which the forecast has been derived.[221]

221 NGR, r. 72(1)(a)(ii) and r. 72(1)(e).

Any forecast or estimate must be supported by a statement of the basis of the forecast or estimate.[222] A forecast or estimate, must be arrived at on a reasonable basis, and must represent the best forecast or estimate possible in the circumstances.[223]

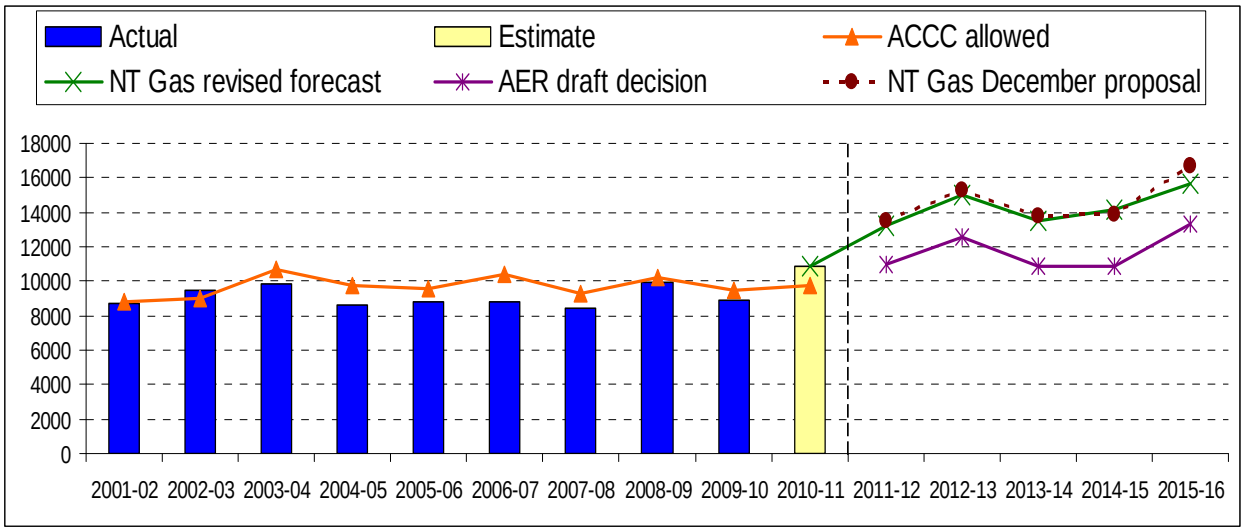
7.2 Revised access arrangement proposal

NT Gas did not amend its access arrangement consistent with the draft decision. In particular, it did not accept the amendments to labour cost escalators, corporate overheads, insurance costs, or its step change for above-ground station recoating costs. NT Gas accepted the AER's amendments to sales and marketing costs, and removed the step change for increased integrity works.[224]

In responding to the AER's concerns regarding double counting of overhead costs, NT Gas has proposed an adjustment to base line opex costs in its revised access arrangement proposal. This negative step change accounts for reduced costs resulting from the movement of some governance arrangements undertaken within the NT Gas local management structure, which will instead be undertaken at a corporate level. Furthermore, NT Gas has accepted the AER's approach to shift debt raising costs from WACC to opex, thereby creating a new opex line item.

NT Gas has proposed a revised total opex forecast which is $13 million (22 per cent) greater than that approved by the AER in the draft decision. NT Gas's revised proposed opex is shown in figure 7.1 and disaggregated in table 7.1.

Figure 7.1: NT Gas's revised proposed opex ($'000, real, 2010–11)



Sources: NT Gas, *Access arrangement submission*, December 2010, pp. 134 & 140; NT Gas, *Revised access arrangement submission*, May 2011, p. 108; AER, *Draft decision*, April 2011, p. 127.
Note: Figure 7.1 excludes debt raising costs.

222 NGR, r. 74(1).

223 NGR, r. 74(2).

224 This step change related to proposed additional dig-up repairs for the purpose of fixing coating defects.

Table 7.1: NT Gas's revised opex forecast ($'000, real, 2010–11)

	2011–12	2012–13	2013–14	2014–15	2015–16	Total
Operations & maintenance	8 810	10 481	8 940	8 977	11 051	**48 258**
Overheads	4 373	4 436	4 470	5 163	4 540	**22 982**
Sales & marketing	62	62	62	62	62	**309**
Total revised opex (excluding debt raising costs)	13 245	14 978	13 471	14 201	15 653	**71 549**
Debt raising costs	65	72	77	76	74	**365**
Total revised opex	**13 310**	**15 051**	**13 549**	**14 278**	**15 727**	**71 914**
Total opex December 2010 proposal (excluding debt raising costs)	13 489	15 235	13 764	13 861	16 646	**72 995**
Total opex approved in draft decision (excluding debt raising costs)	10 946	12 574	10 912	10 860	13 317	**58 609**

Source: NT Gas, *Revised access arrangement submission,* May 2011, p. 108; NT Gas, *Access arrangement submission,* December 2010, p. 134; AER, *Draft decision,* April 2011, p. 127.

NT Gas's opex forecasts are outlined in more detail in the following sections.

7.2.1 Overheads expenditure

7.2.1.1 Corporate and local overheads

The draft decision did not accept NT Gas's proposed corporate overhead costs as it considered that they are likely to double count costs already included in local overhead expenditure.[225] NT Gas did not accept the draft decision and submitted that the forecast level of corporate overheads represented the best estimate possible in the circumstances.[226]

In its revised access arrangement proposal, NT Gas submitted that costs included in the local overheads category are costs that are incurred by the local entity. NT Gas has examined the costs included in this category and has submitted that these costs do not overlap with the costs for the services provided by the corporate group.[227] NT Gas also submitted a report from IDM Partners (the IDM Partners report) to support this view.[228]

NT Gas acknowledged the concerns of the AER regarding the difference between the level of corporate overheads in the earlier access arrangement period and corporate

225 AER, *Draft decision,* April 2011, p. 119.

226 NT Gas, *Revised access arrangement submission,* May 2011, p. 91.

227 NT Gas, *Revised access arrangement submission,* May 2011, p. 88.

228 NT Gas, *Revised access arrangement submission,* May 2011, appendix G (confidential).

overheads forecast for the access arrangement period. NT Gas submitted that the responsibilities of corporate management have changed significantly in recent years, and these changes in the corporate environment would invalidate any comparisons made between current actual costs and the forecast developed in 2001.[229]

NT Gas submitted that, particularly in light of the Global Financial Crisis (GFC), corporate governance procedures have become more onerous.[230] NT Gas also submitted that along with increases in corporate governance costs there have been increases in costs associated with staff recruitment, health and safety and taxation since forecasts were derived for the earlier access arrangement period.[231]

NT Gas further submitted that these costs have been assessed as efficient for other pipelines within APA. NT Gas submitted that the consistency of allocation of costs, and the fact that the level of required corporate overhead costs were validated in the APT Allgas draft decision, indicates that the forecast level of corporate overheads does represent a reasonable forecast.[232]

7.2.1.2 Insurance

In the draft decision, the AER rejected NT Gas's proposed insurance costs on the basis that it had provided insufficient information to substantiate them.[233] In its revised access arrangement proposal NT Gas provided an insurance quote by Marsh Pty Limited (Marsh) to demonstrate the basis on which its forecast was derived.[234] NT Gas submitted that:

- there is a significant increase in insurance costs when compared with the earlier access arrangement period because APA has undertaken a review of its insurance cover [c-i-c]
- its insurance forecast has been developed on the same basis (and by the same broker) as that used and accepted by the AER in respect of the APT Allgas gas distribution network.[235]

NT Gas also expressed concerns that the draft decision did not include any allowance for insurance in its forecast opex.[236] NT Gas submitted that it does not consider the AER's decision not to approve an allowance for insurance as appropriate or consistent with the revenue and pricing principles.[237]

7.2.1.3 Regulatory costs

In the draft decision the AER accepted NT Gas's proposed regulatory costs as being the best estimate or forecast possible as required by r. 74 of the NGR. In its revised

229 NT Gas, *Revised access arrangement submission*, May 2011, p. 91.

230 NT Gas, *Revised access arrangement submission*, May 2011, p. 91.

231 NT Gas, *Revised access arrangement submission*, May 2011, p. 91.

232 NT Gas, *Revised access arrangement submission*, May 2011, p. 91.

233 AER, *Draft decision*, April 2011, p. 121.

234 NT Gas, *Revised access arrangement submission*, May 2011, attachment E (confidential).

235 NT Gas, *Revised access arrangement submission*, May 2011, p. 92.

236 NT Gas, *Revised access arrangement submission*, May 2011, p. 92.

237 NT Gas, *Revised access arrangement submission*, May 2011, p. 92.

access arrangement proposal, NT Gas submitted that, in accordance with the draft decision amendment requiring that the revision submission date be changed to 1 July 2015, NT Gas now expects regulatory costs associated with its next access arrangement proposal to be incurred in 2014–15. In its December 2010 access arrangement proposal, NT Gas scheduled regulatory costs to occur in 2015–16 in line with its proposed revisions submission date of 1 January 2016. Consequently, NT Gas has rescheduled this expenditure to 2014–15 without changing the total level of expenditure over the access arrangement period.[238]

7.2.2 Step changes

NT Gas accepted the draft decision to reject a step change for integrity works and has removed ongoing integrity works from its forecast opex.[239] NT Gas did not accept the draft decision in relation to above-ground station recoating and has also proposed an additional step change relating to a change in local governance structure.[240]

7.2.2.1 Above-ground station recoating

The draft decision did not accept the step change in relation to above-ground station recoating on the basis that the expenditure was already included in the base year cost.[241] In its revised access arrangement proposal, NT Gas submitted that there is no expenditure for above-ground station recoating currently included in the base year, and that the proposed recoating every second year commences in the access arrangement period.[242]

7.2.2.2 Step change resulting from change in local governance structure

In light of the AER's concerns regarding double counting of costs between corporate and local overheads, NT Gas has undertaken a review of its future functional allocations and responsibilities following the dissolution of the current NT Gas governance structure. As a result, NT Gas has identified a number of functions that will no longer be undertaken within the NT Gas local management structure, and which will instead be undertaken at a corporate level.[243]

NT Gas has submitted that the costs associated with these functions are situated in the operations and maintenance category as they are labour related, and all NT Gas local labour costs are allocated to this opex category.[244] NT Gas also submitted that the total reduction in opex costs associated with the removal of these functions is expected to be $1.029 million ($2010–11) over the access arrangement period. NT Gas has adjusted its base year operations and maintenance figure to reflect the annual impact of this negative step change.[245]

238 NT Gas, *Revised access arrangement submission,* May 2011, p. 93.

239 NT Gas, *Revised access arrangement submission,* May 2011, p. 95.

240 NT Gas, *Revised access arrangement submission,* May 2011, pp. 95-96.

241 AER, *Draft decision,* April 2011, p. 125.

242 NT Gas, *Revised access arrangement submission,* May 2011, p. 95.

243 NT Gas, *Revised access arrangement submission,* May 2011, pp. 95-96.

244 NT Gas, *Revised access arrangement submission,* May 2011, p. 96.

245 NT Gas, *Revised access arrangement submission* May 2011, p. 7 attachment F (confidential).

7.2.3 Real labour cost escalators

NT Gas did not accept the AER's amended real cost escalators. In its revised access arrangement proposal, NT Gas has maintained its real cost escalation forecasts as submitted in December 2010.[246]

7.2.4 Debt raising costs

The draft decision accepted NT Gas's proposal to determine benchmark debt raising costs using the AER's standard method. However, the AER updated the inputs used to calculate a debt raising cost unit rate of 10.9 basis points per annum (bppa). In turn, this was applied to the benchmark debt component of the capital base to estimate the total allowance for debt raising costs for the access arrangement period. Although NT Gas proposed that the debt raising cost allowance should be included in the overall WACC, the AER decided to provide the allowance as a separate opex line item to provide transparency.[247]

NT Gas's revised access arrangement proposal accepted the AER's approach to include the debt raising cost as an allowance in opex, and based it on the AER's updated allowance of 10.9 bppa.[248]

7.2.5 Operating expenditure over the earlier access arrangement period

NT Gas has submitted that it identified an incorrect allocation of historic opex between the operations and maintenance category and the overheads category in the years from 2001–02 to 2007–08.[249] NT Gas submitted that it advised the AER of this error on 8 February 2011.[250]

NT Gas has corrected this allocation in its revised access arrangement proposal and proposed that this error does not affect the total opex reported over the earlier access arrangement period. NT Gas also submitted that this error does not affect the base year calculation for forecast opex.[251]

7.3 Summary of submissions

The AER received two submissions in regards to NT Gas's revised opex proposal. These were from:

PWC submitted that:

- NT Gas's high level of corporate overheads and insurance costs should not be accepted

246 NT Gas, *Revised access arrangement submission*, May 2011, p. 94.

247 AER, *Draft decision*, April 2011, pp. 218–220.

248 NT Gas, *Revised access arrangement submission*, May 2011, p. 107.

249 NT Gas, *Revised access arrangement submission*, May 2011, p. 107.

250 NT Gas, email to AER, *NT Gas response to AER questions AER.NTGAS.03-14, 9, 20*, 8 February 2011.

251 NT Gas, *Revised access arrangement submission*, May 2011, p. 108.

- corporate overheads are better allocated based on operating costs or headcount as these are more reflective of the actual corporate services delivered.[252]

The NTMEU submitted that:

- the increase in operations and maintenance (O&M) costs allowed by the AER did not reflect the long term historical O&M expenditure
- forecast pigging costs were nearly double when compared to pigging costs in the earlier access arrangement period
- it agreed with the AER's approach to real labour cost escalation and considered that it is more robust than the approach proposed by NT Gas
- there was a need to incorporate some insurance costs and the AER should have made some allowance for this in the draft decision. However, it considered that NT Gas's approach to calculating insurance costs was not appropriate
- there was an incentive for APA to allocate more corporate costs to regulated subsidiaries (and away from unregulated subsidiaries) if it could do so
- NT Gas provided a listing of the functions that the corporate group provides, but failed to identify whether there had been any increase in scope
- the AER should have allowed continuation of the local overhead, corporate overhead and insurance costs at the rate NT Gas had been incurring these costs
- it agreed with the AER's assessment of sales and marketing and noted that the need for sales and marketing is limited as prospective users would be aware that there was no other facility available in the Northern Territory to transport gas.[253]

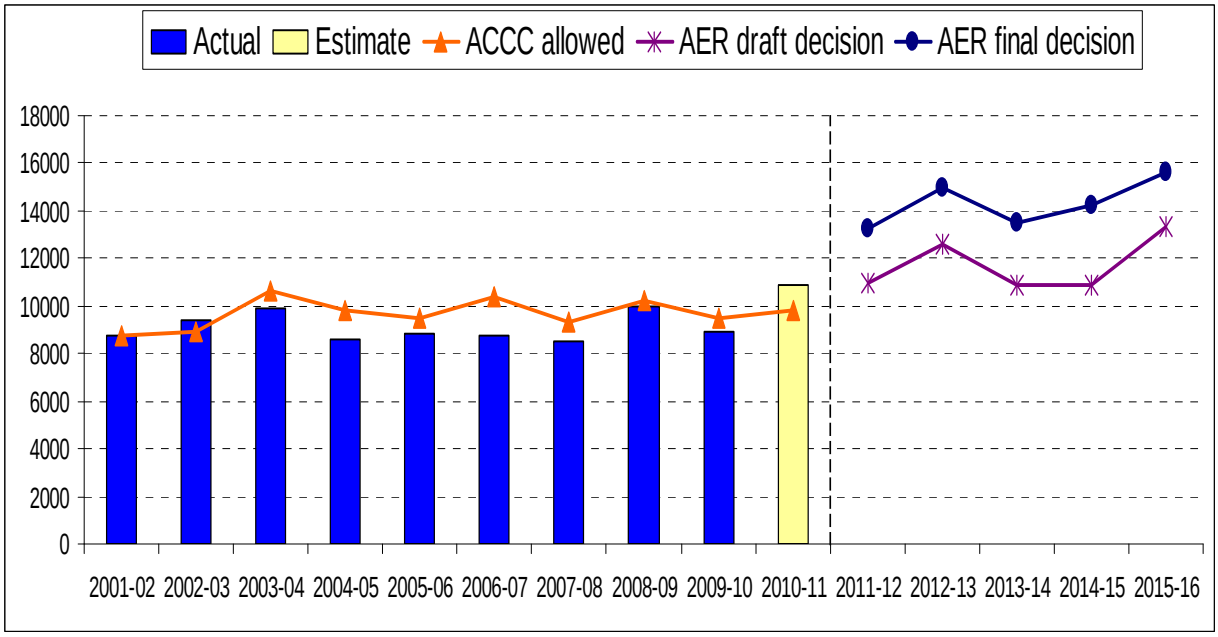
7.4 AER's consideration

The AER accepts NT Gas's revised opex proposal except for its revised labour cost escalators and updated debt raising costs. While not accepting NT Gas's revised real labour cost escalators and debt raising costs, the AER considers that the resulting reduction in opex ($0.4 million ($2010–11)) is not large enough to warrant revising NT Gas's revised forecast opex. The AER's final decision, which is to approve NT Gas's revised forecast opex is set out in figure 7.2.

252 PWC, *Submission to the AER*, June 2011.

253 NTMEU, *Submission to the AER*, June 2011, pp. 24-38.

Figure 7.2: AER's final decision forecast opex ($'000, real, 2010–11)



Source: NT Gas, *Access arrangement submission*, December 2010, p. 140; NT Gas, *Revised access arrangement submission*, May 2011, p. 108; AER, *Draft decision*, April 2011, p. 127; AER analysis.
Note: Figure 7.2 excludes debt raising costs.

The AER's consideration of NT Gas's proposed labour cost escalators and debt raising costs as well as other opex items in NT Gas's revised access arrangement proposal the AER accepts, are discussed below. The other opex items which the AER accepts are:

- overheads expenditure relating to:
    - corporate and local overheads
    - insurance
    - regulatory costs
- O&M step changes resulting from:
    - above-ground station recoating
    - change in local governance structure
- opex over the earlier access arrangement period.

7.4.1 Overheads expenditure

7.4.1.1 Corporate and local overheads

The AER accepts NT Gas's forecast corporate overhead costs and considers that they are costs which would be incurred by a prudent service provider acting efficiently as

required by r. 91 of the NGR. The AER also considers that the level of corporate overhead expenditure proposed by NT Gas represents the best estimate possible in the circumstances as required by r. 74(2)(b) of the NGR.

NT Gas has submitted that the AER has assessed and accepted the level of corporate costs for other APA pipelines using a consistent allocation methodology.[254] In the draft decision, the AER's concern with regard to NT Gas however was whether the method for calculating the corporate overhead allocation should differ from that of other pipelines. The AER had concerns about an apparent double counting of costs between local and corporate overheads. It considered that a number of corporate functions which are normally undertaken by APA are, in the case of NT Gas, undertaken locally and are therefore already included in local overheads.[255]

In its revised access arrangement proposal, NT Gas submitted that there is no overlap in the cost categories of its local overheads with the costs for services provided by the corporate group. As a result it concluded that there is no scope for double counting between local and corporate overheads.[256] To support this conclusion NT Gas provided details of the categories of costs included in its local overhead account as well as the functions attributed to the APA corporate costs.[257] NT Gas also provided the IDM Partners report which concluded that NT Gas's resource levels are appropriate and that there is no double counting of operations and asset management costs between NT Gas and APA .[258]

The AER is satisfied that NT Gas has demonstrated that the cost categories and functions of its local and corporate overheads are significantly different. Consequently the AER considers that there is little scope for double counting between local and corporate overheads. As a result, the AER considers that NT Gas's corporate overhead allocation methodology is appropriate and consistent with r. 91 of the NGR.

Submissions received from PWC and the NTMEU raise concerns regarding the methodology used to derive the forecast corporate overhead costs. PWC raised concerns regarding the allocation of overhead costs on the basis of pipeline revenue.[259] The NTMEU submitted that there was an incentive on APA to allocate more corporate costs to regulated subsidiaries if it could do so.[260] NT Gas submitted that corporate costs have been allocated on a consistent basis across the organisation.[261] The AER has considered the available information and is of the view that the method NT Gas has used represents the best forecast possible in the circumstances.[262] The AER also considers that the overhead allocation methodology is

254 NT Gas, *Revised access arrangement submission,* May 2011, p. 91.

255 AER, *draft decision,* April 2011, pp. 119–120.

256 NT Gas, *Revised access arrangement submission,* May 2011, p. 89.

257 NT Gas, *Revised access arrangement submission,* May 2011, pp. 88–90.

258 NT Gas, *Revised access arrangement submission attachment G – IDM Partners, NT Gas Pty Limited operating resource review independent expert report,* 25 May 2011, p. 15 (confidential).

259 PWC, *Submission to the AER,* June 2011.

260 NTMEU, *Submission to the AER,* June 2011, p. 35.

261 NT Gas, *Revised access arrangement submission,* May 2011, p. 91.

262 NGR, r. 74(2)(b).

consistent with previous AER and ACCC gas decisions relating to APA gas assets and electricity assets.[263]

The NTMEU also raised further concerns regarding the increase in forecast corporate overhead costs and submitted that NT Gas had failed to identify whether there was any increase in scope.[264] NT Gas provided several reasons to explain the increase in its forecast corporate overhead costs when compared to the forecast corporate overhead costs approved for the earlier access arrangement period. It submitted that the responsibilities of corporate management have significantly changed in recent years which have led to increases in costs. As an example, NT Gas submitted that there has been a substantial increase in the requirements associated with corporate governance, human resourcing, health and safety and taxation law.[265]

During the earlier access arrangement period NT Gas did not recover the full allocation of corporate overhead costs from users as the existing negotiated service contract did not allow the recovery of these costs through the tariff. As a result the remaining unallocated corporate costs were incurred at the corporate level.[266] Due to this, the AER is unable to make a comparison between NT Gas's forecast corporate overhead costs and actual costs incurred the earlier access arrangement period. Despite this, the AER considers that NT Gas has provided sufficient justification as to the increase in its proposed forecast corporate overhead costs when compared to the approved forecast costs for the earlier access arrangement period. As a result, the AER considers that NT Gas's proposed forecast corporate overhead costs are the best estimates possible in the circumstances as required by r. 74(2)(b) of the NGR.

7.4.1.2 Insurance

The AER accepts NT Gas's proposed insurance costs as a reasonable forecast and considers that it is the best forecast or estimate possible in the circumstances as required by r. 74(2) of the NGR. The AER considers that NT Gas has provided a satisfactory explanation of the basis of its insurance cost forecast with the inclusion of an insurance estimate by Marsh Pty Ltd in its revised access arrangement proposal.[267]

The NTMEU submitted that the approach used by NT Gas in its insurance assessment is not appropriate as NT Gas has previously been provided with insurance cover for its AGP assets.[268] The AER considers that previous insurance costs are not comparable as APA had previously [

c-i-c

].[269]

---

263 APT Allgas, *Access arrangement submission: 1 July 2011 – 30 June 2006*, September 2010, pp. 132-134; ACCC, *Draft decision: Revised access arrangement by GasNet Australia Ltd for the principal transmission system*, November 2007, p. 116., AER, *Final decision: Electricity transmission network service providers – Directlink & Murraylink amended cost allocation methodologies*, March 2010.

264 NTMEU, *Submission to the AER*, June 2011, pp. 31-36.

265 NT Gas, *Revised access arrangement submission*, May 2011, p. 91.

266 NT Gas, *Access arrangement submission*, December 2010, p. 121.

267 NT Gas, *Revised access arrangement submission*, May 2011, a*ttachment E* (confidential).

268 NTMEU, *Submission to the AER*, June 2011, p. 34.

269 NT Gas, *Revised access arrangement submission*, May 2011, p. 92.

The AER is satisfied that the use of an estimated replacement value is an acceptable basis to forecast insurance costs. The AER also considers that the approach used by NT Gas to forecast insurance costs is consistent with the approach approved by the AER in relation to APT Allgas.[270]

7.4.1.3 Regulatory costs

The AER accepts that NT Gas's regulatory costs will be incurred earlier due to amendment 12.11 in the draft decision, which altered the proposed revision submission date for an access arrangement proposal. The AER considers that it is reasonable to alter the timing of NT Gas's regulatory costs on this basis and therefore accepts NT Gas's revised access arrangement proposal which submits that regulatory costs will be incurred in 2014–15.

7.4.2 Step changes

7.4.2.1 Above-ground station recoating

The AER accepts NT Gas's proposed step change relating to above-ground station recoating as being consistent with r. 91 of the NGR. The AER considers that this expenditure is not included in NT Gas's base year costs and is therefore justified and represents the best forecast or estimate possible in the circumstances as required by r. 74(2)(b) of the NGR. Therefore the AER accepts that it is appropriate to include this expenditure as a step change in forecast opex.

In its revised access arrangement proposal, NT Gas submitted that expenditure associated with above-ground station recoating was not included in its base year costs and that the proposed two yearly schedule for recoating commences in the access arrangement period.[271] NT Gas agreed with the AER that the schedule of above-ground station recoating expenditure submitted in its December 2010 access arrangement proposal indicated that this expenditure was incurred in the base year. NT Gas confirmed that this expenditure was not included.[272]

In relation to the level of expenditure for above-ground station recoating, NT Gas submitted that the forecast cost of $155 000 ($2010–11) over the access arrangement period provides for a crew to strip, inspect and recoat five average sized stations.[273] Wilson Cook considered that this step change would meet its usual criteria for step changes.[274] As this expenditure has not been incurred previously and it has not been included in the base year costs, the AER considers that this expenditure represents the best forecast or estimate possible in the circumstances as required by r. 74(2)(b) of the NGR. The AER also considers that this expenditure is justified and is expenditure that would be incurred by a prudent service provider acting efficiently to achieve the lowest sustainable cost and is therefore consistent with r. 91 of the NGR.

---

270 APT Allgas, *Access arrangement submission effective 1 July 2011—30 June 2016*, September 2010, p. 94.

271 NT Gas, *Revised access arrangement submission,* May 2011, p. 95.

272 NT Gas, *Revised access arrangement submission,* May 2011, p. 95.

273 NT Gas, *Asset management plan – Amadeus Gas Pipeline 2011–2016,* December 2010, p. 26 (confidential).

274 Wilson Cook, *Review of expenditure in relation to the Amadeus Gas Pipeline,*14 January 2011, p. 2.

7.4.2.2 Change in local governance structure

The AER accepts NT Gas's proposed negative step change resulting from a change in local governance structure. The AER considers that the negative step change to the base year of $206 000 ($2010–11) is required to ensure that forecast opex consists of incurred expenditure only as required by r. 91 of the NGR. The AER also considers that the removal of this opex addresses concerns raised by the AER regarding double counting of costs in the draft decision.[275]

As outlined in the draft decision, given that NT Gas will no longer be governed by an independent board at the end of the current finance lease, the AER would expect to see a reduction in associated opex following this restructure.[276] This reduction in opex should offset the associated increase in corporate overhead costs as additional functions will be shifted from NT Gas to APA.

In its revised access arrangement proposal, NT Gas submitted that it had undertaken a review of its management and business service functions in light of the AER's concern over double counting of overhead costs.[277] [

c-i-c

.]

7.4.3 Real labour cost escalators

The AER does not consider that NT Gas's revised real labour cost escalation forecasts are made on a reasonable basis, or represent the best forecasts possible in the circumstances as required under r. 74 of the NGR.

The AER sets out a detailed analysis of its considerations in relation to real labour cost escalators in appendix B.

7.4.4 Debt raising costs

The AER accepts that a benchmark debt raising cost unit rate of 10.9 bppa allows for the best estimate of debt raising costs as required under r. 74 of the NGR. Therefore, the AER considers that a debt raising cost allowance of $0.31 million ($2010–11) represents costs that would be incurred by a prudent service provider in line with r. 91 of the NGR.

As discussed in chapter 5 of the final decision, the AER has calculated a WACC of 9.73 per cent. The WACC is similar to the discount rate used in the draft decision to

275 AER, *Draft decision*, April 2011, pp. 119–121.

276 AER, *Draft decision*, April 2011, p. 119

277 NT Gas, *Revised access arrangement submission*, May 2011, p. 95.

determine the benchmark debt raising cost unit rate of 10.9 bppa.[278] Accordingly, the AER confirms that the appropriate unit rate is 10.9 bppa for the final decision.

NT Gas has an opening capital base of $92.1 million, which leads to a notional debt component of $55.3 million at the assumed gearing ratio (60 per cent). This amount of debt requires one standard size ($250 million) bond issue. The benchmark unit rate multiplied by the debt component of NT Gas's opening capital base results in a total allowance of $0.31 million ($2010–11) for debt raising costs for the access arrangement period.

7.4.5 Operating expenditure over the earlier access arrangement period

The AER accepts NT Gas's changes to its opex over the earlier access arrangement period. The AER is satisfied that this change does not impact on the total opex reported over the earlier access arrangement period nor does it impact on the base year calculations.

NT Gas has used 2009–10 as its base year for calculating its forecast operations and maintenance expenditure and local overhead costs. The AER considers that NT Gas's reallocation of historic costs for 2001–02 to 2007–08 will not affect its base year calculations and will therefore not impact on NT Gas's forecast costs for the access arrangement period.

7.5 Conclusion

While the AER does not accept NT Gas's proposed real labour cost escalators and debt raising costs, the AER considers that the resulting reduction in opex ($0.4 million) is not large enough to warrant revising NT Gas's revised access arrangement proposal. Therefore the AER proposes to approve NT Gas's proposed revised forecast opex as set out in table 7.1 of this decision.

278 AER, *Draft decision*, April 2011, p. 219. There is a difference of 0.01 per cent which does not impact on the benchmark debt raising cost unit rate.

8 Total revenue

The AER calculated a total revenue requirement for NT Gas over the access arrangement period of $146.5 million (nominal), compared to $170.3 million (nominal) proposed by NT Gas. The main reasons for the difference are the reductions required by the AER to NT Gas's proposed WACC and forecast capex over the access arrangement period.

The AER considers that the individual components of the revenue requirement it has calculated are efficient and satisfy the revenue and pricing principles under section 24 of the NGL.

Based on the AER's calculated revenue and demand forecasts, the approved tariff for reference services is 14.4 per cent lower than the tariff proposed by NT Gas in the first year of the access arrangement period. The approved reference tariff will decrease each year only by the rate of change in CPI, consistent with the approach proposed by NT Gas.

8.1 Regulatory requirements

Rule 72(1)(m) of the NGR provides that the access arrangement information for a full access arrangement proposal must include the total revenue to be derived from pipeline services for each regulatory year of the access arrangement period.

Rule 76 of the NGR provides that total revenue is to be determined for each regulatory year of the access arrangement period using the building block approach. The building block components are:

- a return on the projected capital base for the year
- depreciation on the projected capital base for the year
- forecast operating expenditure for the year
- the estimated cost of corporate income tax for the year (if applicable)
- any penalty/reward from the operation of an incentive mechanism.

8.2 Revised access arrangement proposal

NT Gas did not accept the draft decision amendment 8.1 to amend NT Gas's total revenue.[279] Instead, NT Gas's proposed a number of revisions to components affecting revenues and costs. The component changes as discussed in the relevant final decision chapters are:

- rate of return on capital
- regulatory depreciation
- capital and operating expenditure forecasts

279 NT Gas, *Revised access arrangement information*, May 2011, p. 35.

- estimate of forecast cost of taxation.[280]

The revised access arrangement proposal sets out proposed total revenue requirements for each year of the access arrangement period and X factors, as set out in table 8.1 below.

Table 8.1: NT Gas's proposed annual revenue requirements and X factors ($'000, nominal, unless otherwise stated)

	2011–12	2012–13	2013–14	2014–15	2015–16
Total revenue building blocks					
Return on capital	11 192	12 663	13 855	14 078	13 986
Regulatory depreciation	7243	2834	2955	3197	798
Operating expenditure	13 652	15 834	14 620	15 803	17 854
Tax allowance	2782	1779	1910	1985	1242
X factors(%)		0	0	0	0
Revenue requirement	34 869	33 109	33 341	35 063	33 880

Source: NT Gas, *Revised access arrangement information*, May 2011, p. 35, NT Gas, *Revised access arrangement submission*, May 2011, p. 111.

8.3 Summary of submissions

Although, the AER received submissions on individual items that contribute to total revenue, no submissions were made on NT Gas's total revenue.

8.4 AER considerations

The total revenue building blocks proposed by NT Gas are addressed in the AER's analysis and considerations in Part A of the final decision.

8.4.1 P_0 adjustment and X factors

The P_0 adjustment indicates the increase in the total revenue requirement in the first year of the access arrangement period, while the X factors indicate subsequent movements in tariffs. The X factors are the smoothing adjustment to subsequent years required to maintain the present value of revenues. NT Gas has proposed nil X factors over the access arrangement period.[281] The AER accepts NT Gas's proposed X factors for its revenue requirement for the access arrangement period. The AER also accepts NT Gas's proposed P_0 as it ensures NT Gas's revenue requirement is achieved while maintaining its net present value.

280 NT Gas, *Revised access arrangement information*, May 2011, pp. 9,12,19,35.

281 NT Gas, *Revised access arrangement submission*, May 2011, attachment A3 (confidential).

8.4.2 Total revenue, P_0 adjustment and X factors

The AER has estimated NT Gas's total revenue, P_0 adjustment and X factors based on its analysis and consideration of the building block components discussed in the chapters in Part A of the final decision. These changes have decreased NT Gas's proposed revenue by 14.0 percent.

The AER's final decision results in a total revenue requirement over the access arrangement period of $146.5 million (nominal), compared to $170.3 million (nominal) proposed in the revised access arrangement proposal. The main reasons for the difference reflect the AER's decision not to approve:

- the proposed WACC for the AGP
- the revised capex forecasts
- real labour cost escalators

These estimations are summarised in Table 8.2.

Table 8.2: AER's conclusion on NT Gas's annual revenue requirements and X factors ($m, nominal, unless otherwise stated)

	2011–12	2012–13	2013–14	2014–15	2015–16
Return on capital	9.0	10.3	10.2	10.0	9.9
Regulatory depreciation	2.7	2.8	3.0	3.2	0.8
Operating expenditure	13.6	15.8	14.6	15.8	17.8
Tax allowance	1.1	1.5	1.6	1.7	1.0
Total	26.5	30.3	29.4	30.8	29.5
Smoothed revenue path	27.8	28.6	29.3	30.0	30.8
NT Gas X factor (%) (revised access arrangement proposal)	0.0	0.0	0.0	0.0	0.0
AER approved X factor (%)	0.0	0.0	0.0	0.0	0.0
AER approved X factor tariff revenue (%)	0.0	0.0	0.0	0.0	0.0

Source: Table 8.2 is based on information from Part A of the final decision.

There are no real price changes for reference services tariffs as it will be indexed by the change in CPI each year.

8.5 AER conclusion

The AER has made amendments to NT Gas's proposed forecast capex, WACC and real labour cost escalators. As a consequence, the AER does not approve the annual

revenue requirement proposed by NT Gas because it does not comply with r. 76 of the NGR. The AER proposes revisions to the revenue requirement in accordance with changes to the various revenue components, as discussed in the relevant chapters of the final decision. Therefore, the AER proposes to revise the total revenue as set out in revision 8.1.

8.6 Revisions

The AER proposes the following revisions to:

Revision 8.1: the revised access arrangement information to delete Table 12.1 and replace it with the following:

Table 8.3: Forecast total revenue requirements for the access arrangement ($m, 2010–11, unless otherwise stated)

	2011–12	2012–13	2013–14	2014–15	2015–16
Return on capital	9.0	10.3	10.2	10.0	9.9
Regulatory depreciation	2.7	2.8	3.0	3.2	0.8
Operating expenditure	13.6	15.8	14.6	15.8	17.8
Tax allowance	1.1	1.5	1.6	1.7	1.0
Total	26.5	30.3	29.4	30.8	29.5
Smoothed revenue path	27.8	28.6	29.3	30.0	30.8
X factor tariff revenue(%)	0.0	0.0	0.0	0.0	0.0

9 Demand forecasts

Demand forecasts are used to calculate the reference tariffs and can also influence forecast capital and operating expenditure linked to network growth.

The draft decision did not require any amendments to NT Gas's proposed demand forecasts. The AER considers that the demand forecasts for the AGP are reasonable and in accordance with the requirements of the NGR.

9.1 Regulatory requirements

Rules 72(1)(a)(iii)(A) and 72(1)(d) of the NGR provide that the access arrangement information for a full access arrangement proposal e must include:

- usage of the pipeline over the earlier access arrangement period showing, for a transmission pipeline, minimum, maximum and average demand for each receipt or delivery point, and user numbers for each receipt or delivery point

- to the extent that it is practicable, a forecast of pipeline capacity and utilisation of pipeline capacity over the access arrangement period, a forecast of pipeline capacity and utilisation of pipeline capacity over that period and the basis on which the forecast has been derived.

Rule 74(1) of the NGR provides that any information in the nature of a forecast or estimate must be supported by a statement explaining the basis of the forecast or estimate.

Rule 74(2) of the NGR provides that a forecast or estimate must be arrived at on a reasonable basis and represent the best forecast or estimate possible in the circumstances.

9.2 Revised access arrangement proposal

In chapter 9 of the draft decision, the AER did not identify any required amendments to demand forecasts in NT Gas's access arrangement proposal. NT Gas's revised access arrangement proposal in relation to demand forecasts is unchanged from December 2010 access arrangement proposal.

9.3 Summary of submissions

The AER received one submission on NT Gas's demand forecasts from Northern Territory Major Energy Users (NTMEU), which submitted that:

- the view that PWC will be the only user of the AGP in future needs to be reassessed

- there is potential for NT Gas to over-recover its allowed revenue by under-forecasting the amount of gas that might be transported to various parts of the

AGP, particularly as there is now significant change to the electricity supply structure in the Northern Territory.[282]

9.4 AER's consideration

The AER's consideration of NT Gas's proposed demand forecasts are set out in chapter 9 of the draft decision.

The AER considers that the information in NTMEU's June submission on proposed demand forecasts are similar to that which was provided in NTMEU's submission on NT Gas's December 2010 access arrangement proposal.[283] NTMEU submitted concerns around NT Gas's forecasts in relation to the usage of the AGP over the access arrangement period.[284] NTMEU submitted that the current user forecasts by NT Gas indicate PWC as being the only user which is expected to utilise full capacity of the AGP. NTMEU submits therefore, that these forecasts do not take into account that future users may seek access to the AGP.[285]

The AER considers that these issues are no different to those raised in the draft decision. The AER's consideration of NTMEU's earlier submission is contained in the draft decision.[286]

9.5 Conclusion

As set out in chapter 9 of the draft decision, the AER considers that the proposed demand forecasts are arrived at on a reasonable basis and represent the best forecast or estimate possible in the circumstances in accordance with r. 74(2) of the NGR.[287] The AER approves NT Gas's demand forecasts as these meet requirements of r. 72(1)(a)(iii), r. 72(1)(d), and r. 74 of the NGR.

282 NTMEU, *Submission to the AER*, June 2011 p. 39.

283 NTMEU, *Submission to the AER*, February 2011, pp 47–49.

284 NTMEU, *Submission to the AER*, June 2011, p 39.

285 NTMEU, *Submission to the AER*, June 2011, p 39.

286 AER, *Draft decision*, April 2011, pp. 140–141.

287 AER, *Draft decision*, April 2011, p. 146.

10 Reference tariffs

An access arrangement is required to set out how a service provider intends to charge for reference services. The NGR requires that the basis for setting reference tariffs be explained by defining the tariff classes and comparing the revenue to be raised by each reference tariff with the cost of providing each individual reference service.

In the draft decision, the AER considered that NT Gas's method of setting tariffs was appropriate. The AER accepted NT Gas's proposed allocation of revenue to the single reference service, establishment of a single class of user for the firm service, and capacity based charging for that user class in the draft decision. NT Gas has proposed no further change in its revised access arrangement proposal. However, NT Gas submitted a revised tariff taking into account the building blocks in its revised access arrangement proposal. Although the AER accepts most elements of NT Gas's revised access arrangement proposal, the AER does not accept NT Gas's proposed tariffs. The AER requires NT Gas to amend its tariffs to reflect the revisions made to the building blocks in the final decision. The AER requires that the reference tariff for 2011–12 be set at $0.6513 per gigajoule (GJ) of delivery point maximum daily quantity (MDQ).

10.1 Regulatory requirements

With respect to reference tariffs, the NGR requires NT Gas to:

- describe the proposed approach to the setting of tariffs, including the method used to allocate costs, and demonstrate the relationship between tariffs and costs and provide a description of any applicable pricing principles (r. 72(1)(j))
- demonstrate that total revenue is allocated between reference and other services in the same ratio that costs are allocated between these services (r. 93(1)&(2))
- for each reference tariff, show how it would recover the portion of revenue attributable to that reference service and, to the extent practicable, attributable to users or user classes (r. 95(1))
- allocate directly attributable costs to users or user classes to which they are referable (r. 95(3)(a))
- allocate indirect costs between users or user classes in a manner consistent with the revenue and pricing principles (r. 95(3)(b)).
- specify the tariffs for each reference service (r. 48(1)(d)(i) & (ii))

The AER has limited discretion in assessing compliance with r. 95.[288]

288 NGR r. 40(2). Under r. 40(2) of the NGR, limited discretion means the AER may not withhold its approval to an element of an access arrangement proposal that is governed by the relevant provision if the AER is satisfied that it complies with applicable requirements of the NGL, and is consistent with applicable criteria (if any) prescribed by the NGL.

10.2 Revised access arrangement proposal

In the draft decision, the AER accepted NT Gas's proposed tariff structure, including its proposal to allocate all its revenue to the firm service, to establish a single user class on the pipeline, and to move to a capacity charge from a throughput charge.[289] However, the draft decision required NT Gas to amend the reference tariff to reflect changes in the various building blocks that make up the revenue requirement.

NT Gas made no further changes to its tariff structure in its revised access arrangement proposal.[290] That is, it proposed a single user class on the pipeline[291] and that the tariff would based on capacity rather than throughput as was the case over the earlier access arrangement period.[292]

For 2011–12, NT Gas proposed a revised reference tariff of $0.7605 per GJ, which is 0.12 per cent higher than compared with $0.7596 per GJ submitted in the December 2010 access arrangement proposal.[293] NT Gas's revised tariff is based on a smoothed revenue requirement for 2011–12 of $32.5 million (nominal).[294] In subsequent years, NT Gas proposed the tariff rise by consumer price index (CPI) only.[295]

10.3 Summary of submissions

The AER received one submission in regard to reference tariffs from Northern Territory Major Energy Users (NTMEU).

NTMEU submitted that:

- the AER must reassess the likelihood of PWC being the only user on the pipeline, considering possible changes in the structure of the Northern Territory (NT)'s energy market
- a possible change could be the breaking of the monopoly that PWC has over power generation in the NT
- the AER must consider reference tariffs for likely transportation options because otherwise there is significant potential for NT Gas to enhance its revenue for using a regulated asset.[296]

289 AER, *Draft decision*, April 2011, p. 156.

290 NT Gas, *Revised access arrangement information*, May 2011, pp. 29–30.

291 NT Gas, *Revised access arrangement information*, May 2011, pp. 29–30.

292 AER, *Draft decision*, April 2011, pp. 155–156.

293 NT Gas, A*ccess arrangement proposal*, December 2010, p. 21, NT Gas, *Revised access arrangement proposal*, May 2011, p. 26.

294 NT Gas, *Revised access arrangement submission*, May 2011, p. 116.

295 NT Gas, *Revised access arrangement proposal*, May 2011, p. 14, NT Gas, *Revised access arrangement information*, May 2011, p. 30.

296 NTMEU, *Submission to the AER*, June 2011, p 39.

10.4 AER's consideration

10.4.1 Allocation of revenue to the reference service, establishment of user classes and allocation of costs

The AER's consideration of NT Gas's proposed tariff structure is set out in chapter 10 of the draft decision.[297] The draft decision accepted the proposed single tariff structure to replace the three zonal tariffs which operated under the earlier access arrangement.

The AER considers that the NTMEU submission does not provide any additional information to that which was provided in the NTMEU's submission on NT Gas's December 2010 access arrangement proposal.[298] The AER's consideration of the NTMEU's earlier submission is contained in the draft decision.[299]

10.4.2 Capacity based charging

The AER's consideration of NT Gas's proposed capacity based charging is set out in chapter 10 of the draft decision.[300] The AER considers that a capacity based charge, rather than one based on throughput, is consistent with the requirements of the NGR.[301]

10.4.3 Calculation of reference tariffs

In the draft decision, the AER accepted that the reference tariff be charged on the basis of daily delivery point capacity reservation.[302] NT Gas's revised access arrangement proposal has maintained this approach. The AER requires the reference tariffs to be adjusted based on the building block components (and hence the revenue requirement) as set out in the final decision. The AER proposed a revised tariff of $0.6513 per GJ for 2011–12 compared to NT Gas's proposed tariff of $0.7605 per GJ for 2011–12. The AER considers that NT Gas's revised reference tariff is not consistent with r. 95 of the NGR and therefore proposes to revise the reference tariff as set out in revision 10.1.

10.5 Conclusion

As set out in chapter 10 of the draft decision, the AER considers that:

- the proposed tariff structure is consistent with r. 95 of the NGR
- NT Gas's proposed capacity based charging is consistent with r. 95 of the NGR.

The AER does not approve NT Gas's proposed tariffs as it does not reflect the building block components as discussed in the final decision and is, therefore, not consistent with r. 95 of the NGR. The AER's proposed revision 10.1 is set out below.

297 AER, *Draft decision*, April 2011, pp. 149–155.

298 NTMEU, *Submission to the AER*, February 2011, pp 60–62.

299 AER, *Draft decision*, April 2011, p. 150

300 AER, *Draft decision*, April 2011, pp. 155–156.

301 NGR, r. 95.

302 AER, *Draft decision*, April 2011, p. 156.

10.6 Revisions

The AER proposes the following revisions:

Revision 10.1: revise the 2011–12 reference tariff to $0.6513 per GJ of delivery point MDQ.

11 Tariff variation mechanism

An access arrangement is required to set out how tariffs may be varied during the access arrangement period. NT Gas has proposed a tariff variation mechanism that allows tariffs to be adjusted by inflation and, where applicable, an 'X' factor for each year. In addition, NT Gas has proposed a mechanism for adjusting tariffs in the event of an approved cost pass through.

The purpose of the tariff variation mechanism is, amongst other things, to permit the building block revenue to be recovered over the access arrangement period smoothly and to take account of actual inflation.

The AER does not accept elements of NT Gas's proposed tariff variation formula, under r. 92(2) of the NGR. The AER considers the 'X' factors must be amended to reflect the changes to the forecast total revenue identified in other chapters of the final decision.

NT Gas has broadly accepted the cost pass through mechanism as specified in the draft decision, but has proposed some changes in its revised access arrangement proposal. The AER has accepted several of these proposed changes, and made a number of further revisions in order to approve NT Gas's revised access arrangement proposal.

11.1 Regulatory requirements

With respect to the tariff variation mechanism, the NGR requires that:

- NT Gas include a mechanism for variation of a reference tariff over the course of an access arrangement period (r. 92(1))
- the reference tariff variation mechanism must be designed to equalise forecast revenue in present value terms from reference services over the access arrangement period, and the portion of total revenue allocated to reference services for the access arrangement period (r. 92(2))
- NT Gas include the service provider's rationale for any proposed reference tariff variation mechanism (r. 72(1)(k))
- a reference tariff variation mechanism may provide for variation of a reference tariff in accordance with a schedule of fixed tariffs; or in accordance with a formula set out in the access arrangement; or as a result of a cost pass through for a defined event; or a combination of 2 or more of these operations. (r. 97(1))
- a formula for variation of a reference tariff may (for example) provide for variable caps on the revenue to be derived from a particular combination of reference services; or tariff basket price control; or revenue yield control; or a combination of all or any of these factors (r. 97(2))
- a reference tariff variation mechanism must give the AER adequate oversight or powers of approval over variation of the reference tariff (r. 97(4))

- in deciding whether a particular reference tariff variation mechanism is appropriate to a particular access arrangement, the AER must have regard to the various factors in r. 97(3) of the NGR including the need for efficient tariff structures; the possible effects of the reference tariff variation mechanism on administrative costs; the regulatory arrangements (if any) applicable to the relevant reference services; the desirability of consistency between regulatory arrangements for similar services; and any other relevant factor.

The AER has full discretion in assessing NT Gas's proposed tariff variation mechanism.[303]

11.2 Revised access arrangement proposal

In the draft decision, the AER required amendments to NT Gas's proposed tariff variation mechanism.[304] NT Gas accepted some of the AER's amendments, including the general structure of the cost pass through mechanism. However, NT Gas has proposed a significant number of further technical amendments in its revised access arrangement proposal. Broadly, NT Gas proposed changes to:

- the drafting of the annual tariff variation mechanism in the access arrangement
- elements of the cost pass through mechanism.[305]

11.2.1 Annual tariff variation mechanism

NT Gas did not accept several of the amendments set out in the draft decision relating to oversight and approval of annual tariff variations. Specifically, NT Gas proposed to:

- revise the due date for submitting annual tariff variation notifications from 50 business days before each 1 July of the access arrangement period as set out in the draft decision, to 40 business days before each 1 July. This change requires the AER to make its decision on NT Gas's annual tariff variation within 20 business days, compared to 30 days, as set out in the draft decision[306]
- limit the correction of errors in past annual tariff variations to those in the access arrangement period
- specify that the time value of money to be maintained in the recovery of revenue associated with a cost pass through event
- replace the terminology '*trigger events*' with '*cost pass through events*.'[307]

303 NGR r. 40(3).

304 AER, *Draft decision*, April 2011, pp. 170–174.

305 NT Gas, *Revised access arrangement submission*, May 2011, pp. 115–129.

306 NT Gas, *Revised access arrangement submission*, May 2011, p. 120.

307 NT Gas, *Revised access arrangement submission*, May 2011, pp. 120–121.

11.2.2 Cost pass through mechanism

In the draft decision, the AER did not accept NT Gas's proposed general cost pass through event.[308] The draft decision defined the following cost pass through events, which are all subject to a defined materiality threshold as set out in amendment 11.2:[309]

- regulatory change event
- service standard event
- tax change event
- terrorism event
- insurer credit risk event
- insurance cap event
- natural disaster event.

The AER made amendments to the cost pass through tariff variation process, and did not accept NT Gas's proposed '*banking*' of cost pass through tariff variations.[310]

NT Gas has not incorporated all elements of the draft decision, and has proposed changes to the following:

- specific cost pass through event definitions:
    - *regulatory change event*—the event definition should clarify that it refers to material new events, and should remove the requirement that the regulatory change must '*substantially affect the manner in which the Service Provider provides the 'Reference Services''*
    - *service standard event*—delete the word '*substantially*' from the event definition
    - *insurance cap event*—the event definition should allow for costs that occur due to its negligence, fault, or lack of care, and include the requirement that its actions must be intended '*to cause harm*'
    - *insurer credit risk event*—remove the requirement that an insurer be a 'nominated' insurer
    - *natural disaster event*—replace the text '*forecast operating expenditure*' with 'approved revenue requirement'

308 AER, *Draft decision*, April 2011, pp. 165–166.

309 AER, *Draft decision*, April 2011, pp. 170–173.

310 AER, *Draft decision*, April 2011, p. 164.

- *carbon pricing event*—add a new carbon pricing event, which specifies a large number of permutations of form that a potential carbon price could take
- *insurer insolvency event*—add a new event where an insurer insolvency results in a material loss to it as a result of unsatisfied claims

- materiality threshold—*materiality* to be assessed relative to the annualised costs of a cost pass through event.[311] Also, the materiality threshold should only be defined once in the cost pass through section of the access arrangement[312]
- timing of cost pass through tariff variations—the access arrangement should:
  - specify that approved cost pass through tariff variations should take into account the time value of money from any delays in recovery or return
  - allow for costs to be passed through at any point during a regulatory year, where the AER considers is necessary
  - allow for eligible cost pass through variation costs that occur in the final year of the access arrangement period to be passed through in the subsequent access arrangement period[313]
- cost pass through tariff variation process—the AER should have discretion to extend the due date for notifications following the occurrence of cost pass through events, [314] which was set at 90 business days in the draft decision.[315]

11.3 Submissions

No submissions were made on the tariff variation mechanism.

11.4 AER's consideration

The AER's consideration of NT Gas's revised access arrangement proposal is outlined below. Consistent with r. 40(3) of the NGR, the AER has not approved proposed elements of the tariff variation mechanism where it considers a preferable alternative exists that better promotes the requirements in the NGR and NGL. The AER is required to consider the consistency of the proposed mechanism with r. 97 of the NGR; the national gas objective;[316] and the revenue and pricing principles.[317]

11.4.1 Annual tariff variation mechanism

The AER accepts several elements of NT Gas's revised access arrangement proposal on the annual tariff variation mechanism. However, the AER does not accept NT Gas's proposal to shorten the period for assessment of NT Gas's annual tariff

311 NT Gas, *Revised access arrangement submission*, May 2011, p. 123.

312 NT Gas, *Revised access arrangement submission*, May 2011, pp. 123–124.

313 NT Gas, *Revised access arrangement submission*, May 2011, p. 124.

314 NT Gas, *Revised access arrangement submission*, May 2011, p. 125.

315 AER, *Draft decision*, April 2011, p. 174.

316 NGL s. 23.

317 NGL s. 24.

variation notifications, or to limit the AER's ability to correct errors in past tariff variations. The AER's considerations on NT Gas's proposed revisions to the annual tariff variation mechanism are discussed in the following order:

- accounting for the time-value-of-money in '*late*' approvals of annual tariff variations
- due date for annual tariff variation notifications
- correction of errors in past annul tariff variations
- removal of reference to '*trigger events*'.

Accounting for time value of money

The AER does not accept NT Gas's revised access arrangement proposal that the time value of money be accounted for in the adjustment mechanism used when the annual price approval is delayed beyond 1 July.

The AER does not accept that the revised wording in NT Gas's revised access arrangement proposal would allow tariffs to carry over from one year to the next in the case of a late decision. By including a binding requirement that NT Gas be compensated with the time-value-of-money for late decisions diminishes the incentive for NT Gas to submit compliant annual tariff variation notifications within the required time frame. The AER therefore proposes to revise the access arrangement as set out in revision 11.1.

Due date for notifications

The AER does not accept NT Gas's proposed revision to the due date for annual tariff variation notifications. The draft decision requirement that annual tariff variation notifications to be submitted 50 business days prior to 1 July and was consistent with the submission requirements on other regulated gas businesses.[318] NT Gas's annual tariff variations involve a single reference tariff; updated only by consumer price index (CPI), a pre-defined X-factor, and potentially a pre-approved cost pass through amount. In the event of any errors or deficiencies in NT Gas's initial proposal, 20 business days may not allow the AER sufficient time to consult with NT Gas about these errors while ensuring decisions are made within the appropriate time-frame.

The AER does not accept NT Gas's concerns about the administrative burden of submitting an updated notification to the AER when the March to March CPI becomes available.[319] Such a notification would only require updating one tariff by one value, and would allow the AER to make a full and timely assessment of the notification where the initial notification contains any deficiencies. Accordingly, the AER considers that NT Gas's proposed changes to the due date for notifications are not consistent with r. 97(4) of the NGR. The AER therefore proposes to revise the access arrangement as set out in revision 11.1.

318 AER, *Draft decision*, April 2011, p. 164.

319 NT Gas, *Revised access arrangement submission*, May 2011, p. 116.

Correction of errors in past tariff variations

The AER does not accept NT Gas's proposed revision in limiting the AER's ability to correct for errors in past annual tariff variations. Specifically, NT Gas proposed that the AER should only correct errors in variations within the current access arrangement period.[320]

The AER considers that there is no basis to limit the AER's ability to correct an errors in past annual tariff variations if it does come to the AER's attention. The AER considers that limiting its ability to correct such errors through subsequent tariffs would be inconsistent with the recovery of efficient costs under the revenue and pricing principles of the NGL.[321] The AER proposes to revise the access arrangement as set out in revision 11.1.

Reference to trigger events

The AER accepts NT Gas's proposed removal of the reference to '*trigger events*' from section 4.7.2 of the access arrangement, as this better reflects NT Gas's revised access arrangement proposal.

However, the AER considers the terminology '*trigger event*' should be substituted with '*cost pass through event*', leaving the rest of the text undeleted, so it retains the intended effect of the original drafting. Further, the AER considers this revision contributes to a tariff variation mechanism that is consistent with r. 97 of the NGR. The AER proposes to revise the access arrangement as set out in revision 11.1.

11.4.2 Cost pass through mechanism

The AER's consideration of NT Gas's revised access arrangement proposal regarding cost pass through mechanisms are set out below. In its revised access arrangement proposal, NT Gas accepted the AER's broad framework for the cost pass through mechanism, which included a series of defined events subject to a defined materiality threshold. However, NT Gas proposed further amendments to the following:

- specific cost pass through event definitions:
  - regulatory change event
  - service standard event
  - insurance cap event
  - insurer credit risk event
  - natural disaster event
  - carbon pricing event
  - insurer insolvency event
- materiality threshold

320 NT Gas, *Revised access arrangement submission*, May 2011, p. 117.

321 NGL, s. 24.

- timing of cost pass through tariff variations
- cost pass through tariff variation process.[322]

To ensure consistency with the national gas objective[323] and the revenue and pricing principles,[324] the AER considers a pass through mechanism should balance the risk of material and unexpected events that impact on a service provider with the long term interests of users. In particular, the AER considers there should be incentives for a service provider to bear some risk of unexpected events, as this will encourage the service provider to manage or mitigate the costs associated with such events. The AER also considers that any cost pass-through mechanism should be symmetric, such that users will benefit from unexpected events that materially reduce the costs faced by a service provider. Further, the AER considers that a cost pass through mechanism should seek to minimise any administrative costs.

11.4.2.1 Specific cost pass through event definitions

The AER accepts several elements of NT Gas's proposed event definitions, and considers that these definitions are consistent with r. 97 of the NGR; the national gas objective (NGO)[325] and the revenue and pricing principles.[326] Where this is not the case, the AER rejects NT Gas's revised access arrangement proposal, and has proposed to revise the access arrangement as set out in revision 11.2.

Regulatory change event

The AER accepts NT Gas's proposal that the definition of a *regulatory change event* should include the imposition of a *new* regulatory obligations or requirements.

However, the AER considers that the definition should also include the removal of regulatory obligations or requirements, as the removal of a regulatory obligation could equally impact on the costs of reference services. This will ensure that the cost pass through mechanism is symmetrical, and that users benefit from material decreases in costs.

The AER also considers the *regulatory change event* should be revised to eliminate any overlap between the *regulatory change event*, *service standard event* and *tax change event*. The *regulatory change event*, as defined in the draft decision, does not specify that a *regulatory change event* is a change in regulatory obligation that does not fall within any cost pass through event category. The AER considers that the suggested revision does not alter the nature of event that would qualify as a *regulatory change event*, but eliminates any potential overlap between events. The AER also considers that this revised definition is consistent with r. 97 of the NGR. The AER therefore proposes to revise the access arrangement as set out in revision 11.2.

322 NT Gas, *Revised access arrangement submission*, May 2011, pp. 119–128.

323 NGL, s. 23.

324 NGL, s. 24.

325 NGL, s. 23.

326 NGL, s. 24.

Service standard event

The AER accepts NT Gas's revised access arrangement proposal to remove the word '*substantially*' from the definition of the *service standard event*, in keeping with the updated *regulatory change event*.

Insurance cap event

The AER does not accept NT Gas's revised access arrangement proposal to exclude insurance costs over NT Gas's insurance policy limit that arise as a result of '*negligence, fault, or lack of care*'. The AER considers that a pass through regime should not limit the incentives on a service provider to act efficiently, prudently and responsibly.[327] If NT Gas was compensated for all costs exceeding an insurance cap due to its 'negligence, fault, or lack of care', it would face a diminished incentive to avoid negligent behaviour.

In the revised access arrangement proposal, NT Gas submitted that in the absence of a cost pass through above the insurance cap, it would have to insure for a higher level of public liability cover.[328] The AER considers that this would lead to a rise in insurance premiums and, consequently, in NT Gas's opex. Similar arguments were raised in the 2010 Victorian distribution network service providers (DNSPs) final decision which were rejected by the AER.[329]

The AER does not accept NT Gas's proposed revision on the basis that it does not promote the long term interests of users or prospective users as required under the national gas objective.[330] The AER therefore proposes to revise the access arrangement as set out in revision 11.2.

Insurer credit risk event

The AER accepts NT Gas's revised access arrangement proposal to delete the word '*nominated*' from before the word '*insurer*'.[331]

The definition of the insurer credit risk event, as set out in the draft decision, does not specify any nomination process. The AER accepts that, in submitting a cost pass through application, NT Gas would be required to demonstrate that the relevant insurer was an existing insurer. Therefore, subject to the materially threshold being met, an event in which any of NT Gas's existing insurers becomes insolvent would qualify as an '*insurer credit risk event*'.

Natural disaster event

The AER does not accept NT Gas's revised access arrangement proposal which proposes changes to the natural disaster event. Specifically, NT Gas raised concerns that the text '*included within NT Gas's forecast operating expenditure*' in amendment 11.2 of the draft decision should refer to only those insurance costs that have been accepted by the AER. NT Gas therefore submitted that the text should be amended to '*include within NT Gas's approved revenue requirement'*. The AER considers the

327 AER, *Final decision, Victorian distribution determination*, October 2010, pp. 744–798.

328 NT Gas, *Revised access arrangement submission*, May 2011, pp. 121–122.

329 AER, *Final decision, Victorian distribution determination*, October 2010, pp. 792–793.

330 NGL, s. 23.

331 NT Gas, *Revised access arrangement submission*, May 2011, p. 16.

event, as defined in the draft decision, will cover otherwise eligible natural disaster events for which insurance or self insurance is included in its approved opex. Such policies would compensate NT Gas for the event costs, making the cost pass through mechanism unnecessary. The reference to '*forecast operating expenditure*' is consistent with r. 76 of the NGR, and refers to those opex costs approved by the AER.

Carbon price event

The AER does not accept NT Gas's proposed carbon pricing event,[332] and does not consider it necessary to establish a new cost pass through event specific to carbon pricing.

The AER considers that the other '*policy-based*' defined cost pass through events namely, the regulatory change event, service standard event and tax change event are sufficiently comprehensive to capture most events relating to policy changes. Such policy changes are likely to include potential carbon taxes, trading schemes, or other carbon pricing regimes.

The AER considers that the existing 'policy-based' pass through events appropriately provide for the material risks to NT Gas of a carbon price event. The AER considers that this event is consistent with the r. 97 of the NGR. The AER therefore proposes to revise the access arrangement as set out in revision 11.2.

Insurer Insolvency Event

The AER does not accept NT Gas's proposed additional event as it does not consider the definition proposed by NT Gas is sufficiently clear.

However, the AER considers that NT Gas's revised access arrangement proposal addresses circumstances where NT Gas faces material costs but is not in a position to mitigate the risk of the event occurring. The AER considers that these circumstances should be addressed by revising the 'insurer credit risk event', specifically by adding the following text at the end of the definition:

> (c) incurs additional costs associated with self funding an insurance claim, which, would have otherwise been covered by the insolvent insurer.

The AER considers that this event is consistent with the r. 97 of the NGR. The AER therefore proposes to revise the access arrangement as set out in revision 11.2.

11.4.2.2 Materiality threshold

The AER does not accept NT Gas's proposed revision to the definition of the materiality threshold. The materiality threshold is set at one per cent of smoothed forecast revenue requirement, to ensure that costs are only passed through where they significantly impact NT Gas. By annualising costs, a relatively small event that occurred over a short period of time may, when converted into an annual figure, exceed the materiality threshold. This is not consistent with the overall objective of the cost pass through mechanism. The defined materiality threshold is intended to set

332 NT Gas, *Revised access arrangement proposal*, May 2011, p. 16.

clear and transparent guidance for what the AER will accept as a material financial impact. The AER considers the materiality threshold, as defined in the draft decision, is consistent with r. 97 of the NGR; the national gas objective,[333] and the revenue and pricing principles.[334]

The AER accepts that the materiality threshold should only be defined once in the access arrangement, and should be set relative to the smoothed annual revenue requirement included in the AER's approved access arrangement information. Therefore, the AER considers that the materiality threshold as proposed by NT Gas is not consistent with r. 97 of the NGR; the national gas objective,[335] and the revenue and pricing principles.[336] The AER therefore proposes to revise the access arrangement as set out in revision 11.2.

11.4.2.3 Timing of cost pass through tariff variations

The AER does not accept NT Gas's revised access arrangement proposal relating to the timing of cost pass through tariff variations. The AER considers that:

- the AER should take into account 'any other factors the AER considers relevant and consistent with the NGR and NGL' in determining whether to approve a proposed cost pass through event variation. The time value of any delay in the recovery costs associated with a cost pass through events would be one such consideration. The AER will assess NT Gas's proposed or estimated costs against the expenditure requirements under the NGR and NGL before approving any such cost pass through application.

- mid year tariff variations create unnecessary administrative complexity and introduce price volatility for users and prospective users. Where an approved material cost pass through event occurs during a regulatory year, the AER considers NT Gas has sufficient scope to defer other expenditure until the next regulatory year, in order to preserve the reliability of reference services in the interim. The AER therefore does not accept NT Gas's proposal to allow for mid-year tariff variations due to cost pass through events.

- the purpose of a cost pass through mechanism is to allow for tariff variations associated with material unforseen events to occur during an access arrangement period. Costs associated with events in the subsequent access arrangement period should be assessed in the context of the next access arrangement review. The AER therefore does not accept NT Gas's proposal that the costs associated with events occurring in the last year of the access arrangement period should be passed through in the next access arrangement period, under the cost pass through mechanism.

The AER considers that NT Gas's proposed amendments relating to the timing of the cost pass through variations are inconsistent with r. 97 of the NGR; the national gas

333 NGL, s. 23.

334 NGL, s. 24.

335 NGL, s. 23.

336 NGL, s. 24.

objective,[337] and the revenue and pricing principles.[338] The AER therefore proposes to revise the access arrangement as set out in revision 11.2.

11.4.2.4 Cost pass through tariff variation process

NT Gas largely accepted the process for cost pass through tariff variations, as set out in amendment 11.4 of the draft decision. This amendment required that NT Gas notify the AER of event costs within 90 business days of the event occurring. However, in its revised access arrangement submission, NT Gas proposed for the AER to have discretion to increase the required time for notification of a cost pass through event occurring.[339]

The AER does not accept NT Gas's revised access arrangement proposal as it introduces unnecessary additional uncertainty into the cost pass through tariff variation process. The AER, therefore proposes to revise the process description further in order to better promote the national gas objective,[340] and the revenue and pricing principles.[341] The AER considers that, where the costs of a cost pass through event take longer than 90 business days to calculate and verify, NT Gas should not be prevented from passing through such an event.

Therefore, the AER considers it is preferable that NT Gas submit an estimate of the costs incurred within 90 business days of the event occurring. The AER considers this revision increases the flexibility of the cost pass through mechanism. The AER further considers that the amended cost pass through tariff variation process is consistent with r. 97 of the NGR; the national gas objective,[342] and the revenue and pricing principles.[343] The AER proposes to revise the access arrangement as set out in revision 11.3.

11.5 Conclusion

The AER does not accept elements of NT Gas's proposed annual tariff variation mechanism and cost pass through mechanism on the basis that they do not comply with r. 97 of the NGR; the national gas objective;[344] or the revenue and pricing principles.[345] The AER's conclusions on the annual tariff variation mechanism and the cost pass through mechanism are summarised in table 11.1.

337 NGL, s. 23.

338 NGL, s. 24.

339 NT Gas, *Revised access arrangement submission*, May 2011, p. 125.

340 NGL, s. 23.

341 NGL, s. 24.

342 NGL, s. 23.

343 NGL, s. 24.

344 NGL, s. 23.

345 NGL, s. 24.

Table 11.1 The AER's conclusions on the annual tariff variation mechanism

Issue	NT Gas revised access arrangement proposal	AER decision	AER revision
Annual tariff variation mechanism			
Due date for notification	Proposed to submit its annual tariff variation notification *40 business days* prior to each 1 July, with the AER required to make a decision within *20 business days*.	Does not accept NT Gas's revised access arrangement.	11.1
Accounting for time value of money	The access arrangement should specify that any delays in variation of tariffs due to a '*late*' decision made by the AER should take into account the *time value of money*.	Does not accept NT Gas's revised access arrangement proposal.	11.1
Removal of reference to 'trigger event'	Proposed to delete a section of text in the annual reference tariff adjustment process to exclude '*other than as a result of a Trigger Events*'.	Does not accept the deletion of the text, but accepts substitution of '*Trigger Events*' with '*Cost Pass Through Event*'.	11.1
Correction of errors in past annual tariff variations	Corrections of errors in past annual tariff variation process should be limited to variations within the current Access Arrangement Period.	Does not accept NT Gas's revised access arrangement proposal, as there is no basis to limit the correction of past errors in annual tariff variation process.	11.1
Cost pass through mechanism			
Regulatory change event	Event definition should clarify it refers to material new events, and should remove the requirement that the regulatory change must '*substantially affect the manner in which the Service Provider provides the 'Reference Services''*.	Accepts NT Gas's revised access arrangement proposal to include new regulatory obligations. The AER considers a further revision should be made to the definition to include the removal of regulatory obligations or requirements. Accepts deletion of the word '*substantially*', but does not accept deletion of the rest of the text.	11.2
Service standard event	Delete the word '*substantially*'.	Accepts NT Gas's revised access arrangement proposal.	11.2
Insurance cap event	Event definition should allow for costs that occur due to NT Gas's *negligence, fault, or lack of care,*	Does not accept NT Gas's revised access arrangement proposal.	11.2

	and includes the requirement that NT Gas's actions must be intended '*to cause harm*'.		
Insurer credit risk event	Remove the requirement that an insurer be a '*nominated*' insurer.	Accepts NT Gas's revised access arrangement proposal	11.2
Natural disaster event	Replace '*forecast operating expenditure requirement*' with '*approved revenue requirement*'.	Does not accept NT Gas's revised access arrangement proposal.	11.2
Carbon price event	Include a broadly defined carbon price event to capture potential imposition of a carbon price.	Does not accept NT Gas's revised access arrangement proposal.	11.2
Insurer insolvency event	Include an additional event to protect NT Gas against *material losses* resulting from insurer insolvency and resultant *unsatisfied claims*.	Accepts in principle NT Gas's revised access arrangement proposal. However, the AER considers that the event is better addressed as an additional clause in the insurer credit risk event.	11.2
Materiality threshold	Materiality should be assessed relative to the *annualised* costs of a cost pass through event. NT Gas also proposed that the materiality threshold should only be defined once in the cost pass through section of the access arrangement.	Does not accept NT Gas's revised access arrangement proposal. Accepts the removal of the second definition of the materiality threshold.	11.2
Timing of cost pass through variations	Various amendments regarding the timing of cost pass through tariff variations.	Does not accept NT Gas's revised access arrangement proposal.	11.2
Cost pass through tariff variation process	Proposed that the AER should have discretion to extend the *90 Business Day* period in which NT Gas must notify the AER of cost pass through events.	Does not accept NT Gas's revised access arrangement proposal. Requires NT Gas to amend the process to allow for the submission of cost estimates, rather than fully known costs, within 90 business days.	11.3

11.6 Revisions

The AER proposes the following revisions:

Revision 11.1: revise the access arrangement to amend section 4.7.2 as follows:

NT Gas will notify the AER in respect of any *Reference Tariffs* variations, such that variations occur on the first of July of any year. The notification will be made at least 50 business days before the date of implementation and include:

(a) the proposed variations to the *Reference Tariffs*; and

(b) an explanation and details of how the proposed variations have been calculated.

If NT Gas proposes variations to the *Reference Tariffs* (other than as a result of a *Cost Pass-through Event*) and those variations have not been approved by the next 1 July, then the *Reference Tariffs* will be varied with effect from that next 1 July, until such time as variations to *Reference Tariffs* are approved by the AER.

If it appears that any past annual tariff variation contains a material error or deficiency because of a clerical mistake, accidental slip or omission, miscalculation or mis-description, the AER may change subsequent tariffs to account for these past issues.

Within 30 business days of receiving NT Gas's tariff variation notice, the AER will inform NT Gas in writing of whether or not it has verified the proposed *Reference Tariffs*.

The 30 business day period may be extended for time taken by the AER to obtain information from NT Gas, obtain expert advice or consult about the notification. However, the AER must assess a cost pass through application within 90 business days, including any extension of the decision making time.

Revision 11.2: revise the access arrangement to amend section 4.7.3 as follows:

Subject to the approval of the Regulator under the National Gas Rules, *Reference Tariffs* may be varied after one or more *Cost Pass-through Event/s* occurs, in which each individual event materially increases or materially decreases the cost of providing the reference services. Any such variation will take effect from the next 1 July.

In making its decision on whether to approve the proposed *Cost Pass-through Event* variation, the AER must take into account the following:

Whether:

- the costs to be passed through are for the delivery of pipeline services
- the costs are incremental to costs already allowed for in *Reference Tariffs*
- the total costs to be passed through are building block components of total revenue
- the costs to be passed through meet the relevant National Gas Rules criteria for determining the building block for total revenue in determining reference services
- any other factors the AER considers relevant and consistent with the National Gas Rules and National Gas Law.

For the purpose of any defined event, an event is considered to materially increase or materially decrease costs where the incurred or expected costs of that individual event meet the *Materiality Threshold* defined below.

Cost Pass-through Events are:

- *a regulatory change event;*
- *a service standard event;*
- *a tax change event;*
- *a terrorism event;*
- *an insurer credit risk event;*
- *an insurance cap event;*
- *a natural disaster event*.

Where:

Regulatory change event—means:

An imposition of, a change in, or the removal of a regulatory obligation or requirement that:

(a) falls within no other category of *Cost Pass-through Event*; and

(b) occurs during the course of the access arrangement period; and

(c) affects the manner in which NT Gas provides *Reference Services* (as the case requires); and

(d) materially increases or materially decreases the costs of providing those services.

Service standard event—means:

A legislative or administrative act or decision that:

(c) has the effect of:

(i) varying, during the course of the access arrangement period, the manner in which NT Gas is required to provide a *Reference Service*; or

(ii) imposing, removing or varying, during the course of an access arrangement period, minimum service standards applicable to prescribed reference services; or

(iii) altering, during the course of an access arrangement period, the nature or scope of the prescribed reference services, provided by NT Gas; and

(b) materially increases or materially decreases the costs to NT Gas of providing prescribed *Reference Services*.

Tax change event—means:

A tax change event occurs if any of the following occurs during the course of the access arrangement period for NT Gas:

(a) a change in a relevant tax, in the application or official interpretation of a relevant tax, in the rate of a relevant tax, or in the way a relevant tax is calculated;

(b) the removal of a relevant tax;

(c) the imposition of a relevant tax; and

In consequence, the costs to NT Gas of providing prescribed Reference Services are materially increased or decreased.

Terrorism event—means:

An act (including, but not limited to, the use of force or violence or the threat of force or violence) of any person or group of persons (whether acting alone or on behalf of in connection with any organisation or government), which from its nature or context is done for, or in connection with, political, religious, ideological, ethnic or similar purposes or reasons (including the intention to influence or intimidate any government and/or put the public, or any section of the public, in fear) and which materially increases the costs to NT Gas of providing a Reference Service.

Insurer credit risk event—means:

An event where the insolvency of the insurers of NT Gas occurs, as a result of which NT Gas:

(a) incurs materially higher or materially lower costs for insurance premiums than those allowed for in the access arrangement; or

(b) in respect of a claim for a risk that would have been insured by NT Gas's insurers, is subject to a materially higher or lower claim limit or a materially higher or lower deductible than would have applied under that policy; or

(c) incurs additional costs associated with self funding an insurance claim, which, would have otherwise been covered by the insolvent insurer.

Insurance cap event—means:

An event that would be covered by an insurance policy but for the amount that materially exceeds the policy limit, and as a result NT Gas must bear the amount of that excess loss. For the purposes of this *Cost Pass-through Event*, the relevant policy limit is the greater of the actual limit from time to time and the limit under NT Gas's insurance cover at the time of making this access arrangement. This event excludes all costs incurred beyond an insurance cap that are due to NT Gas's negligence, fault, or lack of care. This also excludes all liability arising from the NT Gas's unlawful conduct, and excludes all liability and damages arising from actions or conduct expected or intended by NT Gas.

Natural disaster event—means:

Any major fire, flood, earthquake, or other natural disaster beyond the control of NT Gas (but excluding those events for which external insurance or self insurance has been included within NT Gas's forecast operating expenditure) that occurs during the access arrangement period and materially increases the costs to NT Gas of providing *Reference Services*.

Materiality threshold—means:

For the purpose of any defined *Cost Pass-through Event*, an event is considered to materially increase or materially decrease costs where that event has an impact of one per cent of the smoothed forecast revenue specified in the access arrangement information, in the years of the access arrangement period that the costs are incurred.

Revision 11.3: revise the access arrangement to amend section 4.7.4 as follows:

NT Gas will notify the AER of a *Cost Pass-through Event* within 90 business days of the *Cost Pass-through event* occurring, whether the *Cost Pass-through Event* would lead to an increase or decrease in *Reference Tariffs*.

When the costs of the *Cost Pass-through Event* incurred are known (or able to be estimated to a reasonable extent), then those costs shall be notified to the AER. When making such notification to the AER, NT Gas will provide the AER with a statement, signed by an authorised officer of NT Gas, verifying that the costs of any pass through events are net of any payments made by an insurer or third party which partially or wholly offsets the financial impact of that event (including self insurance).

The AER must notify NT Gas of its decision to approve or reject the proposed variations within 90 business days of receiving the notification. This period will be extended for the time taken by the AER to obtain information from NT Gas, obtain expert advice or consult about the notification.

However, if the AER determines the difficulty of assessing or quantifying the effect of the relevant *Cost Pass-through Event* requires further consideration, the AER may exceed the 90 business day limit. The AER will notify NT Gas of the extension, and its duration, within 90 business days of receiving a notification from NT Gas.

12 Non-tariff components

NT Gas's access arrangement sets out proposed terms and conditions that are not directly related to the nature or level of tariffs paid by users, but which set out the respective rights of the service provider and users.

In the draft decision, the AER accepted some of NT Gas's proposed terms and conditions but required amendments to others. In its revised access arrangement proposal, NT Gas accepted many of the AER's required amendments, partially accepted others with modifications to the wording of the relevant clauses and rejected other of the AER's amendments altogether, particularly in relation to liability.

In the final decision, the AER accepts NT Gas's proposed modifications to the extent that they better promote the national gas objective in s. 23 of the NGL. The AER however has not accepted certain provisions particularly where those provisions do not reflect appropriately the assignment of risk between the service provider and the user.

In its draft decision, the AER required amendments regarding the capacity trading requirements, queuing requirements, extensions and expansions policy and commencement and review dates.

In response to the draft decision, NT Gas revised some of its proposed requirements relating to capacity trading, queuing and review submission date but did not accept other amendments to the non-tariff components. The AER accepts NT Gas's revised queuing requirements and some of its revisions related to the capacity trading requirements and the submission of an access arrangement proposal. However, the AER does not approve part of NT Gas's revised requirements related to capacity trading under conditions of default, pipeline extensions, fixed principles and the commencement and review submission dates.

12.1 Terms and conditions

12.1.1 Regulatory requirements

Rules 48(1)(d)(i) and 48(1)(d)(ii) of the NGR require a full access arrangement to specify the reference tariff and other terms and conditions on which reference services will be provided.

In considering NT Gas's proposed terms and conditions the AER has had regard to r. 100 of the NGR.

Rule 100 requires that an access arrangement be consistent with the national gas objective and the rules and procedures in force when the terms and conditions of the access arrangement proposal are determined or revised. The national gas objective is to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas. [346]

346 NGL, s. 23.

The AER has full discretion in assessing NT Gas's proposed terms and conditions. Full discretion means that the AER has discretion to withhold its approval of an element of an access arrangement proposal if, in the AER's opinion, a preferable alternative exists that:

- complies with applicable requirements of the NGL and NGR
- is consistent with applicable criteria (if any) prescribed by the NGL and NGR.[347]

12.1.2 Revised access arrangement proposal

TheAER's draft decision set out its considerations and amendments to NT Gas's terms and conditions in appendix C. NT Gas accepted many of the AER's required amendments, partly accepted others with modifications to the wording of the relevant clauses and rejected many. Due to the combined effect of the AER's amendments and NT Gas's revisions there has been a change to the numbering of clauses in the terms and conditions between NT Gas's December 2010 access arrangement proposal and NT Gas's revised access arrangement proposal.

NT Gas's proposed terms and conditions are set out in appendix H to its revised access arrangement submission.[348]

12.1.3 AER's consideration

The AER's assessment of NT Gas's proposed terms and conditions and issues raised in response to the draft decision is set out in detail in appendix C. Appendix C covers only those amendments which NT Gas either did not accept or only partly accepted (for example, by proposing changes to the wording of the relevant clauses).

The AER does not accept certain revisions proposed by NT Gas. As set out in appendix C, the AER considers that revisions are required in order to better promote the national gas objective.[349]

12.2 Capacity trading requirements

12.2.1 Regulatory requirements

Under r. 48(1)(f) of the NGR, capacity trading requirements are to be included in a full access arrangement. Rule 105(1) of the NGR requires that capacity trading requirements must provide for capacity transfers in accordance with the rules or procedures of the relevant gas market, if the service provider is registered as a participant in a particular gas market. If the service provider is not registered, or the rules or procedures do not address capacity trading, then capacity trading requirements must comply with r. 105 of the NGR.

Rules 105(3) and 105(2) of the NGR concern the transfer of capacity trading requirements with and without the service provider's consent. Capacity trading requirements may specify conditions under which consent will or will not be given, and the conditions to be complied with if consent is given. A service provider is

347 NGR, r. 40(3).

348 NT Gas, *Revised access arrangement proposal*, May 2011.

349 NGL, s. 23.

precluded from withholding its consent unless it has reasonable grounds, based on technical or commercial considerations, for doing so.[350]

The terms and conditions for changing receipt and delivery points are to be included in a full access arrangement.[351] Rule 106 of the NGR requires that an access arrangement must provide for the change of a receipt or delivery point with the service provider's consent. The service provider is precluded from withholding its consent unless it has reasonable grounds, based on technical or commercial considerations, for doing so. The access arrangement may specify conditions under which consent will or will not be given and conditions to be complied with if consent is given.[352]

12.2.2 Revised access arrangement proposal

Amendments 12.1 to 12.3 of the draft decision required NT Gas to amend capacity trading requirements[353] in order to better promote the national gas objective.[354] Briefly, these were to:

- delete the term '*without limitation*' from section 5.3(a) (amendment 12.1)
- delete section 5.3(g) (amendment 12.2)
- include a definition of '*reasonable commercial or technical grounds*' in schedule 2 (amendment 12.3) for the benefit of users.[355]

NT Gas has accepted amendment 12.1 relating to the deletion of *without limitation* and has included some additional wording to clause 5.3(a) that clarifies that NT Gas's reasonable costs are not limited to the examples provided.[356]

NT Gas has not accepted amendment 12.2 relating to the removal of section 5.3(g) but has modified the wording of this section to clarify that the users default must be a material default under the transportation agreement.[357] NT Gas proposed an additional provision which clarifies that a transfer made under section 5.3 does not affect the rights or liabilities that had accrued under, or in relation to, the contract before the transfer took affect. It submitted that this additional provision is consistent with r. 105(5) of the NGR.[358]

NT Gas has not accepted amendment 12.3, which required amending the definition of *reasonable commercial or technical grounds*, submitting that an all encompassing

350 NGR, r. 105(4).

351 NGR, r. 48.

352 NGR, r. 106.

353 AER, *Draft decision*, April 2011, p.181.

354 AER, *Draft decision*, April 2011, p.180.

355 AER, *Draft decision*, April 2011, pp.179–181.

356 NT Gas, *Revised access arrangement submission*, May 2011, p.134; NT Gas, *Revised access arrangement proposal*, May 2011, p. 21.

357 NT Gas, *Revised access arrangement submission*, May 2011, p.134; NT Gas, *Revised access arrangement proposal*, May 2011, p. 22.

358 NT Gas, *Revised access arrangement submission*, May 2011, p.134.

definition is not feasible.[359] Instead, NT Gas has included two examples of such grounds to assist users to understand the potential scope of considerations that NT Gas may make in withholding its consent to transfers made under sections 5.3 and 5.4 of the access arrangement.[360] These examples of the term *reasonable commercial or technical grounds* are:

- if the service provider would not receive at least the same amount of revenue it would have received before the change (section 5.3)
- if a reduction in the amount of maximum daily quantity (MDQ) at the initial delivery point will not result in a corresponding increase in the service provider's ability to provide that service to the alternative delivery point (section 5.4).[361]

12.2.3 AER's consideration

12.2.3.1 Definition

While acknowledging that NT Gas has not provided an all encompassing definition of this term, the AER considers the inclusion of examples of the term *reasonable commercial or technical grounds* in the revised access arrangement proposal benefits users and prospective users in understanding the basis on which NT Gas may withhold its consent to change receipt and delivery points MDQs. The AER is therefore satisfied that their inclusion better promotes the national gas objective.

12.2.3.2 Capacity trading requirements

The AER accepts section 5.3(a) of NT Gas's revised access arrangement proposal relating to the phrase "and other costs as reasonably determined". This phrase clarifies that NT Gas's reasonable costs are not limited to its legal and internal costs (the two examples provided). The AER accepts that NT Gas may incur other reasonable costs and expenses in respect to its consent and assignment of capacity that are not covered by the examples provided. As a result, the AER considers that NT Gas's proposed revision to section 5.3(a) is consistent with the national gas objective under s. 23 of the NGL.

The AER does not accept section 5.3(g) of NT Gas's revised access arrangement proposal. The AER maintains its assessment in relation to capacity trading under conditions of default as set out in the draft decision.[362] It considers that withholding consent to capacity trading in the case of a user in default "*of a material obligation*" under the Transportation Agreement will benefit neither the service provider nor the user and will likely restrict the efficient transfer of capacity between existing and potential users. The AER considers that the deletion of this section as set out in revision 12.1, would better promote the national gas objective in s. 23 of the NGL.

Further, NT Gas has proposed additional text under section 5.3, which makes clear that a transfer made under section 5.3 does not affect the rights or liabilities that a user

359 NT Gas, *Revised access arrangement submission*, May 2011, p.133.

360 NT Gas, *Revised access arrangement submission*, May 2011, p.133, NT Gas, *Revised access arrangement proposal*, May 2011, p. 22.

361 NT Gas, *Revised access arrangement proposal*, May 2011, p. 22.

362 AER, *Draft decision*, April 2011, pp. 180–181.

had accrued under its contract before the transfer took effect.[363] The AER considers this is consistent with r. 105(5) of the NGR.

12.2.4 Conclusion

The AER accepts NT Gas's revised access arrangement proposal in relation to the inclusion of examples of the term *reasonable commercial or technical grounds.* Further, the AER accepts NT Gas's revision to section 5.3(a) and the inclusion of the new provision in section 5.3 relating to rights and liabilities when capacity trading takes place. The AER considers that these revisions are consistent with r. 105(5) of the NGR.

However, the AER does not accept NT Gas's revised section 5.3(g) relating to the user in default of a material obligation as it is not consistent with s. 23 of the NGL. Therefore, the AER proposes to revise NT Gas's revised access arrangement as set out in revision 12.1.

12.2.5 Revisions

The AER proposes the following revision:

Revision 12.1: delete section 5.3(g) of the capacity trading requirements of the revised access arrangement proposal.

12.3 Queuing requirements

12.3.1 Regulatory requirements

Under r. 48(1)(e) and r. 103(1) of the NGR, queuing requirements are to be included in a full access arrangement if the access arrangement is for a transmission pipeline.

Rule 103(3) of the NGR requires that queuing requirements must establish a process or mechanism for determining an order of priority between prospective users of spare capacity or developable capacity in which all prospective users are treated on a fair and equal basis.

Rule 103(4) of the NGR provides by way of example that the order of priority may be determined either on a first come first served basis or on the basis of a publicly notified auction in which all prospective users are able to participate.

Rule 103(5) of the NGR requires that queuing requirements must be sufficiently detailed to enable a prospective user to understand the basis of the order of priority and to determine its position in the queue.

12.3.2 Revised access arrangement proposal

Amendment 12.4 of the draft decision required NT Gas to amend section 6.4 of the access arrangement proposal by replacing the date '*5 February 2003*' with the

363 NT Gas, *Revised access arrangement submission*, May 2011, p.134; NT Gas, *Revised access arrangement proposal*, May 2011, p. 22.

commencement date of the access arrangement. NT Gas has incorporated this amendment in section 6.4 of its revised access arrangement proposal.[364]

12.3.3 AER's consideration

The AER's consideration of NT Gas's proposed queuing requirement is set out in chapter 12 of the draft decision.

The AER accepts NT Gas's revision to section 6.4 as it is consistent with the draft decision amendment and complies with r. 103 of the NGR.

12.3.4 Conclusion

The AER accepts NT Gas's revision to section 6.4 and considers that it complies with r. 103 of the NGR.

12.4 Extensions and expansions policy

12.4.1 Regulatory requirements

Under r. 48 of the NGR extension and expansion requirements are to be included in a full access arrangement. [365] Rule 104(1) of the NGR requires that extension and expansion requirements may state whether the applicable access arrangement will apply to incremental services provided as a result of a particular extension or expansion or outline how this may be dealt with at a later time. If the requirements provide that an access arrangement applies to incremental services, r. 104(2) of the NGR states that the requirements must deal with the effect of the extension or expansion on tariffs.

12.4.2 Revised access arrangement proposal

The draft decision did not accept NT Gas's extensions and expansions policy and required the following amendments:

- if NT Gas proposes an extension of the covered pipeline, it must apply to the AER in writing to decide whether the proposed extension will be taken to form part of the covered pipeline and will be covered by the access arrangement (amendment 12.5)[366]
- at the end of each financial year NT Gas must inform the AER of all pipeline extensions in progress or completed during that year (amendment 12.6)[367]
- that the access arrangement will apply to incremental services offered as a result of expansions of the pipeline (amendment 12.7)[368]
- at the end of each financial year NT Gas must inform the AER of all pipeline expansions in progress or completed during that year (amendment 12.8)[369]

364 NT Gas, *Revised access arrangement proposal*, May 2011, p. 24.

365 NGR, r. 48(1)(g).

366 AER, *Draft decision*, April 2011, p.185.

367 AER, *Draft decision*, April 2011, p.186.

368 AER, *Draft decision*, April 2011, p.186.

- the removal of fixed principles from the extension and expansion policy (amendment 12.9).[370]

NT Gas did not incorporate any of the AER's amendments relating to extensions and expansions policy into its revised access arrangement proposal.

NT Gas submitted that:

- amendment 12.5 appears to make a determination on whether a particular pipeline is a covered pipeline, which the AER is not in a position to determine under the NGL and NGR [371]

- the AER has not provided reasons supporting the requirement for amendment 12.5 of the draft decision[372]

- it is unclear why the AER has required amendment 12.7, which requires the deletion of some text from section 7.2(a) of its proposed access arrangement[373]

- the imposition of reporting requirements, as set out in amendments 12.6 and 12.8, is beyond the AER's powers as it relates to the making of access arrangements. NT Gas proposed that the access arrangement is intended to set out the terms and conditions of the service provider's provision of reference services to users, and is an inappropriate vehicle for the imposition of reporting requirements by the AER. NT Gas proposed that this is evident given that the AER has specifically defined information gathering powers under the NGL[374]

- the timeframes proposed for the reporting requirements in amendments 12.6 and 12.8 are unreasonable[375]

- the reasons the AER had provided in supporting amendment 12.9, which required the removal of section 7.4 from the proposed access arrangement do not address the basis of why NT Gas had proposed fixed principles. Also, the AER had not demonstrated that its alternative proposal was preferable with regard to the national gas objective[376]

- the requirement that 7.1(d) and 7.2(c) of the access arrangement be made as fixed principles is not for the purpose of ensuring that the reference tariff is unaffected by the addition of extensions or expansions. NT Gas proposed that the intent of these clauses is to ensure that it and other parties with which it is negotiating can have certainty over the period of their contracting arrangements.[377]

---

369 AER, *Draft decision*, April 2011, p.186.

370 AER, *Draft decision*, April 2011, p.186.

371 NT Gas, *Revised access arrangement submission*, May 2011, p.137.

372 NT Gas, *Revised access arrangement submission*, May 2011, pp. 137–138.

373 NT Gas, *Revised access arrangement submission*, May 2011, pp. 138–139

374 NT Gas, *Revised access arrangement submission*, May 2011, pp. 139–140.

375 NT Gas, *Revised access arrangement submission*, May 2011, p. 140.

376 NT Gas, *Revised access arrangement submission*, May 2011, pp. 141–142

377 NT Gas, *Revised access arrangement submission*, May 2011, p. 141.

12.4.3 AER's consideration

12.4.3.1 Amendments in the draft decision no longer required

Expansion of capacity above the existing capacity

The AER accepts section 7.2(a) of NT Gas's revised access arrangement proposal as reasonable and considers that it is preferable to the AER's proposed amendment 12.7. The AER considers that the revised section gives flexibility to both NT Gas and the AER in determining coverage of an expansion in capacity. The AER also considers that NT Gas's section 7.2(a) is consistent with r. 104 of the NGR. Under this rule, a statement may be included in the expansion requirement, which indicates whether the access arrangement will apply to incremental services provided as a result of a particular pipeline expansion.

Reporting requirements

The AER has considered NT Gas's submission that reporting requirements proposed by the AER are not necessary or appropriate.[378] The AER has reconsidered its position and is satisfied that the draft decision amendment relating to reporting requirements is not necessary because:

- NT Gas is required under r. 134 of the NGR to give the Australian Energy Market Commission (AEMC) a revised description of the pipeline when this is affected by an extension or capacity expansion. A Memorandum of Understanding exists between the AER and the AEMC which allows the two bodies to share certain information relating to their functions and powers.[379] As a result, the AER considers that it is unnecessary for NT Gas to have annual reporting requirements in relation to extensions and expansions in its access arrangement. This avoids any additional regulatory burden on NT Gas.

- however, the AER may consider, in the longer term, on using its information-gathering powers under s. 48 of the NGL to collect information it considers is reasonably necessary for its performance or the exercise of its functions or powers under the NGL or NGR. This is consistent with the AER's approach in other recent access arrangement reviews.[380]

12.4.3.2 Extensions to the covered pipeline

The AER does not agree with NT Gas that it did not provide reasons for amendment 12.5 in the draft decision as required by r. 59(4) of the NGR and refers to the following discussion in the draft decision:

> The AER also considers that NT Gas should notify the AER of all extensions or expansions completed or in progress at the end of each

378 NT Gas, *Revised access arrangement submission*, May 2011, p. 139.

379 AEMC, AER and ACCC, *Memorandum of Understanding between the Australian Energy Market Commission and Australian Energy Regulator and Australian Competition and Consumer Commission*, July 2009, pp. 4–5.

380 AER, Final decision: *Jemena Gas Networks Access arrangement proposal for the NSW gas networks*, June 2010, pp. 435–436; AER, Final decision: *Access arrangement proposal for the ACT, Queanbeyan and Palerang gas distribution network*, March 2010, p. 129; AER, Final Decision: *Envestra Ltd Access arrangement proposal for the SA gas network*, June 2011, p. 148; AER, Final decision: *APT Allgas Access arrangement proposal for the QLD Gas network*, June 2011, p. 101.

financial year. The AER considers this level of transparency is necessary to satisfy the national gas objective.[381] NT Gas's proposal contains no such provisions, and the AER requires NT Gas to amend sections 7.1 and 7.2 of the access arrangement accordingly.[382]

The AER's draft decision amendment 12.5 was an amendment to section 7.1 of the access arrangement, which dealt with pipeline extensions.

The AER considers that it has provided a statement of its reasons in the draft decision with respect to amendment 12.5 and that it has fully complied with r. 59(4) of the NGR. As discussed below the AER is maintaining the draft decision amendment 12.5, with minor modifications in the final decision as revision 12.2. Because the AER considers that the reasons for this amendment were discussed in the draft decision, it considers that NT Gas has had an opportunity to respond to these reasons in its revised access arrangement proposal. As a result, the AER does not consider the need to provide NT Gas with an additional opportunity to respond to the draft decision.

The AER does not agree with NT Gas that it is beyond the power of the AER to decide whether an asset should be covered or not. Under r. 40(3) of the NGR, the AER has full discretion to impose preferable extension and expansion requirements in an access arrangement review. The AER considers that s. 18 of the NGL does not prevent the AER from making coverage determinations if it is allowed by the operation of the extensions and expansions requirements under the access arrangement. The AER also considers that r. 104(1) of the NGR does not prevent the AER, subsequent to the final decision, from determining whether incremental services can be provided as a result of an extension to the pipeline, particularly if these services are priced at the current reference tariff as if they are regulated services.

The AER considers that a revised version of NT Gas's access arrangement proposal in relation to pipeline extensions would better promote the national gas objective.[383] It considers that in order to be consistent with the national gas objective,[384] an extensions program should promote the efficient investment in, and efficient operation and use of natural gas services for the long term interests of users.

The AER considers that although NT Gas proposed in section 7.1(a) of its access arrangement that the service provider will consult with the AER, it does not specify that the AER's considerations on pipeline extensions will be binding. The AER considers that it is not acceptable that NT Gas only consults with the AER about pipeline extensions. In order to promote the national gas objective,[385] the AER considers that it should make a decision as to whether the proposed extension will form part of the covered pipeline and whether the access arrangement will apply to the incremental services provided by the proposed extension.

For the reasons given above, the AER considers that although NT Gas's proposed extension and expansion policy is consistent with r. 104 of the NGR, the AER's

381 NGL, s. 23.

382 AER, *Draft decision*, April 2011, p.184.

383 NGL, s. 23.

384 NGL, s. 23.

385 NGL, s. 23.

revisions are preferable in promoting the national gas objective as described in s. 23 of the NGL as they will allow the AER to consider the long term interests of users. The AER proposes to revise NT Gas's extensions and expansions policy by deleting section 7.1(a) and replacing it with a slightly modified version of the draft decision amendment 12.5. This is outlined in revision 12.2 of the final decision. The AER has slightly modified amendment 12.5 with additional wording describing the AER's decision on whether the access arrangement will apply to the incremental services provided by the proposed extension. The AER considers that this modification is required so that the provision outlined in section 7.1(b) can apply.

12.4.3.3 Fixed principles

In the draft decision, the AER made clear its reasons for rejecting NT Gas's proposed fixed principles.[386] The AER considered that:[387]

> The AER considers that there is merit in monitoring the operation of NT Gas's extensions and expansions policy. At the next access arrangement review an assessment should be carried out to determine:
>
> - how effective the extensions and expansions policy was during the previous period
> - whether the extensions and expansions policy needs to be modified to increase its effectiveness.
>
> The extensions and expansions policy may need to be amended after this assessment to ensure that it operates as necessary to fulfil the requirements of r. 104 of the NGR. The establishment of fixed principles would prevent any required changes to the requirements dealing with costs associated with negotiated services offered on pipeline extensions and expansions.

The AER considers that this reasoning sufficiently explains why the AER rejected the creation of fixed principles.

However, the AER accepts that its reasons in the draft decision for rejecting NT Gas's proposed fixed principles[388] do not address the basis for NT Gas's proposed fixed principles[389] and has addressed this as follows. In response to NT Gas's concerns that the fixed principles are necessary to ensure certainty in its commercial negotiations[390], the AER considers that the perceived risk is slight. In the event that NT Gas negotiates with a user or prospective user to extend the pipeline on the basis that the costs of the extension will be recovered from such a user, the AER will take this into account at the time of the next access arrangement review. The AER considers that inclusion of fixed principles for fifteen years is not a necessity for such negotiations and further considers it would cause inflexibility in the extension and expansion requirements that would not advance the national gas objective. Therefore, the AER considers that the deletion of section 7.4 as set out in revision 12.3, would better promote the national gas objective.

386 AER, *Draft decision*, April 2011, pp. 184–185.

387 AER, *Draft decision*, April 2011, p. 184

388 AER, *Draft decision*, April 2011, p. 184

389 NT Gas, *Revised access arrangement submission*, May 2011, pp. xiv, 142.

390 NT Gas, *Revised access arrangement submission*, May 2011, pp. 141–142.

12.4.4 Conclusion

The AER approves sections 7.1(b), (c) and (d), 7.2 and 7.3 of NT Gas's revised access arrangement proposal.

However, the AER does not approve NT Gas's proposed method of determining the application of the access arrangement to incremental services offered due to pipeline extensions. Further, the AER does not approve NT Gas's proposed fixed principles. The AER proposes to revise the access arrangement proposal as set out in revision 12.2.

12.4.5 Revisions

The AER proposes the following revisions:

Revision 12.2: delete section 7.1(a) of the revised access arrangement proposal and replace with the following:

(a) If NT Gas proposes an extension of the covered pipeline, it must apply to the AER in writing to decide whether the proposed extension will be taken to form part of the covered pipeline and whether this access arrangement will apply to the incremental services provided by the proposed extension.

A notification given by NT Gas under this section 7.1 must:

(i) be in writing

(ii) state whether NT Gas intends for the proposed pipeline extension to be covered by this Access Arrangement

(iii) describe the proposed pipeline extension and describe why the proposed extension is being undertaken and

(iv) be given to the AER before the proposed pipeline extension comes into service.

NT Gas is not required to notify the AER under this section 7.1 to the extent that the cost of the proposed high pressure pipeline extension has already been included and approved by the AER in the calculation of *Reference Tariffs*.

After considering NT Gas's application, and undertaking such consultation as the AER considers appropriate, the AER will inform NT Gas of its decision on NT Gas's proposed coverage approach for the pipeline extension.

The AER's decision referred to above, may be made on such reasonable conditions as determined by the AER and will have the effect stated in its decision on NT Gas's proposed coverage approach for the pipeline extension.

The AER's decision referred to above, may be made on such reasonable conditions as determined by the AER and will have the effect stated in the decision.

Revision 12.3: delete section 7.4 from the access arrangement.

12.5 Commencement and review dates

12.5.1 Regulatory requirements

Rule 49(1) of the NGR requires that a full access arrangement that is not voluntary must contain a review submission date and a revision commencement date and must not contain an expiry date.

In general, as set out in r. 50 of the NGR, a review submission date will fall four years after the current access arrangement took effect or the last revision commencement date, and a new revision commencement date will fall one year later. [391] The AER is required to accept a service provider's proposed review submission and commencement dates if these are made in accordance with this general rule. It may approve dates that do not conform with this rule if it is satisfied that the dates are consistent with the national gas objective and the revenue and pricing principles.[392]

The review submission date may advance on that fixed in the access arrangement if a specified trigger event occurs. [393] Rule 51(2) of the NGR provides examples of possible trigger events in an access arrangement. The AER may insist on the inclusion of trigger events and may specify the nature of the trigger events.[394]

12.5.2 Revised access arrangement proposal

The draft decision did not accept NT Gas's access arrangement review submission date and procedure regarding revisions to the access arrangement, and required the following amendments:

- replace the reference to r. 62 of the NGR with r. 64 of the NGR in section 1.5 of the access arrangement (amendment 12.10)[395]
- replace 1 January 2016 with 1 July 2015, or four years from the commencement date of this access arrangement, whichever is the latter in section 1.6 of the access arrangement (amendment 12.11)[396]
- delete the last paragraph beginning with "*Service Provider may, at any other time…*" from section 1.6 of the access arrangement (amendment 12.12).[397]

NT Gas has not accepted amendment 12.10, which requires the access arrangement to commence on the date on which the approval of the AER takes effect under r. 64 of the NGR. NT Gas submitted that approval under r. 64 of the NGR applies to the circumstance where the AER refuses to approve an access arrangement proposal and imposes its own access arrangement.[398] It also submitted that, under r. 62 of the NGR if the AER were to approve an access arrangement proposal, there would be no need

391 NGR, r. 50(1).

392 NGR, r. 50(4).

393 NGR, r. 51(1).

394 NGR, r. 51(3).

395 AER, *Draft decision*, April 2011, p. 189.

396 AER, *Draft decision*, April 2011, p. 189.

397 AER, *Draft decision*, April 2011, p. 189.

398 NT Gas, *Revised access arrangement submission*, May 2011, p. 142.

for the AER to draft its own access arrangement in place of that proposed by the service provider.[399] NT Gas further submitted that it had concerns that the AER might have prejudged its decision on NT Gas's revised access arrangement proposal at the draft decision stage by requiring this amendment.[400]

NT Gas has accepted the AER's proposed amendment 12.11 by agreeing to change its proposed review submission date to 1 July 2015.[401] However, the AER notes that section 1.6 of NT Gas's revised access agreement proposal incorrectly refers to the review date as being 1 July 2016.[402]

NT Gas has not accepted amendment 12.12, which required the deletion of text referring to the service provider's ability to propose revisions to the access arrangement or access arrangement information at any time.[403] NT Gas submitted that this section provides important information to users and prospective users as to the potential scope for revisions to the access arrangement prior to the next revisions commencement date. It also submitted that there is no inconsistency between proposed revisions being submitted to the AER under r. 65 or r. 51 of the NGR.[404]

12.5.3 AER's consideration

The AER notes NT Gas's comments relating to amendment 12.10 to section 1.5 of the access arrangement concerning the commencement date of the access arrangement. The AER agrees that r. 62 of the NGR will be applicable if the AER approves an access arrangement as proposed by the service provider. However, where the AER rejects a service provider's proposal and gives effect to its own proposal, r. 64 of the NGR is applicable. The AER, in the final decision, does not approve NT Gas's access arrangement proposal, and as such, the appropriate rule reference is to r. 64 of the NGR. Therefore the AER proposes revision 12.4 to revise NT Gas' access arrangement proposal.

The AER does not accept section 1.6 of the revised access arrangement proposal relating to revisions to the access arrangement. This is because the proposed review submission date of 1 July 2016 is after the date indicated by the general rule under r. 50(1) of the NGR, which provides that the review submission date will fall four years after the commencement of the access arrangement. As a consequence, the AER proposes to make revision 12.5 which is set out below.

In the draft decision, the AER did not accept the last paragraph of section 1.6 relating to the submission of revisions at any time under r. 65 of the NGR. On further consideration of NT Gas's arguments,[405] and consistent with the AER's recent decision on APT Allgas's Queensland natural gas distribution network,[406] the AER

399 NT Gas, *Revised access arrangement submission*, May 2011, p. 142.

400 NT Gas, *Revised access arrangement submission*, May 2011, p.142.

401 NT Gas, *Revised access arrangement submission*, May 2011, p.143.

402 NT Gas, *Revised access arrangement proposal*, May 2011, p.4.

403 NT Gas, *Revised access arrangement submission*, May 2011, pp.143–144.

404 NT Gas, *Revised access arrangement submission*, May 2011, pp.143–144.

405 NT Gas, *Revised access arrangement submission*, May 2011, pp.143–144.

406 AER, *APT Allgas Energy Pty Ltd* a*ccess arrangement effective 01 July 2011–30 June 2016*, June 2011, p. 2.

accepts the need for this paragraph to be included in section 1.6 of the access arrangement. The AER considers that, in accordance with r. 65 of the NGR, a service provider may submit to the AER for approval an access arrangement variation proposal, provided that such a proposal is not submitted between a review submission date and the commencement of a new access arrangement period. The AER then has the power to consider such a proposal in accordance with r. 66 and r. 67 of the NGR. The AER considers that this paragraph will draw the attention of users or prospective users of the pipeline to the ability of the service provider to submit to the AER an access arrangement variation proposal. However, the AER considers that this paragraph should be made clearer to users that the AER is required under the NGR to approve revisions to an access arrangement before such revisions can commence. As a consequence, the AER proposes to make revision 12.6 which is set out below.

12.5.4 Conclusion

The AER does not approve section 1.5 or 1.6 of the revised access arrangement proposal.

12.5.5 Revisions

The AER proposes the following revisions:

Revision 12.4: amend section 1.5 of the access arrangement proposal by replacing *Rule 62* with *Rule 64*.

Revision 12.5: amend the first paragraph of section 1.6 of the revised access arrangement proposal by replacing *1 July 2016* with *1 July 2015, or four years from the commencement date of this Access Arrangement, whichever is the later*.

Revision 12.6: amend the last sentence of the last paragraph of section 1.6 of the revised access arrangement proposal by replacing *Those revisions will commence in accordance with the National Gas Rules* with *If approved by the AER, those revisions will commence in accordance with the National Gas Rules.*

A Detailed WACC issues

This appendix outlines the AER's consideration of detailed issues in relation to NT Gas's proposed rate of return, under the following sections:

- overall rate of return
- market risk premium (MRP)
- debt risk premium (DRP).

This appendix should be read in conjunction with chapter 5.

A.1 Overall rate of return

This section addresses in detail the different techniques available to the AER to assess the overall rate of return.

A.1.1 Broker reports

Equity analysts release broker reports on the six listed companies operating regulated energy networks in Australia. These reports include a wide variety of information and analysis on the current position of these companies, as well as forecasts or predictions of future performance.

The AER's draft decision for Envestra referred to the weighted average cost of capital (WACC) available from these broker reports used to discount future cash flows as potentially relevant to the evaluation of the cost of equity.[407]

In general, the broker reports do not state the full assumptions underlying their analysis, or provide thorough explanations of how they arrive at their forecasts and predictions.[408] The AER therefore considers that caution should be exercised in interpreting the broker reports, since these assumptions may be incompatible with the AER's framework or the underlying calculations may be incorrect. In practice, reports from different brokers for the same company generally contain conflicting forecasts, reflecting disparate views on the correct evaluation technique.

Further, this analysis is only valid to the extent that these six companies are a reliable proxy for the benchmark firm.[409] In particular, the companies undertake both regulated and unregulated activities which are assessed by the brokers in aggregate—but only the regulated activities are directly relevant to the benchmark firm. The AER

407 AER, Draft decision: *Envestra Ltd access arrangement proposal for the SA gas network 1 July 2011–30 June 2016*, February 2011, pp. 257–262.

408 This is not intended as a criticism, since the proprietary methodologies for evaluating shares are confidential as a source of competitive advantage in the course of ordinary commercial enterprise. Further, the primary end users of these documents (investors seeking insight into future share prices) do not require disclosure of this detail.

409 AER, Final decision: *Electricity transmission and distribution network service providers, Review of the weighted average cost of capital (WACC) parameters*, 1 May 2009, pp. 77–82, 97–110 (AER, Final decision,; *WACC review*, May 2009).

therefore considers that, in general, this means the overall rate of return implied by these broker reports will likely overstate the rate of return for the benchmark firm.[410]

The broker reports often evaluate the present value of the company by estimating all future incoming and outgoing cash flows for the company, and then discounting each cash flow. The discount rate is the broker's estimate of the WACC for the company.

The AER considers that the WACC estimates from recent broker reports (primarily published in February 2011) indicate that the rate of return set by the AER is commensurate with prevailing conditions in the market for funds. The WACC determined by the AER is within the broad range of discount rates applied in the equity broker reports (once converted to a consistent reporting basis), as evident in table A.1. For comparative purposes the AER has also included the headline WACC for broker reports where it could not reproduce a WACC consistent with the formulation adopted by the AER due to insufficient information.

Table A.1 Comparison of WACC used by brokers and the AER (%)

Broker	Companies assessed	Vanilla WACC	Headline WACC
Austock	SKI	–	8.62
Citigroup	DUE, SKI	9.20–10.90	–
Credit Suisse	APA	9.35	7.81
Deutsche Bank	APA, DUE, SPN	9.22	7.80
Goldman Sachs	APA, ENV, SKI	10.04–10.66	8.20–8.50
JP Morgan	APA, DUE, HDF, SKI	–	6.50–8.50
Macquarie	APA, ENV, SKI	–	6.70–7.90
Merrill Lynch	APA, ENV, HDF	–	7.40–8.80
Morgan Stanley	SPN	8.16	7.70
UBS	SKI	8.04–8.44	6.50–6.80
Wilson	HDF	10.02	8.25
Aggregate range		**8.04–10.90**	**6.50–8.80**
AER	**(Benchmark firm)**	**9.73**	**–**

Source: Equity broker reports, AER analysis.
Note: Companies evaluated are APA Group (APA), DUET Group (DUE), Envestra Limited (ENV), Hastings Diversified Utilities Fund (HDF), Spark Infrastructure Group (SKI), and SP AusNet (SPN).

410 The underlying reason is that the regulated activities of the firms—operation of monopoly transmission and distribution networks—are less risky than the unregulated activities they undertake in competitive markets. Greater risk requires greater return (and vice versa).

A.1.2 Recent sale of regulated assets

For the reasons set out below, the AER considers that recent sales of regulated assets can provide useful insight into whether the AER's WACC adequately compensates regulated service providers. The following issues, identified by the AER's consultant, Professor Davis[411], were raised in the draft decision:[412]

- In principle, if the market value exceeds book value, this suggests that the regulatory rate of return is above that required by investors, and the converse when book value exceeds market value.

- Various factors may cause market and book values to differ at the date of regulatory determinations.

The AER's draft decision presented research by Grant Samuel & Associates Limited that showed regulated firms have been recently purchased at implied RAB multiples of at least 1.2.[413] In addition, the AER included a reference to the purchase of Country Energy's NSW gas network by Envestra at a premium of approximately 26 per cent to the 2010 RAB. While other factors may be present, the AER does not consider that they fully explain the substantial premiums implied on the RAB of regulated utilities.

In its revised access arrangement proposal , NT Gas stated it is not appropriate to draw conclusions about the reasonableness of the AER's rate of return from RAB multiples observed in energy acquisitions.[414] However, given the size of the premiums reported in the Grant Samuel study, the AER maintains that this supports the inference that the regulated cost of capital has been at least as high as the actual cost of capital faced by the businesses, and most likely has been in excess of the actual cost of capital.

A.1.3 Cost of equity vs. cost of debt

The AER's draft decision rejected analysis intended to demonstrate a predictable relationship between the cost of equity and the cost of debt presented by Synergies (on behalf of NT Gas). The analysis suggested the use of 4.5 per cent as a guide for the average difference between the cost of equity and cost of debt.[415] The AER raised concerns with the assumptions and corresponding data employed to calculate the 4.5 per cent difference, which resulted in an overstatement with respect to the benchmark service provider because:[416]

411 Davis, *Cost of equity issues: A report for the AER*, 16 January 2011, p. 7 (Davis, *Cost of equity*, January 2011).

412 AER, *Draft decision*, April 2011, p. 190.

413 Grant Samuel and Associates Pty Limited, *Financial Services Guide and Independent Expert Report in relation to the Recapitalisation and Restructure of Babcock & Brown Infrastructure*, 9 October 2009, p. 78 and Grant Samuel and Associates Pty Limited, *Independent Expert Report in relation to the Acquisition of the Alinta Assets*, 5 November 2007, p. 65.

414 NT Gas, *Revised access arrangement submission*, May 2011, p. 40.

415 NT Gas, *Access Arrangement Submission*, December 2010, p. 103.

416 AER, *Draft decision*, April 2011, p. 194.

- The return on equity is based on the All Ordinaries Accumulation index, which has an equity beta (1.0) greater than that considered appropriate for a benchmark service provider (0.8).

- The return on debt is based on the UBS Australian Composite Index, which is likely to have a higher credit grade than that considered to reflect the appropriate credit rating for a benchmark service provider.

In its revised access arrangement proposal, NT Gas agreed that the matters raised by the AER would reduce the difference between the returns on equity and debt.[417] However, it questioned whether the difference, when adjusted in such a manner, would support the implied difference based on the AER's rate of return. NT Gas did not present an approach to quantify the impact based on the required adjustments. It maintained the difference between the returns on equity and debt that it submitted provides a legitimate basis for a 'reasonableness check'.[418]

In further correspondence, NT Gas also referred to a report prepared by CEG on behalf of Envestra which also argued that the return on equity implied by the AER's decisions was too low with respect to the return on debt.[419] The AER has examined CEG's analysis of its decisions in the period January to June 2009, finding that:

- the risk of default on long term bonds over this time seemed real to most investors leading to a short-term equity beta escalation for such securities (the data is not limited to bonds issued by regulated firms). Regulated entities did not present the same risk so the cross-over relative to their cost of capital was perfectly reasonable in the circumstances

- no companies were actually issuing long-term corporate bonds at this time. In particular, there were no actual Australian issued BBB+ 10 year corporate bonds in existence at the time. Therefore, the rates quoted are constructed from other data and subject to the distortions in the market where risk of default was a dominating influence, and the normal market risk criteria associated with corporate bonds of a particular credit rating no longer applied

- had the AER issued a decision at this time, the AER's WACC estimates would have reflected higher debt costs

- while it is valid to assume that the return on equity would be higher than the return on debt, this does not necessarily imply the AER's cost of equity was too low, but may imply the debt risk premium was unusually high.[420]

Taking account of the revised access arrangement proposal , the AER maintains its position from the draft decision that analysis of the relative returns to debt and equity provides no indication that the overall rate of return set by the AER is unreasonable. There is no reason to expect a constant difference between the return on debt and the

417 NT Gas, *Revised access arrangement submission*, May 2011, p. 41.

418 NT Gas, *Revised access arrangement submission*, May 2011, p. 41.

419 CEG, *Estimating the cost of capital under the NGR: A report for Envestra*, September 2010.

420 AER, Draft decision: *Envestra Ltd, Access arrangement proposal for the SA gas network, 1 July 2011–30 June 2016*, February 2011, p. 263.

return equity over time, and no reasonable basis to apply the 4.5 per cent differential advocated by NT Gas. The difference between the return on equity and the return on debt set by the AER (1.0 per cent) is within the broad range of acceptable figures that are generated by this technique.

A.1.4 Modigliani-Miller theorem

The AER's draft decision presented analysis using the Modigliani-Miller framework, in response to the theorem being employed by Synergies, to help explain the relationship between the cost of equity and debt in a frictionless market.[421] The theorem was not applied to estimate any parameters or components of the WACC, but as a 'reasonableness check', which suggested the rate of return set by the AER adequately compensated NT Gas.

In its draft decision, the AER noted that Professor Davis and Associate Professor Handley both cautioned the use of the Modigliani-Miller theorem to imply a relationship between the costs of debt and equity.[422] They considered the Modigliani-Miller theorem in the presence of risky debt is based on the assumption that equity and debt are priced in the (same) integrated market, rather than being priced in (separate) segmented markets. Further, Davis and Handley stated that when this assumption holds, an exact relationship between the firm's cost of debt and equity can be established. However, when this relationship is violated this could imply that equity and debt is priced in:

- an integrated market and the equity risk premium is too low/high
- an integrated market and the debt risk premium is too low/high
- in segmented markets and so the Modigliani-Miller theorem cannot be used to infer that the equity is mispriced relative to the debt.[423]

In its revised access arrangement proposal , NT Gas did not accept the Modigliani-Miller analysis presented by the AER, on the basis that taxes and bankruptcy costs exist and they affect returns.[424] NT Gas also questioned the AER's reliance on this analysis when both Davis and Handley expressed caution about its use, as outlined above.[425]

The AER considers that the Modigliani-Miller theorem is conceptually sound and acknowledges that taxes and bankruptcy costs affect returns. As such, the Modigliani-Miller theorem is limited by simplifying assumptions that diminish its use in estimating a 'real world' rate of return. Nonetheless, this framework remains a useful starting point for a theoretical check on the overall rate of return. While being aware of its limitations as an estimation tool, the AER applied the Modigliani-Miller Proposition Two as a conceptual reasonableness check of the AER's WACC. This

421 AER, *Draft decision*, April 2011, pp. 194–196.

422 Kevin Davis, *Cost of Equities – A Report for the AER*, 16 January 2011, p. 19 and John Handley, *Peer Review of Draft Report by Davis on the Cost of Equity*, 18 January 2011, pp. 9–10.

423 John Handley, *Peer Review of Draft Report by Davis on the Cost of Equity*, 18 January 2011, p. 9–10.

424 NT Gas, *Revised access arrangement submission*, May 2011, pp. 41–42.

425 NT Gas, *Revised access arrangement submission*, May 2011, pp. 42.

analysis based on the return required for unlevered equity indicated that the AER's WACC does not under compensate the service provider. Utilising the same approach from the draft decision, the AER has calculated the return on unlevered equity using the parameters from the NT Gas revised access arrangement proposal. The Modigliani-Miller Proposition Two implies that this unlevered return on equity, of 8.14 per cent, is an appropriate WACC. This compares with the AER's WACC of 9.73 per cent for this final decision.

A.1.5 Envestra's cost of equity analysis

NT Gas's revised access arrangement proposal referred to analysis presented by Envestra as part of its access arrangement reviews for networks in Queensland and South Australia.[426] This included the following consultant reports:

- CEG, which examined different approaches to estimating the cost of equity under the NGR and compared these to the AER's approach that uses the capital asset pricing model (CAPM)
- Professor Bruce Grundy who argued that the Sharpe CAPM suffers from theoretical limitations and also underestimates the cost of equity for low beta stocks
- SFG, which argued that the required return to equity, based on an examination of broker reports, was higher than the returns implied by the CAPM.[427]

These reports were considered by the AER and its consultants in its draft decisions for the Envestra networks. The AER's conclusions were as follows:

- the dividend growth model and Fama French model were not well accepted financial models for the purposes of r. 87 of the NGR
- the methods employed by CEG and Grundy in arguing that the CAPM produces biased outcomes were subject to various shortcomings, and the direction and magnitude of any bias was not substantiated
- SFG's analysis was also subject to various flaws and could not be relied on.[428]

A.1.6 Conclusion

The AER considers that the analyses of market data support the conclusion that the rate of return established by the AER is commensurate with the prevailing conditions in the market for funds and the risks involved in providing reference services.[429] The

426 NT Gas, *Revised access arrangement submission*, May 2011, pp. 42–43.

427 CEG, *Estimating the Cost of Capital under the NGR, A report for Envestra*, September 2010; Bruce Grundy, *The Calculation of the Cost of Capital, A Report for Envestra*, September 2010; SFG, *The required return on equity commensurate with current conditions in the market for funds, Report prepared for Envestra*, September 2010.

428 AER, Draft Decision: *Envestra Ltd Access arrangement proposal for the SA gas network 1 July 2011 – 30 June 2016*, February 2011, pp. 65–76; 257–262.

429 NGR, r. 87(1).

rate of return determined in this decision is at least sufficient to meet the cost of capital faced by regulated service providers.[430]

A.2 Market risk premium

This section sets out the AER's consideration of matters raised in the revised access arrangement proposal regarding the AER's approach to determining the MRP in the draft decision. This includes further consultant reports referred to by NT Gas[431] that were submitted as part of the recent access arrangement review for Envestra, namely:

- CEG, which NT Gas presented as evidence to dispute the weight given by the AER to forward looking estimates of the equity risk premium, rather than estimates of those premiums for regulated utilities which are much higher
- Value Adviser Associates (VAA), which argued that, based on debt market conditions, the MRP is still higher than average
- SFG, which argued that, in the event a theta estimate of 0.23 was applied, this would not require an adjustment to the MRP
- a further report from SFG, which
  - reaffirmed its earlier conclusions regarding theta
  - argued that a MRP of 6.5 per cent is reasonable given current market circumstances
  - argued that it is appropriate to use arithmetic means to estimate the MRP.[432]

A.2.1 The notional time horizon for the MRP

The AER has determined that the CAPM should be used to estimate the cost of equity (the required return on equity) within the WACC. The CAPM is defined as:

$$\text{Return on equity} = r_f + \beta_e \times [E(r_m) - r_f]$$

$$= r_f + \beta_e \times \text{MRP}$$

The MRP is the expected return on the market portfolio,[433] $E(r_m)$, minus the risk free rate, r_f. Within the CAPM the risk free rate appears twice, as the return on the risk free asset and within the calculation of the market risk premium. The AER has accepted the use of the yield on 10 year Commonwealth Government Securities (CGS) as the proxy for the risk free rate. To maintain consistency within the CAPM, the MRP

430 NGL, s. 24(2)(a).

431 NT Gas, *Submission of additional documents - WACC*, 7 June 2011.

432 CEG, *Estimating the Cost of Capital under the NGR, A report for Envestra*, September 2010; VAA, *Comments on market risk premium in draft decision by AER for Envestra February 2011*, March 2011, pp. 6–7 (VAA, *Comments on market risk premium*, March 2011); SFG, *Issues affecting the estimation of the MRP, Report for Envestra*, March 2011; SFG, *The relationship between theta and MRP, Report for Envestra*, September 2010.

433 The market portfolio is the diversified portfolio of all assets in the economy. The expected return on the market portfolio represents the return across all assets in the market.

should also be estimated using the yield on 10 year CGS as the proxy for the risk free rate.[434]

VAA stated that it is necessary for the MRP be estimated using the same risk free rate (i.e. the yield on 10 year CGS) across the entire CAPM equation. However, it stated that the outcome is not necessarily an MRP that is relevant for a 10 year horizon. VAA noted that the MRP calculated using the yield on the 10 year CGS as the proxy for the risk free rate is used for investments of various lengths but that most asset investment decisions under regulatory regimes are long-term.[435]

The AER agrees with VAA that the investment horizon for most regulated assets is long-term. Although the CAPM can be used to provide annual rates of return, the CAPM is a one period model. In theory it provides an estimate of the required rate of return for a single investment with a particular investment horizon.[436] The investment horizons for regulated assets owned and operated by energy network businesses vary both between assets and across businesses. However, because the AER has accepted the use of the yield on 10 year CGS as the proxy for the risk free rate parameter in the CAPM, the AER considers it appropriate to calculate the MRP with the assumption of a 10 year investment horizon. This is consistent with an earlier report from VAA. In that report, VAA stated that insofar as the yield on a 10 year CGS is used as the proxy for the risk free rate, this implies a 10 year planning horizon.[437]

Historical excess return estimates

The MRP represents investors' expectations of the future. Realised excess stock market returns are likely to inform investors' expectations of the future. However, the AER considers that investors' expectations and their required MRP are unlikely to be solely informed by past excess returns. The AER considers that investors' expectations are likely to be informed by a range of factors including current market conditions and the economic and financial markets outlook. In estimating the MRP, the AER is attempting to estimate investors' expectations of what the MRP will be in the future and not simply estimating the excess stock market returns that have been achieved in the past.

In the draft decision, the AER considered estimates of historical excess returns for three different periods of differing length and data quality as calculated by Associate Professor Handley. These estimates were adjusted to incorporate a value for the imputation credit utilisation rate (theta) of 0.65, consistent with the theta estimate used to estimate the cost of corporate income tax in the draft decision. For this final decision the AER has departed from the draft decision and adopted a theta estimate of 0.35. This is discussed in chapter 6. The latest historical excess return estimates, adjusted to incorporate a value for theta of 0.35 are outlined in table A.2.

434 The Australian Competition Tribunal has also noted the importance of consistency between the term of the risk free rate and the MRP. Australian Competition Tribunal, *Application by GasNet Australia (Operations) Pty Ltd [2003] ACompT 6*, p. 24.

435 VAA, *Comments on market risk premium*, March 2011, pp. 6–7.

436 This is supported by the report from SFG, which noted that the CAPM is a one-period model that is silent on the length of the period. See SFG, *Issues affecting the estimation of MRP*, March 2011, pp. 17–18.

437 VAA, *Market risk premium, a review paper*, August 2008, p. 8.

Table A.2 Historical excess return estimates means—assuming an imputation credit utilisation rate of 0.35 (per cent)

Period	Historical excess returns (geometric means)	Historical excess returns (arithmetic means)
1883–2010	4.8	6.2
1937–2010	3.9	5.9
1958–2010	3.8	6.4

Source: Handley, *Memorandum: Additional Estimates of the Historical Equity Risk Premium for the Period 1883 to 2010*, 25 May 2011, p. 1.

Periods used to estimate historical excess returns

As noted in the draft decision, the AER has chosen to consider the periods outlined above for the following reasons:

- The period 1883 to 2010 provides a large sample, which incorporates many years of excess returns data as well as large negative and positive market events. However, for the period up to 1937 there is a relatively small sample of stocks available and includes periods of government stock price controls.[438]

- The period 1937 to 2010 provides a slightly smaller number of observations than the 1883 to 2010 period, but it incorporates a consistently larger sample of stocks and avoids the problems associated with data prior to 1937.

- The two periods above both incorporate data from the Lamberton data series up to 1958, which is likely to overstate historical excess returns prior to 1958. The Lamberton data series uses an equal weighted rather than value weighted average of stock returns, which results in a bias towards high yielding small stocks. In addition to this, the Lamberton data series comprises dividend paying stocks only, which results in an overstatement of the market average. This is because not all stocks pay dividends. In estimating historical excess returns, Brailsford et. al. considered 1958 to be a critical break in the sample period that reflected a shift from poor to relatively good quality data.[439] Brailsford et. al. sourced data from the ASX, which adjusted the pre-1958 data to account for the likely overstatement of equity returns in the Lamberton data series. This data was also used by Handley in his latest estimates of historical excess returns.

- The period 1958 to 2010 provides a smaller number of observations, but it avoids the issues associated with data prior to 1958.

438 Brailsford, Handley and Maheswaran, 'Re-examination of the historical equity risk premium in Australia', *Accounting and Finance*, vol. 48, 2008, pp. 78–79.

439 This is the date from which the SSE began calculation of the Sydney All Ordinary Index and data after 1958 did not rely exclusively on the unadjusted Lamberton data series. Brailsford et. al. also note that they use data for 1883-1979 sourced from the ASX, which was adjusted to account for overstatement due to the exclusion of dividend paying stocks and by equal weighting of stocks over some periods in the data sample. Brailsford, Handley and Maheswaran, 'Re-examination of the historical equity risk premium in Australia', *Accounting and Finance*, 48, 2008, pp. 73–97.

Variability of excess returns and the method of averaging

SFG stated that historical excess return estimates have very wide confidence intervals[440] and an estimate of 6.5 per cent could not be rejected on statistical grounds.[441] The AER acknowledges that the estimated averages of historical excess returns (calculated on an arithmetic basis) have wide confidence intervals and neither 6.5 nor 6 per cent can be rejected on statistical grounds.[442] However, this is partly because annual stock market returns by their nature vary significantly between positive and negative values, which contribute to wide confidence intervals around mean excess return estimates. Although there are wide confidence intervals around excess return estimates, the point estimates calculated on both an arithmetic and a geometric mean basis[443] are still relevant and should inform the best estimate of the MRP.

SFG noted that the CAPM can be applied assuming a one year investment horizon or a 10 year investment horizon, but that estimating excess returns for non-overlapping 10 year periods is precluded by the available data.[444] For the reasons outlined above, the AER considers that an assumption of a 10 year time horizon is appropriate to maintain consistency with the term of the risk free rate proxy used in the CAPM. As noted in the draft decision, the AER recognises that it is difficult to estimate excess returns over a 10 year time horizon due to the limited availability of data.[445] However, arithmetic mean estimates of realised annual excess returns are likely to overstate realised excess returns over a 10 year time horizon because they do not take account of the cumulative effect of returns over a 10 year time horizon.[446]

SFG noted that using a geometric mean for the period 1883–2008 is equivalent to assuming a 128 year investment horizon.[447] The AER acknowledges that geometric averages estimate a cumulative return over the relevant sample period, which would be 53, 74 and 128 years for the different sample periods considered by the AER. However, in the draft decision the AER did not propose to adopt a geometric mean estimate as the best estimate of the MRP and it has not decided to do so in this final decision. Consistent with the draft decision the AER notes that the arithmetic means of historical excess returns are likely to be overstated to some degree. The best

---

440 Confidence intervals take account of variability of observations in a set of data away from the average and provide statistical bounds on the likely true value for an estimated value based on the particular data set.

441 SFG, *Issues affecting the estimation of MRP*, March 2011, pp. 13–14.

442 Specifically, based on the data neither 6 per cent, nor 6.5 per cent can be rejected as the true value for the mean of excess returns within the 95 per cent confidence intervals reported by Handley. This confidence interval assumes a normal probability distribution. For example, the 95 per cent confidence interval for the annual historical excess return estimate for 1958–2010(calculated as an arithmetic mean) is 0.2 – 12.7 per cent. Handley, *Memorandum: Equity Risk Premium 1883 to 2010*, May 2011, p. 1

443 An arithmetic mean simply sums all return observations and divides by the number of observations. A geometric mean multiplies a return observation by one plus the next years return cumulatively across the period, and then takes the nth root of the cumulative product of returns where n is the number of observations. See AER, *Draft decision*, April 2011, pp. 213–214.

444 SFG, *Issues affecting the estimation of MRP*, 21 March 2011, pp. 17–18.

445 AER, *Draft decision*, April 2011, p. 214.

446 The cumulative return across a 10 year period will be less than the average of yearly returns because a negative return in later years will reduce the value of gains in previous years as well as the value of the initial portfolio. This is not reflected in arithmetic means of yearly returns. The geometric mean across the entire time periods considered by the AER are significantly less than the arithmetic means across the same period, which reflects the cumulative effect of negative returns on the previous years' returns.

447 SFG, *Issues affecting the estimation of MRP*, 21 March 2011, pp. 17–18.

estimate of historical excess returns over a 10 year period is likely to be somewhere between the geometric mean and the arithmetic mean of annual excess returns. The imprecise nature of historical excess returns estimates, as well as other indicators of the expected MRP, means a significant degree of judgment is required when interpreting the available evidence to inform the best estimate of the expected MRP.

The consideration of imputation credits in historical excess returns

SFG submitted that changes in the assumed value for the imputation credit utilisation rate (theta) only have a minor impact on historical estimates of the MRP. It submitted that, by itself, a change in theta would not justify departing from an MRP of 6.5 per cent to 6 per cent.[448] SFG also stated that changing the sample periods over which the MRP is calculated has a more significant impact than changing the assumed value of theta on historical estimates of excess returns.[449]

By contrast, the NTMEU suggested the AER should reduce the MRP below 6 per cent to maintain consistency in the reduction in gamma (theta) determined by the Australian Competition Tribunal.[450]

The AER acknowledges that, by itself, a change in theta would not justify departing from an MRP of 6.5 per cent to 6 per cent. It recognises that the estimation of the MRP is imprecise and requires consideration of a range of evidence. The AER also notes that it was primarily the uncertainty arising from the impact of the GFC at the time of the WACC review that prompted it to depart from previous regulatory practice and increase the MRP from 6 per cent to 6.5 per cent.[451] It was not the assumed value of theta that prompted the AER to increase the MRP from 6 per cent to 6.5 per cent.

The AER has considered estimates of historical excess returns that have been explicitly 'grossed-up' for an assumed value of theta of 0.35. That is, the historical excess return estimates considered by the AER were first estimated using data on dividends and capital gains from accumulation indices, and observations of yields on 10 year CGS. These estimates were then adjusted for an assumed theta value.[452] It would be internally inconsistent within the building blocks framework to consider historical excess return estimates that have been adjusted for an assumed value of theta different from that adopted by the AER to estimate the cost of corporate income tax.

At the time of the draft decision, the AER determined that the best estimate of theta was 0.65. It therefore considered historical excess return estimates that were explicitly grossed-up using an assumed value of theta of 0.65. In this final decision, the AER has adopted a theta estimate of 0.35. Therefore it has considered historical estimates

448 SFG, *Issues affecting the estimation of MRP*, 21 March 2011, pp. 5–7.

449 SFG, *Issues affecting the estimation of MRP*, 21 March 2011, pp. 5–7*; SFG, The relationship between theta and MRP, Report for Envestra*, September 2010, p. 4–5. As noted in the draft decision the sample periods used for estimating historical excess returns were chosen based on data quality considerations, not to intentionally bias estimates of historical excess returns as was suggested by SFG. See AER, Draft decision, February 2011, pp. 212–213.

450 NTMEU, Submission to the AER, June 2011, p. 49.

451 AER, Final decision, *WACC review*, May 2009, p. 238.

452 Handley, *An Estimate of the Historical Equity Risk Premium for the Period 1883 to 2010*, 25 January 2011, pp. 3–4.

of excess market returns that have been grossed-up for a theta estimate of 0.35. As shown in table A.2, historical excess return estimates grossed-up for a theta estimate of 0.35 over different periods and calculated as arithmetic means are 5.9–6.4 per cent.

Due to the imprecise nature of historical excess return estimates as outlined above, it may be inappropriate to adjust estimates when the assumed value of theta, and the resulting impact on the estimated returns, is very small. However, consistent with the draft decision[453] and previous regulatory practice[454], the AER has taken a conservative approach and considered estimates that have been explicitly grossed-up to take into account the value of distributed imputation credits.

VAA statement on imputation credits and the MRP

VAA stated that, in the draft decision, the AER misquoted VAA's view.[455] The AER does not consider it has misquoted the position stated in VAA's August 2008 report. In the draft decision, the AER referred to the main conclusion in the August 2008 report by VAA, which stated the following:[456]

> We recognise that precise estimation of both the MRP without imputation tax benefits and the estimation of imputation tax benefits is a challenge due to 'noise' in historical data. An overlay of the need for regulatory certainty encourages us to recommend that there be no change in the widely used 6% under a view that imputation tax benefits have no value but this is not enough to prevent our recommendation of 7% when imputation benefits are included. While we have not focused on estimating an explicit value of gamma or the value of imputation tax credits once distributed in this paper, regulatory practice places a value on gamma of 0.3 and greater. Under these circumstances we recommend the MRP be 7%.

However, in its March 2011 report, VAA has referred to its discussion in a January 2009 report about whether regulatory decisions prior to the WACC review had regard to the value of imputation credits. The January 2009 report stated that historical estimates of the MRP considered by regulators prior to the WACC review had not been explicitly grossed-up to incorporate a specific value for imputation credits.[457]

In the WACC review explanatory statement, the AER did not dispute that the historical estimates of the MRP considered by regulators prior to the WACC review had not been explicitly grossed-up to incorporate a specific value for imputation credits. However, the AER noted that regulators had previously had regard to the value of imputation credits when setting the MRP. Specifically, forward looking estimates of the MRP were explicitly grossed-up to incorporate a value for imputation

453 AER, *Draft decision*, April 2011 pp. 74–75.

454 See for example, AER, Final decision: *Victorian electricity distribution network service providers*, October 2010, p. 488.

455 VAA, *Comments on the market risk premium*, March 2011, appendix 1.

456 VAA, *Market risk premium, a review paper*, August 2008. Note the conclusion is outlined before the introduction section. This position was also repeated in a later report, see VAA, *Market risk premium, further comments*, January 2009, p. 1.

457 VAA, *Comments on the market risk premium*, March 2011, appendix 1.

credits, but historical estimates of the MRP were not explicitly grossed-up to reflect the value of imputation credits.[458]

Furthermore, the AER considered it appropriate to gross-up historical estimates of the MRP to incorporate the assumed value of imputation credits for the excess returns following the introduction of the imputation tax system in 1987. This was noted in the WACC review final decision.[459]

A.2.2 DGM based estimates of the MRP

As discussed below, DGM based estimates of the return on equity and inferred estimates of the MRP are highly sensitive to the assumptions made. It is necessary that all assumptions made have a sound basis, otherwise estimated results from DGM analysis may be inaccurate and lead analysts into error.[460] The AER considers that DGM based analysis should not be used as the principal basis for estimating the return on equity and at best can be used as a check on the reasonableness of the estimated return on equity.

CEG submitted analysis, which suggested that an MRP of 7.4 per cent combined with an equity beta of 1.0 and a growth rate of zero would equate current dividend forecasts to the current share prices of six energy network businesses. However, its analysis is highly sensitive to the assumptions made. For example, CEG has grossed up its estimates for an assumed value for theta of 0.5. However, if the model was adjusted to incorporate a theta estimate of 0.35,[461] CEG's suggested estimate of the MRP (combined with an equity beta of 1) would change from 7.4 to 6.7 per cent.

CEG's analysis is also dependent on the current dividend yields (approximately 7–10 per cent) for the six energy network businesses analysed being maintained into perpetuity. However, these yields are very high compared to the market average, which was estimated to be approximately 4 per cent in April 2011.[462] If the analysis was changed to incorporate an assumed dividend yield of 4 per cent, a theta value of 0.35 and a zero growth rate across all six businesses, the MRP estimated from CEG's analysis would change from 7.4 per cent to –0.9 per cent.[463] This illustrates the high sensitivity of DGM analysis to the assumptions made.

The basis for the AER's beta estimate of 0.8 is outlined in chapter 5. To separately estimate the MRP using DGM analysis, dividend yields and growth forecasts would

458 AER, Explanatory statement*: Electricity transmission and distribution network service providers, Review of the weighted average cost of capital (WACC) parameters*, December 2008, pp. 144–146 (AER, Explanatory statement: *WACC review*, December 2008).

459 See AER, Explanatory statement: *WACC review*, December 2008, pp. 161–166; AER, Final decision: *WACC review*, May 2009, p. 209.

460 For example corporate finance texts have noted "The simple constant-growth DCF [discounted cash flows] formula is an extremely useful rule of thumb" but "Naive trust in the formula has led many financial analysts to silly conclusions." Richard Brealey, Stewart Myers and Franklin Allen, *Principles of Corporate Finance: International Edition*, 9th Edition, Boston: McGraw-Hill, 2008, p.95.

461 The value of theta of 0.35 is applied by the AER for the purposes of estimating the cost of corporate income tax, which is discussed in chapter 6.

462 This is based on the MSCI Australia index. See RBA statistical tables, Table F.7 – share market, available at http://www.rba.gov.au/statistics/tables/pdf/f07.pdf, viewed 13 May 2011.

463 This is based on AER analysis using CEG's DGM analysis.

need to be estimated for the market as a whole.[464] The MRP estimated using CEG's DGM analysis and adjusted to incorporate market wide assumptions is approximately 4.5–5.6 per cent over a notional 10 year horizon.[465] This estimate is based on the following assumptions:

- a theta value of 0.35, consistent with the value applied in estimating the cost of corporate income tax in this decision
- a dividend yield of approximately 4–5 per cent, consistent with average dividend yields on the ASX 200 index[466]
- an assumed dividend growth rate of 6 per cent, consistent with long-term GDP growth estimates from the Reserve Bank of Australia (RBA) of approximately 3.5 per cent [467] and an assumed inflation rate of approximately 2.5 per cent, consistent with long-term inflation forecasts.

Table A.3 MRP estimates with different growth assumptions (per cent)

Growth rate	Theta value	Dividend yield	Estimated MRP
0	0.35	4 – 5	–0.9 – 0.4
3.5	0.35	4 – 5	2.3 – 3.4
6.0	0.35	4 – 5	4.5 – 5.6

Source: AER analysis.

Table A.3 illustrates that forward looking MRP estimates based on DGM analysis are significantly lower than NT Gas's proposed MRP of 6.5 per cent.

A.2.3 Implied volatility from option prices

VAA stated that it estimated a forward view of the MRP over time.[468] The AER accepts that the MRP is a forward looking value and that it is likely to revert to a mean value over time. However, as explained below, the AER does not consider that VAA's implied volatility and 'glide path' approach provides the best estimate of a long-term MRP for the purposes of this decision. In the draft decision the AER outlined its concerns about the use of a constant market risk per unit of implied volatility from option prices in providing a one year MRP estimate.[469]

464 This is because the MRP is a market-wide parameter and is not specific to a particular firm or industry

465 These figures are the estimated premium in excess of the 10-year CGS yield, which implies a notional 10-year investment horizon.

466 Average dividend yields estimated from the MSCI Australia index for 2005–2011 as reported in RBA statistical tables, Table F.7 – share market, available at http://www.rba.gov.au/statistics/tables/pdf/f07.pdf, viewed 13 May 2011. SFG has suggested that the current dividend yield of approximately 4 per cent is higher than much of the past decade; see SFG, Issues affecting the estimation of MRP, 21 March 2011, p. 11.

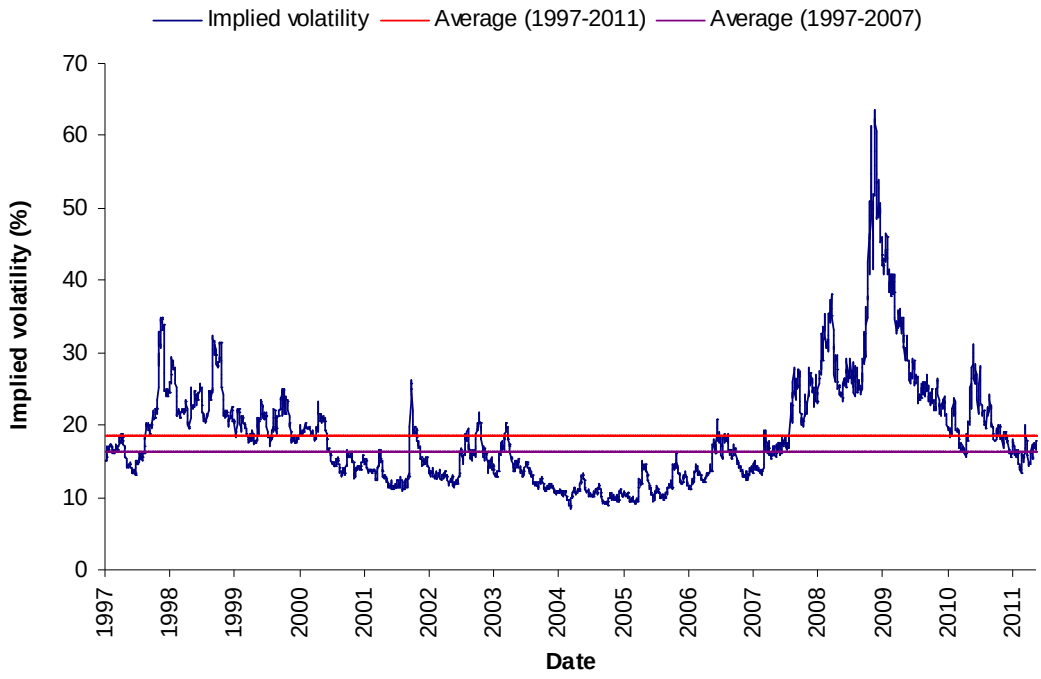
467 RBA, *Statement on monetary policy*, May 2011, p. 63.

468 VAA, *Comments on market risk premium*, March 2011, p. 8.

469 AER, *Draft decision*, April 2011, pp. 214–217.

The AER is not aware of a reliable way of directly estimating the MRP over a one year period (let alone for a 10 year time horizon) using implied volatility from option prices. In addition, figure A.1 illustrates the high variability of option implied volatility over time. As a result, the AER considers that option implied volatility is at best a qualitative indicator of the expected MRP.

Figure A.1 Implied volatility from prices of 3 month options on the ASX200 index



Source: AER analysis

VAA and SFG stated that implied volatility from option prices increased significantly at the time of the GFC. They stated that implied volatility has reduced since the height of the GFC, but currently remains above pre-GFC levels.[470] VAA previously stated that where there are abnormal levels of volatility it is appropriate to use an alternative approach (such as its suggested implied volatility and 'glide path' approach) to adopting a long-term estimate.[471] However, implied volatility appears to have reduced significantly since the height of the GFC and is currently consistent with levels experienced prior to the GFC, which can be seen from figure A.1. Figure A.1 shows the average implied volatility indicated by 3 month options since 1997, both prior to the GFC and the average across the entire period. Current levels of implied volatility are consistent with both of these averages. In this context, the AER does not consider it appropriate to accept VAA's suggested implied volatility and 'glide path' approach, which was initially proposed as an alternative to long term estimates based on prevailing conditions characterised by very high levels of implied volatility.

470 VAA, *Comments on market risk premium*, March 2011, pp. 4–5; SFG, *Issues affecting the estimation of MRP*, 21 March 2011, p. 10.

471 VAA, *Market risk premium, estimate for January 2010–June 2014*, December 2009, p. 1.

A.2.4 Current market conditions

VAA presented a graph showing time to recovery after previous stock market crashes. It stated that the graph shows that there is still some time to pass before the market recovers to pre-GFC levels. The AER notes that VAA's graph shows that the path of recovery following previous stock market crashes varies significantly—for example, between approximately 3 and 8 years.[472] VAA has not provided a framework for assessing the time to recovery since the 2007 crash. As a result it is not possible to draw conclusions about when the market will return to pre-2007 levels for the purposes of this decision.

The latest evidence provided by VAA suggests that implied volatility derived from the prices of three month and one year options on the ASX200 index appears to have significantly reduced since the height of the GFC. Furthermore, figure A.1 indicates that implied volatility has returned to pre-GFC levels.

Recent statements from the RBA, the Organisation for Economic Co-operation and Development (OECD) and the International Monetary Fund (IMF) continue to indicate a robust economic outlook.

In an October 2010 staff report and public information notice, the IMF stated that the economic outlook for Australia remains favourable. It forecast economic growth of 3 to 3.5 per cent over 2010 and 2011.[473]

In the May 2011 Statement on Monetary Policy the RBA stated:

> The Bank's medium-term central scenario for the economy remains similar to that discussed over the past year or so. For most of the forecast horizon, growth is expected to be at, or above, trend and the unemployment rate is expected to decline gradually. Compared with three months ago, the forecasts for growth in 2012 and into 2013 have been lowered a little, largely reflecting the recent appreciation of the exchange rate. In the short term, the quarterly profile for GDP will be significantly affected by the floods; as noted above, aggregate output is likely to have declined in the March quarter, but a bounce-back is expected in the June and September quarters.[474]

In its May 2011 economic outlook summary for Australia, the OECD continued to forecast robust economic growth in Australia. The OECD stated:

> The Australian economy is set to rebound after the disruptions caused by major natural disasters in early 2011. Growth, driven by historically high terms-of-trade, should accelerate from 3% in 2011 to 4½ per cent in 2012. Unemployment is projected to fall, although the remaining slack in the economy will mute the risk of inflation pressures.[475]

---

472 VAA, *Comments on market risk premium*, March 2011, pp. 5–6.

473 IMF, *Australia: 2010 Article IV Consultation—Staff Report; and Public Information Notice on the Executive Board Discussion*, October 2010, p. 10. available at http://www.imf.org/external/pubs/ft/scr/2010/cr10331.pdf.

474 RBA, *Statement on monetary policy*, May 2011, p. 3.

475 OECD, *Australia economic outlook 89—country summary*, May 2011, http://www.oecd.org/document/15/0,3746,en_2649_33733_45268687_1_1_1_1,00.html, viewed 7 June 2011.

In July this year, RBA Governor Glenn Stevens noted the following of ongoing concerns over the debt of several European governments:

> The banking and sovereign debt problems in Europe have also added to uncertainty and volatility in financial markets over recent months.
>
> A key question is whether this more moderate pace of growth will continue. Commodity prices have generally softened of late, though they remain at very high levels. Despite the challenging international environment, the central scenario for the world economy envisaged by most forecasters remains one of growth at, or above, average over the next couple of years.[476]

VAA noted that there may be times where market risk is substantially below long-term estimates. VAA noted that in such a scenario it would advocate using a 'glide-path' approach to estimating an MRP that reverts to a long-term estimate. Such an approach would set an MRP below long-term estimates. In the draft decision the AER noted that forward looking estimates of the MRP have previously been lower than long-term historical excess return estimates. However, the ACCC and state regulators have consistently adopted a long-term MRP estimate of 6 per cent when this was the case.[477]

There is significant difficulty in calculating the MRP on a time varying basis. For this reason the AER considers a long-term MRP estimate is likely to provide the best estimate in the absence of a structural break.[478] At the time of the GFC, the AER increased its long-term MRP best estimate of 6 per cent to 6.5 per cent to take into account the uncertainty associated with the effects of the GFC on future market conditions. As discussed above, market conditions since the GFC have significantly improved and reflect reduced concern about the potential ongoing impact of the GFC. There is also a much more robust long-term economic and financial markets outlook for Australia than was the case at the height of the GFC.

A.2.5 Survey evidence

In the draft decision, the AER noted that survey evidence both prior to and following the GFC supported an MRP of 6 per cent. Survey evidence prior to the GFC included the following:

- Truong, Partington and Peat (2008) found that the MRP adopted by Australian firms in capital budgeting ranged from 3–8 per cent, with an average of 5.94 per cent. The most commonly adopted MRP was 6 per cent.

- Capital Research (2006) found that the average MRP adopted across a number of brokers was 5.09 per cent.

476 RBA, *Statement by Glenn Stevens, Governor: Monetary Policy Decision*, 5 July 2011. Available at http://www.rba.gov.au/media-releases/2011/mr-11-15.html viewed 15 July.

477 AER, *Draft decision*, April 2011, pp, 69–70.

478 See also AER, Final decision, *WACC review*, 1 May 2009, pp. 190–191.

- KPMG (2005) found that the MRP adopted in independent expert valuation reports ranged from 6–8 per cent. KPMG's report showed that 76 per cent of survey respondents adopted an MRP of 6 per cent.[479]

The latest survey evidence, conducted following the GFC included the following:

- Fernandez (2009) found that the MRP used by Australian academics in 2008 ranged from 2–7.5 per cent with an average of 5.9 per cent.[480]

- Fernandez and Del Campo (2010) found that the MRP used by Australian analysts in 2010 ranged from 4.1–6 per cent with an average of 5.4 per cent[481]

- A further survey by Fernandez et al (2011) reported that average MRP used by 40 Australian respondents ranged from 5–14 per cent, with an average of 5.8 per cent.[482]

NT Gas noted some shortcomings of survey based evidence on the MRP. These shortcomings included that it was unclear what timeframe respondents had in mind, that responses are based on opinion or may reflect bias on behalf of some respondents.[483] The AER acknowledges that survey results are subjective because different market practitioners may look at a range of different time horizons and they are likely to have differing views on market risk. However, survey based estimates of the MRP are forward looking, reflect actual market practice, and are unlikely to be biased with respect to the "true" opinions of the respondents.

The AER recognises that the latest survey based evidence from 2009 and 2010 incorporates a limited sample of respondents. However, the 2011 survey reflects the views of 40 respondents, and reports average MRP values that are consistent with those in the previous 2009 and 2010 surveys. There was a significant amount of survey evidence preceding the GFC, which supported an MRP of 6 per cent. This latest survey evidence indicates that the MRP applied by market practitioners is unlikely to have changed as a result of the GFC.

Due to the subjective nature of survey based estimates, uncertainty about the term over which the MRP is estimated by different respondents and the differing views of respondents about market risk, the AER has not relied exclusively on survey based estimates of the MRP. Nonetheless, survey based estimates of the MRP are relevant for consideration along with the range of other evidence on the MRP.

A.2.6 Market practice

The AER notes that the range of MRP estimates used in broker reports was 5–6.5 per cent, with an average of approximately 5.9 per cent. In addition to this,

479 AER, Final decision, *WACC review*, May 2009, pp. 221–225.

480 Fernandez and Del Campo, *Market Risk Premium used by Professors in 2008: A Survey with 1400 Answers*, IESE Business School Working Paper, WP-796, May 2009, p. 7.

481 Fernandez and Del Campo, Market *Risk Premium Used in 2010 by Analysts and Companies: A Survey with 2400 Answers*, IESE Business School, May 21 2010, p. 4.

482 Fernandez, Arguirreamalloa and Corres, *Market Risk Premium used in 56 Countries in 2011: A Survey with 6,014 Answers*, IESE Business School Working Paper, WP-920, May 2011, p. 3.

483 NT Gas, *Revised access arrangement submission*, May 2011, pp. 50–1.

recent research completed by Shane Oliver, Head of Investment Strategy and Chief Economist at AMP Capital Investors, suggested that the likely equity risk premium for a 5 to 10 year period is 5.9 per cent based on historical data.[484] However, he noted that this realised equity risk premium is probably exaggerated by a low starting point for the price to earnings ratio, making it easier for shares to provide decent returns. He stated that AMP Capital Investors' estimate of the prospective required equity risk premium for shares is around 3.5 per cent. [485]

A.2.7 Difference between cost of equity and cost of debt

SFG and VAA submitted that the spread between AAA and BBB bonds increased significantly at the time of the GFC and still remains above pre-GFC levels. They stated that this indicates that market conditions have not returned to normal.[486] However, the AER considers that data on the spread between AAA and BBB bonds is unlikely to be reliable. As discussed in greater detail in section A.3, there is a significant paucity of data on long-term bonds with credit ratings close to BBB.[487] This is likely to reduce the accuracy of yield forecasts for long-term BBB rated corporate bonds, such as those referred to by SFG and VAA. This is demonstrated by the following factors:

- Forecast yields on BBB rated corporate bonds from data providers such as Bloomberg have increased to levels in excess of forecast yields during the GFC, which can be seen in figure A.2. However, this is contrary to statements from the RBA, IMF and OECD, which indicate that debt market conditions have significantly improved since the height of the GFC.

- As outlined in section A.3 below, recent observations of bond yields with similar characteristics to the 10 year BBB+ benchmark bond applied by the AER indicate observed yields on actual corporate bonds are significantly below forecasts from fair value estimates.

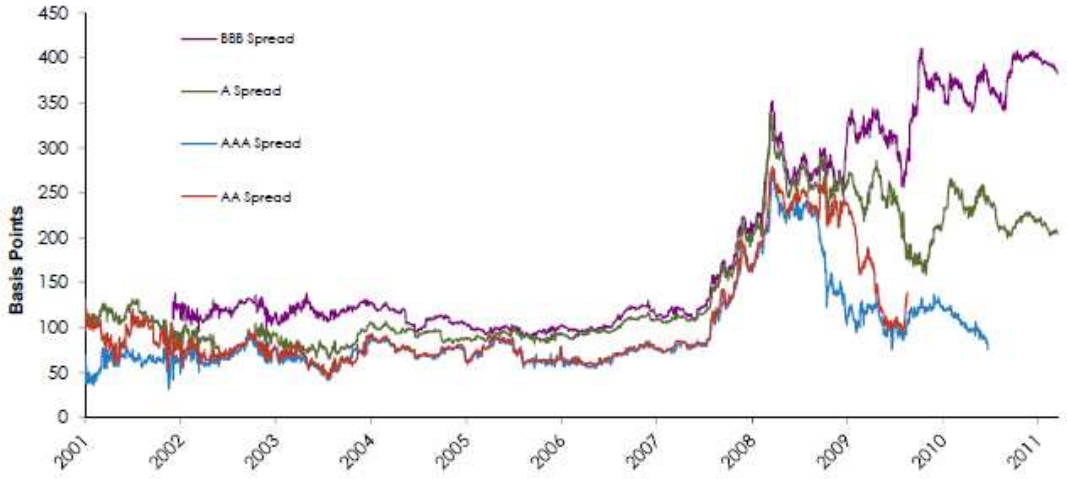
484 This value also incorporates the imputation credit value.

485 AMP Capital Investors, *'Are shares good value and what about bank deposits?', Oliver's insights*, 16 September 2010.

486 SFG, *Issues affecting the estimation of MRP*, 21 March 201, p 12 and VAA, *Comments on market risk premium*, March 2011, p. 2.

487 This is reflective of an illiquid Australian corporate bond market in Australia relative to a more liquid Australian equity market.

Figure A.2 Debt spreads on 7 year corporate bonds over 10 year Commonwealth bonds



Source: VAA, *Comments on market risk premium in draft decision by AER for Envestra February 2011*, March 2011, p. 2.

VAA submitted that there has been a narrowing of the risk premium on equity relative to the risk premium on debt. VAA noted its expectation would be that the equity risk premium would at least rise consistent with the DRP.[488] VAA also noted a report by Professor Grundy to support its expectation that the equity risk premium would rise consistent with the DRP. As noted above, the current difference between BBB and AAA rated bonds as indicated by figure A.2 is likely to be overstated. Moreover, the use of the spread between long-term BBB rated bonds and AAA rated bonds is limited by the paucity of data on long-term bonds with a credit rating close to BBB in the Australian market. It is also possible for conditions in debt and equity markets to differ from each other over time.

A.2.8 Conclusion

Based on the considerations outlined above the AER considers an MRP of 6 per cent is the best estimate in the circumstances and is commensurate with prevailing conditions in the market for funds.[489]

The AER also considers that an MRP of 6 per cent is consistent with the revenue and pricing principles set out in section 24(2)(a) of the NGL. These state that the service provider should be provided with a reasonable opportunity to recover at least its efficient costs. The MRP of 6 per cent best meets the NGO, which is to promote efficient investment in, and efficient operation and use of, natural gas services for the long-term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.

488 VAA, *Comments on market risk premium*, March 2011, pp. 3–4.

489 NGR, r. 87(1).

A.3 Debt risk premium

This section sets out the AER's consideration of matters raised in the revised access arrangement proposal regarding the AER's approach to determine the DRP in the draft decision.

The AER considers that the benchmark DRP should be based on an Australian corporate fixed rate bond issuance with a term to maturity of 10 years and a BBB+ credit rating.[490] Accordingly, the AER has compared all bonds with these characteristics, including floating rate bonds, as reported by Bloomberg and UBS.[491] In particular, the AER has considered the relevance of the following corporate bonds as possible sources of information when setting the benchmark cost of debt:

- APA Group (BBB rating, maturing in July 2020)
- Brisbane Airport (BBB rating, maturing in July 2019)
- Dalrymple Bay Coal Terminal (DBCT) (BBB+ rating, maturing in June 2021)[492]
- SP AusNet (A– rating, maturing in April 2021)
- Stockland (A– rating, maturing in November 2020)
- Sydney Airport floating rate bonds (BBB rating, maturing in November 2021 and October 2022).

The AER has also considered the relevance of Bloomberg's fair value estimates for setting the benchmark cost of debt, as proposed by NT Gas.[493] Figure A.3 plots the corporate bonds considered by the AER, along with Bloomberg's fair value estimates for five and seven years, and extrapolated to 10 years using the AER's extrapolation method.[494]

490 The 10 year benchmark reflects consistency with the term of the risk free rate, while the BBB+ credit rating reflects what the AER determined during the WACC review following consideration of comparable energy businesses. Although the SORI has no status under the NGR, it was intended to provide guidance to the gas sector. AER, *Review of the weighted average cost of capital (WACC) parameters, Statement of regulatory intent*, 1 May 2009.

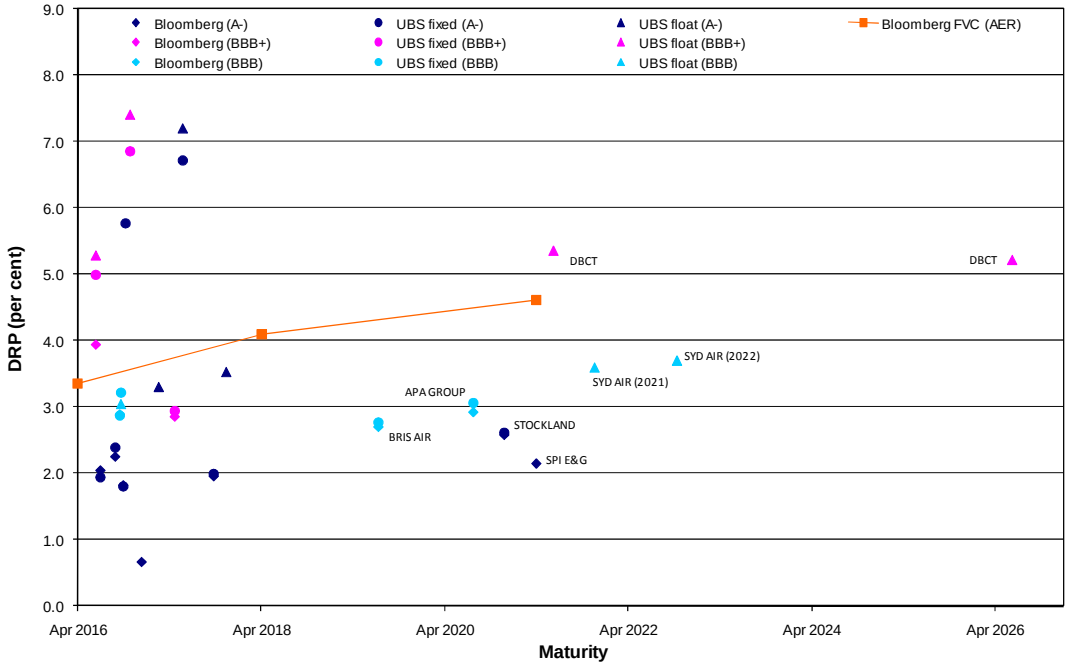
491 CBASpectrum also publish observed yields for Australian corporate bonds. However, CBASpectrum no longer provide accompanying credit rating details for these issuances. It is therefore difficult to reconcile the observed bonds with their credit rating. Additionally, the sample of bonds provided by CBASpectrum is not comprehensive compared with Bloomberg and UBS. In combination, these restrictions do not allow CBASpectrum data to be used independently—that is, without cross referencing bond yields with other data service providers such as Bloomberg and UBS. Given these practical limitations, the AER has not relied upon CBASpectrum's observed yields for the purposes of this decision.

492 The DBCT bond was originally issued by Babcock and Brown Infrastructure (BBI). In December 2009, however, BBI underwent a recapitalisation process and was renamed as the Prime Infrastructure Group.

493 Bloomberg does not publish separate fair value estimates for BBB–, BBB and BBB+ rated debt. Instead, bonds with ratings in the generic BBB category are included in a single sample. References within this chapter to Bloomberg's BBB fair value estimates encompass bonds with a credit rating of BBB–, BBB or BBB+.

494 The AER's extrapolation approach is detailed in the draft decision. AER, *Draft decision*, April 2011, pp. 208–211.

Figure A.3 Australian corporate bonds with maturities greater than five years and credit ratings ranging from BBB to A–



Source: Bloomberg, UBS, AER analysis.

Note: Yields have been annualised, and the floating rate bonds have been converted to fixed rate equivalents. While no other adjustments have been made, the AER recognises that the SP AusNet bonds include resettable coupons (that adjust the coupon rate upon a credit rating downgrade) and the DBCT bond is callable. As noted by Oakvale Capital the likely yield impact of resettable coupons is expected to be small (25 basis points).[495] Additionally, the make whole nature of the DBCT bond largely removes the yield impact of the call feature.[496]

A.3.1 Bloomberg fair value estimates

The AER maintains its view that a range of evidence suggests that the behaviour of Bloomberg's fair value estimates since the onset of the GFC is somewhat counterintuitive. Specifically, Bloomberg's seven year, BBB rated fair value estimates and the spread between Bloomberg's seven and 10 year, AAA rated fair value estimates remain at near historical highs.[497]

Moreover, the AER considers that CBASpectrum's decision to cease publication of its fair value curves raises questions about the validity of using Bloomberg's fair value estimates as the only source of information when setting the DRP. In particular, the AER understands that one factor in CBASpectrum's decision was concerns about reliability, and Bloomberg's and CBASpectrum's fair value estimates rely on similar input data.[498] The fact that Bloomberg has progressively reduced the term of its BBB fair value estimates further highlights the difficulties in developing such estimates for long-term bonds given the paucity of such bonds in the Australian market.

---

495 Oakvale Capital, *Report on the cost of debt during the averaging period: the impact of callable bonds*, January 2011, pp. 8–9.

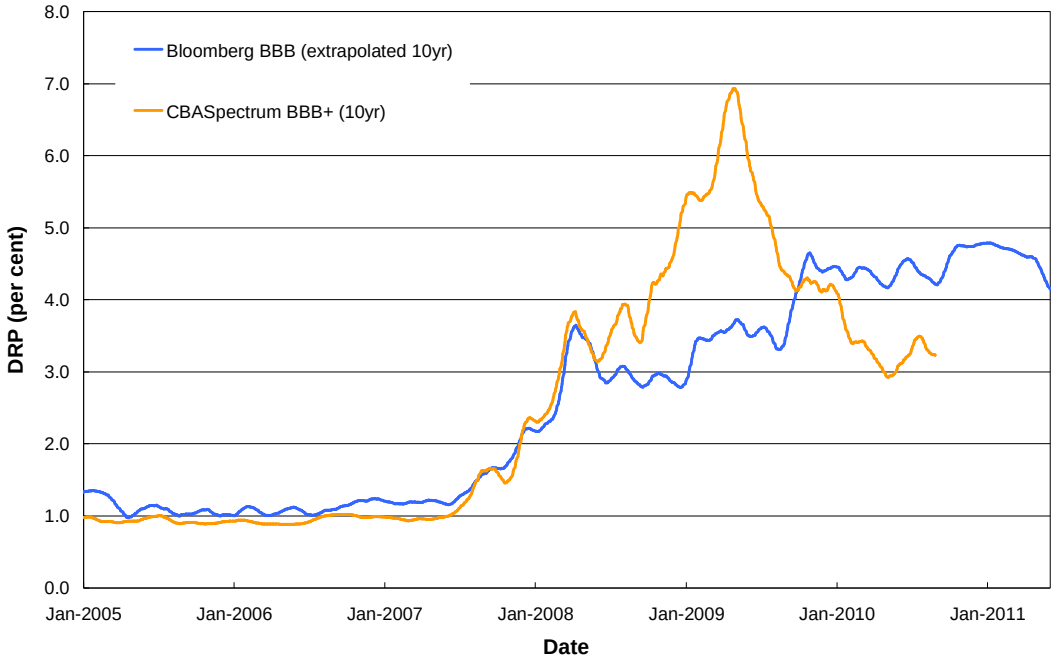
496 CEG, *Estimating the 10 year BBB+ cost of debt, A report for JGN*, December 2010.

497 The spread between Bloomberg's seven and 10 year, AAA rated fair value estimates are used by the AER to extrapolate Bloomberg's seven year, BBB rated fair value estimates.

498 CBASpectrum website <https://www.cbaspectrum.com/Html/NewAboutSpectrum.html>.

In this context, figure A.4 compares the historical DRP estimates for both Bloomberg (extrapolated to 10 years) and CBASpectrum. Notably, Bloomberg's fair value estimates imply that prevailing conditions in debt markets are more risky now than during the GFC, despite substantial evidence indicating that debt market conditions have improved.[499]

Figure A.4 Comparison of debt risk premia—Bloomberg and CBASpectrum



Source: Bloomberg, CBASpectrum, AER analysis.

NT Gas disagreed with the AER's interpretation of Bloomberg's fair values as being counterintuitive.[500] In doing so it referred to a report by Australia Ratings which stated that a repricing of credit risk has occurred since the GFC, with a resultant impact on the composition of ratings defined indices.[501] Australia Ratings also commented that judging the performance of an index such as Bloomberg's fair value estimates depends on the subjective selection of the time period under examination and choice of comparators. It noted that, for example, it had measured an increase of around 17 basis points of spreads on bonds issued by the four largest Australian banks from December 2009 to May 2011.[502]

The AER accepts that debt margins have increased in comparison to pre-GFC levels. However, independent evidence, such as the RBA's March 2011 and June 2010 bulletins, indicates that spreads have subsided markedly since peaking during the height of the GFC.

499 The AER accepts that movements in equity markets are only one factor affecting debt risk premiums. Other factors, such as default and liquidity risks, are also important considerations when assessing bond yields. These factors are discussed in greater detail throughout this appendix.

500 NT Gas, *Revised access arrangement submission*, May 2011, pp. 54–6.

501 Australia Ratings, *Estimating the debt risk premium*, May 2011, pp. 13–16.

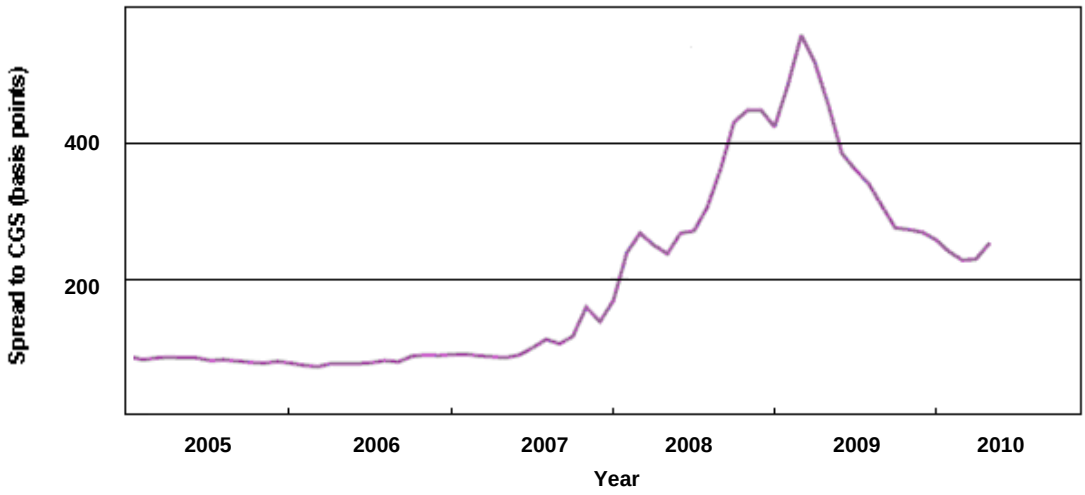
502 Australia Ratings, *Estimating the debt risk premium*, May 2011, pp. 20–23.

In relation to bank funding costs, the RBA's March 2011 bulletin stated that while spreads (relative to CGS) increased significantly during the crisis—from around 50 basis points to around 220 basis points for 3 year bonds—improved capital market conditions have seen the cost of issuing new debt fall to around 100 basis points (relative to CGS).[503]

In relation to lower rated debt, the RBA's June 2010 bulletin stated that as risk aversion increased during the financial crisis, spreads (relative to CGS) for BBB rated corporate bonds widened to historical highs, peaking in March 2009.[504] Consistent with its analysis of bank debt, the RBA added that spreads across all bond classes have since narrowed, though remain above the unusually low levels observed prior to the financial crisis.

The RBA's analysis is based on a weighted average of spreads on corporate bonds with remaining terms to maturity of between one and five years. However, the AER considers that, for similar reasons, the spreads would likely have also narrowed for longer rated bonds. The widening and subsequent contraction of corporate bond spreads, as provided by the RBA, is shown in figure A.5.

Figure A.5 BBB rated corporate bond spreads (term to maturity of five years)



Source: RBA, *Bulletin: June quarter 2010*, June 2010, p. 58.

Further, as noted in section A.2, recent IMF and OECD reports indicated that the market outlook for Australia has improved considerably since the onset of the GFC.[505] Moody's Investors Service also stated its expectation that default rates for speculative, Asia Pacific (excluding Japan) non-financial corporate debt will continue to decline in 2011.[506] The AER considers that these expectations, including those of the RBA, are all consistent with improving debt market conditions. On this basis, it is inappropriate to expect, as implied by the fair value estimates proposed by NT Gas using Bloomberg data, that debt markets are more risky now than during the GFC.

503 RBA, *Bulletin: March quarter 2011*, March 2011, p. 37.

504 RBA, *Bulletin: June quarter 2010*, June 2010, pp. 58–59.

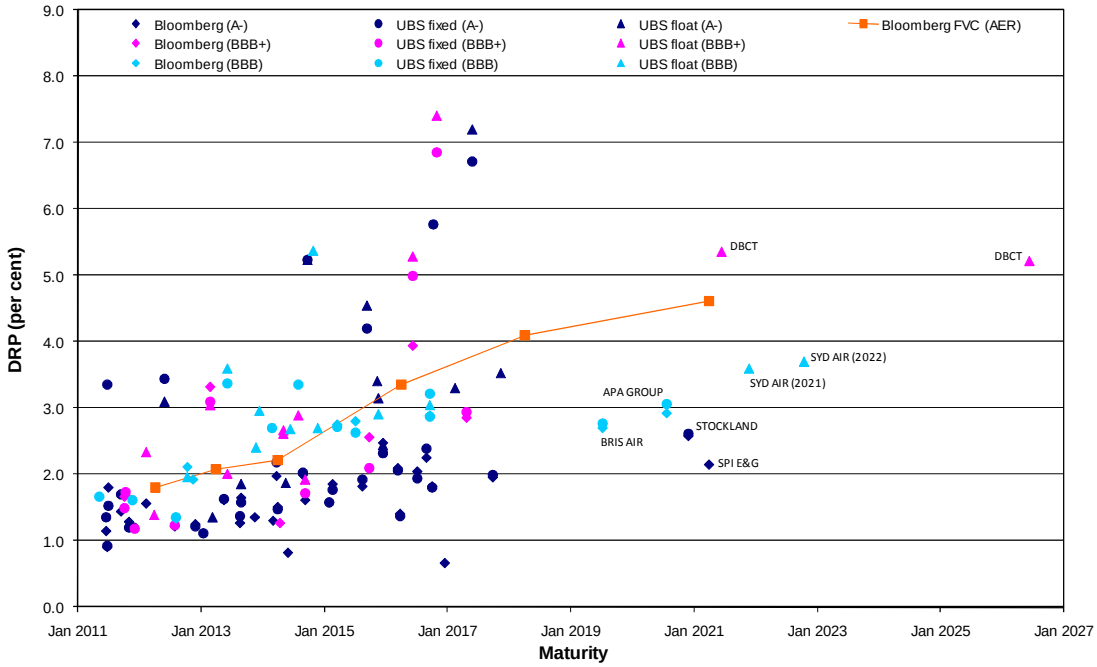
505 Yan Sun, *Potential Growth of Australia and New Zealand in the Aftermath of the Global Crisis*, IMF Working Paper, WP/10/27, May 2010; OECD, *Australia economic outlook 88—country summary*, November 2010.

506 Moody's Investors Service, *Moody's: Asia Pacific corporate default rates will keep declining*, April 2011.

Additionally, the proprietary nature of Bloomberg's fair value modelling limits the AER's ability to assess the factors driving Bloomberg's implied fair value curve. As noted in previous regulatory decisions, without an in depth understanding of Bloomberg's methodology, analysis can only be based on conjecture about how its fair value estimates are derived.[507] Given the limited ability to assess Bloomberg's fair value methodology, coupled with the contrary behaviour of Bloomberg's BBB rated fair value estimates (in comparison to independent market commentary), the AER maintains its position that it should remain cautious of relying solely on Bloomberg's fair value estimates to establish the benchmark DRP.

The market data that has recently become available—including bond issuances by the APA Group, Brisbane Airport, SP AusNet, Stockland and Sydney Airport, and the fall in observed yields for the DBCT bond—also suggests that Bloomberg's fair value estimates may not be representative of prevailing conditions in the market for funds in respect of the AER's notional benchmark service provider.[508] As figure A.6 demonstrates, longer term observed bond yields with comparable ratings now plot significantly below Bloomberg's implied fair value curve.[509]

Figure A.6 Australian corporate bonds with credit ratings ranging from BBB to A–



Source: Bloomberg, UBS, AER analysis.
Note: Yields are annualised, and floating bonds have been converted to fixed rate equivalents. No other adjustments have been made.

507 AER, *ActewAGL, Access arrangement proposal for the ACT, Queanbeyan and Palerang gas distribution network*, Draft decision, November 2009, pp. 67, 218–219.

508 As discussed in previous AER decisions and in the WACC review (in the context of electricity network service providers), the benchmark service provider being considered under r. 87 is a stand alone 'pure play' service provider, operating in Australia without parent ownership and the relevant market for funds is Australia. AER, Final decision, *Jemena Gas Networks, Access arrangement proposal for the NSW gas networks, 1 July 2010–30 June 2015*, June 2010, p. 113; AER, Final decision, *WACC review*, May 2009, p. 109.

509 In the AER's draft decision for NT Gas, the observed yield on the DBCT bond was above Bloomberg's (extrapolated) 10 year, BBB rated fair value estimate. As discussed in section A.3.4, observed yields for the DBCT bond have since fallen.

In response to the analysis performed by the AER for its recent QLD and SA gas access determinations, CEG stated that observed yields for an additional seven bonds with maturities greater than seven years are available (three from Suncorp Insurance, and two each from DBCT and Vero Insurance), and should be considered by the AER.[510] The Bank of Queensland also recently issued longer term floating rate notes with a BBB credit rating. The AER noted in its final decisions for Envestra and APT Allgas that the Suncorp, Vero and Bank of Queensland bonds are not comparable with the AER's notional benchmark service provider, and therefore immaterial to its analysis, because:

- as they are all callable bonds, this raises issues around potential adjustments to their yields and maturity dates to ensure an appropriate comparison to standard bonds which reflect the AER's benchmark

- regardless of this, Oakvale demonstrated that observed yields for debt issued by financial institutions and insurance firms are typically higher than for debt issued by infrastructure firms

- these bonds are all subordinated debt, which are typically much more volatile than otherwise equivalent standard debt.[511]

The AER considers that the first point is particularly relevant. Specifically, for certain bonds, UBS only publishes yields-to-call (as opposed to yields-to-maturity). However, as stated recently by CEG, the first call date of a callable bond should not be regarded as its maturity date when the bond is unlikely to be called.[512]

The AER agrees with this position, meaning that in such circumstances, it is appropriate to consider the final maturity date of a callable bond as the correct maturity date. Specifically, at the first call date the bond issuer has the option of calling in the debt and refinancing its borrowing by issuing new bonds. If current market conditions are such that the rate of return demanded by investors is higher than the coupon rate for the existing bonds, refinancing would result in a higher cost of debt to the issuer. In these circumstances, no rational bond issuer would call in the debt. Consequently it is more appropriate, under such market conditions, to regard the bonds as having a maturity as at the final maturity date, not the first call date.

This approach impacts on the maturity date for some bonds shown in figure A.6 which are circled in figure A.7 below. In particular, figure A.7 identifies all callable bonds that have been assigned a maturity date according to the first call date.[513] All but one of these bonds are above the Bloomberg fair value curve.

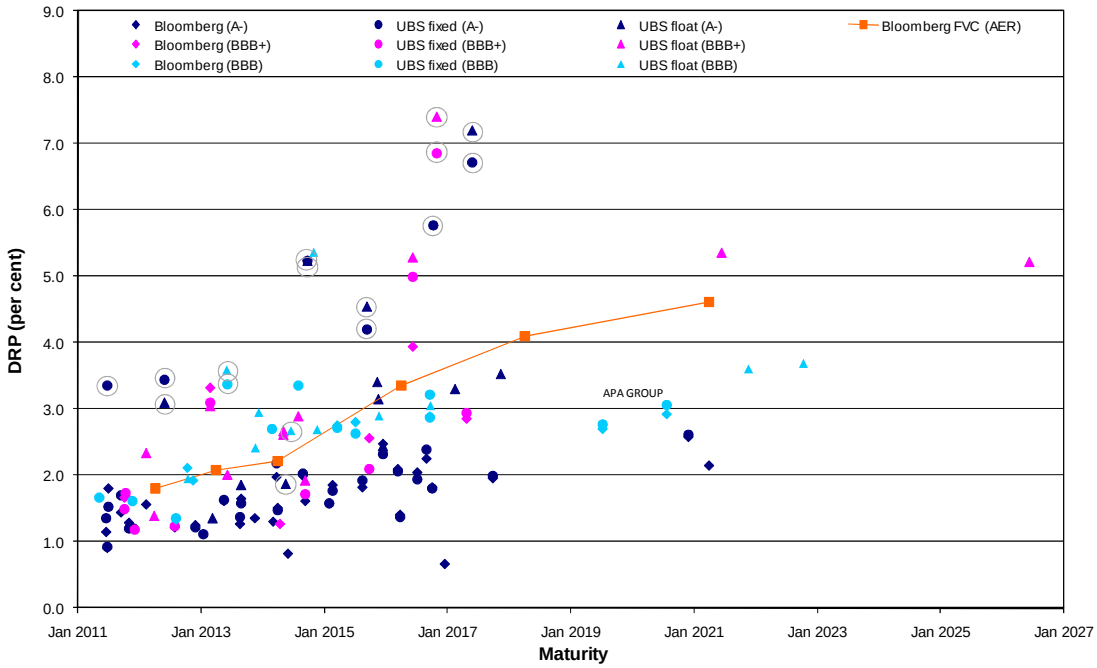
510 CEG, *Response to AER letter dated 23 May 2011*, June 2011, pp. 8–9.

511 AER, *Final Decision Envestra Ltd Access arrangement proposal for the SA gas network 1 July 2011 – 30 June 2016*, June 2011, pp. 207–208.

512 CEG, *A response to letter dated 23 May 2011: A report for Envestra*, paragraph 40.

513 Three callable bonds plotted at yields-to-call also exist, but have a DRP in excess of 11 per cent. As a result, these bonds are not shown in figures A.6 or A.7.

Figure A.7 Australian corporate bonds with credit ratings ranging from BBB to A– (bonds plotted at yield-to-call circled)



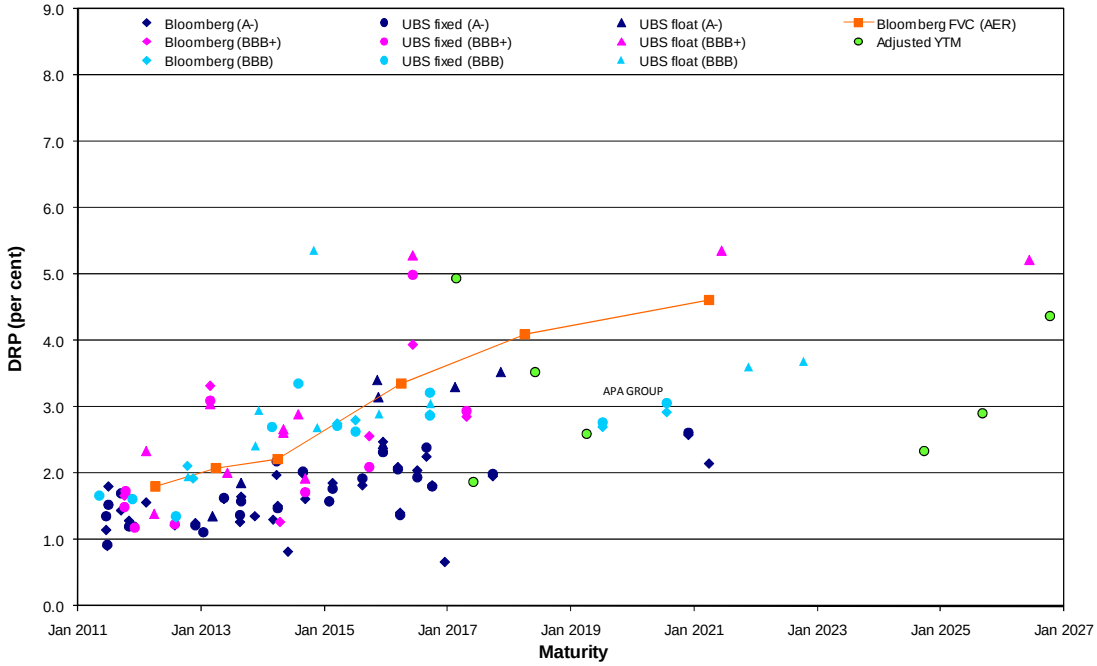
Source: Bloomberg, UBS, AER analysis.
Note: Yields are annualised, and floating bonds have been converted to fixed rate equivalents. No other adjustments have been made.

The bonds circled in figure A.7 should be adjusted to yields-to-maturity to ensure comparison on an equivalent basis to non-callable bonds. To calculate the correct yield-to-final maturity several further aspects of the bond payment schedules are required which are not available on the UBS rate sheet. Bloomberg data, however, facilitates such analysis. In particular, the YASN function on Bloomberg can be utilised to perform the yield-to maturity adjustments.[514] That is, Bloomberg will convert the relevant yield-to-call of a bond to its corresponding yield-to-maturity. Figure A.8 shows the corresponding adjustments to these bonds which are marked in green. In presenting these adjustments the AER has been mindful of divergent yield observations from UBS and Bloomberg, and has omitted these bonds in the figure below.[515]

514 The AER has followed the specification on how to use the Bloomberg YASN as implied by the sequence of screenshots in Appendix J of Oakvale Capital; Report on the cost of debt during the averaging period: The impact of callable bonds, February 2011.

515 The AER has applied a threshold of 100 basis points difference in the yield-to-call estimates from UBS and Bloomberg in excluding adjusted callable bonds.

Figure A.8 Australian corporate bonds with credit ratings ranging from BBB to A– (with adjusted callable bonds)



Source: Bloomberg, UBS, AER analysis.
Note: Yields are annualised, and floating bonds have been converted to fixed rate equivalents.

Based on the empirical market evidence discussed above, the statement that Bloomberg's fair value curve provides estimates of what it would cost to issue or trade a corporate bond with the characteristics of the AER's notional benchmark service provider appears unfounded. Specifically, the alternative analysis presented by NT Gas and Australia Ratings to support the accuracy of Bloomberg's fair value estimates does not include the more recently issued longer dated bonds as presented in figure A.6.[516] Where their analysis does refer to new bond issues, it involves a comparison of bonds of 5 year maturity against a "Bloomberg fair market spread". The relationship between this spread and the 10 year extrapolated Bloomberg's BBB fair value estimates on which NT Gas proposes to set its benchmark DRP is unclear. In any case, this analysis, by reference to shorter dated bonds, misinterprets the AER's task of setting a benchmark DRP.

In this context, the NTMEU observed that Australia Ratings was not asked to assess whether reliance on the APT bond in setting the DRP would produce an efficient outcome with regards to the cost of debt.[517] The AER notes that Australia Ratings was asked directly to comment on whether the use of the APT bond would result in a "benchmark cost of debt" "commensurate with the market for funds". Its response was that this bond was "not representative of the market or the individual risk profiles of other APA Group businesses".[518] Australia Ratings also concluded that use of this bond would produce a biased outcome because of the idiosyncratic risks associated

516 Australia Ratings, *Estimating the debt risk premium*, May 2011, pp. 11–13; NT Gas, *Revised access arrangement submission*, May 2011, pp. 57–8.

517 NTMEU, *Submission to the AER*, June 2011, p. 42.

518 Australia Ratings, *Estimating the debt risk premium*, May 2011, p. 23.

with the APA Group—it did not comment on the direction of this bias, or whether the diversified holdings of the APA Group had a higher or lower default risk than the AER's benchmark BBB+ rated stand alone service provider. The NTMEU commented that "(d)etailed analysis would reveal that the NT Gas operation of APA is lower risk than the average of APA operations".[519]

Conversely, NT Gas and Australia Ratings also stated that the Bloomberg fair value estimates were preferable on the basis that they averaged out the idiosyncratic risks of individual bond issuers.[520] While the Bloomberg fair values are likely to reflect an averaging out of factors affecting particular bonds, the bonds reflected in the Bloomberg fair value curve at present are limited to those with a maturity of just over five years.[521] These issues notwithstanding, the AER is aware of the potential issues affecting individual bonds which might affect their validity in setting the DRP or otherwise in comparative analysis. The AER has therefore given specific consideration to these bonds in sections A.3.2 and A.3.3 below.

A.3.2 APA Group bond

The AER considers that the characteristics of the APA Group bond—specifically, its BBB credit rating and near 10 year term to maturity—provide a close match to those of the benchmark corporate bond. Additionally, the AER does not agree that the observed yields on the APA Group bond are unusually low with respect to its credit rating or other benchmark characteristics.[522]

That said, the AER maintains its position that credit ratings are not a perfect indicator of the risks involved in investment for the provision of reference services.[523] As noted by Oakvale Capital, bond yields are determined by many factors, including:

- term to maturity
- credit rating
- credit margin
- bond size
- credit wrap features
- comparable bond issuances
- market sentiment
- scarcity and desirability of issuer

519 NTMEU, *Submission to the AER*, June 2011, p. 48.

520 Australia Ratings, *Estimating the debt risk premium*, May 2011, p. 16; NT Gas, *Revised access arrangement submission*, May 2011, p. 59.

521 NT Gas, *Revised access arrangement submission*, May 2011, p. 57.

522 Envestra, *Revised access arrangement information, Attachment 9-7 – Response to AER draft decision on debt risk premium*, March 2011, p. 3.

523 AER, Draft decision, *Envestra Ltd access arrangement proposal for the SA gas network, 1 July 2011 – 30 June 2016*, February 2011, p. 272.

- industry prospects
- financial status of issuer
- abnormal features.[524]

NT Gas argued that the AER did not adequately address the concerns expressed previously by it and its consultant, Synergies, regarding the low liquidity of the APA Group bond and the implication that its yields do not reflect prevailing market conditions. NT Gas stated that the observed yields reported by Bloomberg for the APA Group bond are of low quality, based on the confidence scores assigned by Bloomberg, which implies a risk of estimation error and a reason why Bloomberg does not include this bond in its fair value estimates.[525]

The AER recognises these issues but reiterates its point that observed yields for the APA Group bond are published by two independent sources—Bloomberg and UBS.[526] Moreover, these yield estimates are broadly consistent (differing by up to 14 basis points). This provides the AER with some confidence as to the robustness of the observed yields and represents evidence which is contrary to NT Gas's speculation over inaccuracies.

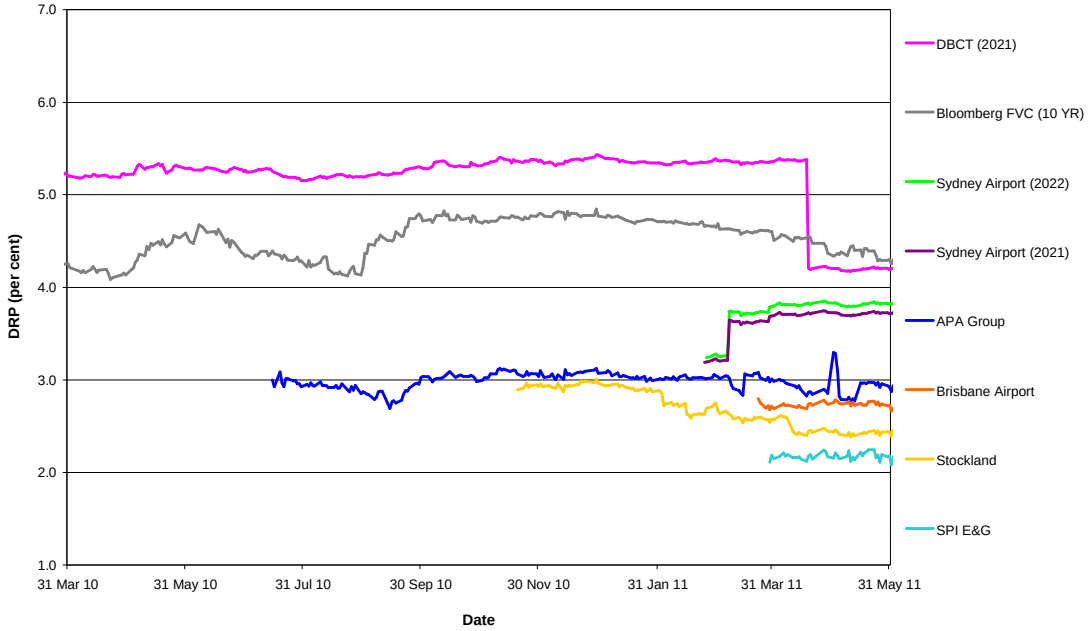
The yield estimates published by Bloomberg and UBS are also broadly consistent with the observed yields at issuance of the APA Group bond in July 2010. Given market conditions since July 2010 have remained relatively stable, the AER considers that in the current circumstances, Bloomberg's BVAL and UBS's published yields represent reasonable estimates of the expected yields on the APA Group bond. The relative consistency of the observed yield estimates in comparison to other comparable bonds, as shown in figure A.9, further supports the reliability of the APA Group bond yields.

524 Oakvale Capital, *Report on the cost of debt during the averaging period: the impact of callable bonds*, January 2011, pp. 2–3.

525 NT Gas, *Revised access arrangement submission*, May 2011, pp. 61–66.

526 The APA Group bond yields observed from Bloomberg reflect the Bloomberg Evaluated Prices (BVAL). The AER considers that while BVAL may not be the most preferred measure of bond yields published by Bloomberg—in comparison to Bloomberg Generic Prices and Bloomberg Composite Market Prices—they still reflect yields published by an experienced third party data service provider based on prevailing market conditions.

Figure A.9 Comparator bond spreads from issuance



Source: Bloomberg, UBS, AER analysis.
Note: Observed yields from both Bloomberg and UBS were available for the APA Group, Brisbane Airport and Stockland bonds. As such, the spreads for these bonds reflect simple averages of the two data sources.

Additionally, the AER rejects NT Gas's inference that the BVAL yields of the APA Group bond are unreliable based on Bloomberg's confidence measure. Critically, the confidence scores provided by Bloomberg are a relative measure. In this context, Bloomberg will not publish observed yields when it considers such estimates do not have a sufficient basis. Accordingly, in the current circumstances the AER considers Bloomberg's BVAL estimates and UBS's published yields, provides a robust measure of observed yields that could be relied upon.[527]

Regarding the bonds included in Bloomberg's fair value estimates, the AER notes, as reported by NT Gas, the APA Group bond has the same BVAL value of the Energy Partnerships bond which is included in the estimation process.[528] Given that the maturity of the APA Group bond is over two years longer than the seven year, BBB rated fair value estimates published by Bloomberg it would appear that Bloomberg may not yet take into account this bond in its fair value estimates.[529] The AER does not consider that, as proposed by NT Gas, the exclusion of the APA Group bond from Bloomberg's seven year, BBB rated fair value estimates necessarily infer any substantive issues with the APA Group bond yields.[530] However, as discussed

527 While the AER currently does not question the reliability of Bloomberg's individual bond yield estimates, as discussed in section A.3.1, it has concerns regarding the methodology used by Bloomberg to derive its fair value estimates (for which the individual bond yields estimates are inputs).

528 NT Gas, *Revised access arrangement submission*, May 2011, p. 64.

529 On 17 May 2011, the maturity of the longest term bond included in Bloomberg's seven year, BBB rated fair value estimate was 20 September 2016. That is, a remaining maturity of approximately five and a half years. This is considerably shorter than the benchmark 10 year term, and further supports the AER's concerns regarding the validity of Bloomberg's BBB rated fair value curve as a measure of prevailing conditions in the market for funds for the AER's notional benchmark service provider.

530 NT Gas, *Revised access arrangement submission*, May 2011, pp. 65–66.

previously, Bloomberg's methodology regarding the derivation of their fair value estimates is proprietary. This limits the AER's ability to assess the reasonableness of the bonds included or excluded from Bloomberg's sample for the purposes of deriving its fair value estimates.

Other than its credit rating and maturity, the AER considers the factors specific to regulated energy networks affecting the APA Group bond to be relevant to setting the benchmark cost of debt. In particular, the default risk of the APA Group's operations reflect its large, fixed investments whose returns are set in part under the regimes administered by the AER under the NGR and NER. The key features of these regimes—in contrast to investment risks in unregulated sectors—include "locked in" asset values and periodic resets of prices with respect to updated sales forecasts. Hence, to the extent that investors consider industry specific characteristics in addition to the assigned credit rating, the relatively lower risk profile of the APA Group bond should be given weight in determining a rate of return that is commensurate with the risks involved in providing reference services.

The AER also rejects the suggestions by CEG and NT Gas that the APA Group bond is an outlier or unrepresentative when compared to bonds included in Bloomberg's fair value estimates or other samples of similarly rated bonds.[531] In isolation, the extent that the yield on the APA Group bond is lower than Bloomberg's seven year estimate or yields of bonds of shorter maturities implies nothing regarding the reasonableness of the observed yield, nor the expected term structure of interest rates.

Similarly, the AER considers the analysis proposed by CEG—that the yield on the APA Group bond was unreasonable based on a parallel downward shift in Bloomberg's fair value estimate until it passes through the APA Group bond yield—to be irrelevant.[532] The analysis is flawed because the AER is not questioning the reliability of Bloomberg's fair value estimates for shorter maturities, where there exists a much greater sample of comparable bonds.

Australia Ratings also stated that it would be difficult to replicate the terms of the APA Group bond, as evidenced by the bond being awarded the KangaNews Australian domestic corporate market deal of the year, and Finance Asia magazine's best local bond deal.[533] The AER infers from these comments that the yield on the APA Group bond is therefore below what would be expected of debt issued by a benchmark service provider under prevailing market conditions. The APA Group bond, however, was negotiated in the period directly following the GFC. The AER considers this period represented a relatively uncertain environment for domestic corporate issuers. Accordingly, to the extent that market conditions have subsequently improved—and evidence presented previously suggests conditions have moved—the AER considers that the difficulties in replicating a similar deal are likely to be overstated. The recent issuance by SP AusNet of a 10 year corporate bond—albeit, with a higher credit rating— and also the recent eight year, BBB rated bond issued by Brisbane Airport supports the AER's conclusions in this context.

---

531 NT Gas, *Revised access arrangement submission*, May 2011, p. 57; CEG, W*ACC estimation, A report for Envestra*, March 2011, p. 37.

532 CEG, *WACC estimation, A report for Envestra*, March 2011, pp. 37–38.

533 Australia Ratings, *Estimating the debt risk premium*, May 2011, p. 24.

A.3.3 Brisbane Airport, Sydney Airport, SP AusNet and Stockland bonds

Since November 2010, SP AusNet and Stockland have issued A– rated, 10 year bonds, and Brisbane Airport has issued BBB rated, eight year bonds. More recently, observed yields for two BBB rated Sydney Airport floating rate notes (maturing in 2021 and 2022) have become available.[534]

The characteristics of all these bonds—that is, their term to maturity and credit rating—are comparable to the APA Group bond, as well as the AER's benchmark bond for the purposes of setting the DRP. Moreover, as SP AusNet owns and operates network gas and electricity assets, its operations resemble those of the AER's notional benchmark service provider.

However, the ownership structure of SP AusNet—specifically, its ownership by the Singaporean Government—differs markedly from the APA Group, and from the AER's benchmark service provider. Additionally, the nature of Stockland's assets and the industry in which it operates differ to that of NT Gas.[535] Brisbane and Sydney Airport's operations also differ from the AER's assumption of the benchmark service provider, although they still reflect the characteristics of a monopoly infrastructure firm.

These issues notwithstanding, and in the circumstances of paucity of data, the AER considers that the yields on the Brisbane Airport, Sydney Airport and SP AusNet bonds all provide relevant points of reference to assess the reasonableness of both Bloomberg's BBB rated fair value estimates and the APA Group bond yield. The AER also considers that the Stockland bond is a relevant reference point, albeit to a lesser extent (given the nature of its operations differ from the AER's notional benchmark service provider). In this regard, the AER considers that many factors are likely to contribute to the divergent bond yields. The magnitude of these differences, however, is significant. These yield comparisons are discussed below.

Brisbane Airport bond

The yield on the Brisbane Airport bond is 191 basis points below the extrapolated 10 year Bloomberg BBB rated fair value estimate. The AER considers that this yield differential is likely to be substantially driven by the bond's shorter term to maturity, and to a lesser extent, its credit rating. That is, the Brisbane Airport bond has a remaining term to maturity of approximately eight years (as distinct from the extrapolated, 10 year estimate for Bloomberg), and a credit rating of BBB (as distinct from the Bloomberg compilation of all BBB–, BBB and BBB+ rated bonds).

The magnitude of this difference, however, is unexpected. Given the observed yields of other comparable bonds (as highlighted throughout this section) support the reasonableness of the Brisbane Airport bond yields, the magnitude of the difference suggests that either Bloomberg's BBB rated fair value estimates are not representative

534 These bonds were originally issued in December 2006. Recently, observed yields have been published more frequently, including from 24 February 2011 onwards.

535 Oakvale has demonstrated that the observed yields on infrastructure bonds are typically higher than the observed yields on the otherwise comparable corporate debt of well known Australian corporations. Oakvale Capital, *Report on the cost of debt during the averaging period: the impact of callable bonds*, January 2011, pp. 17–19.

of longer term bond yields, or that factors other than term to maturity and credit ratings are evident.

The small yield differential between the Brisbane Airport and APA Group bonds (28 basis points) is reasonably expected, given their identical credit ratings and minimal difference in their terms to maturity.

Sydney Airport bonds

The yield on the two Sydney Airport floating rate notes (converted to fixed rate equivalents) are 98 and 85 basis points below the extrapolated 10 year Bloomberg BBB rated fair value estimate.

Given the observed yields of other comparable bonds support the reasonableness of the Sydney Airport bond yields, the direction of this difference is unexpected. That is, the Sydney Airport bonds have remaining terms to maturity of approximately six and 16 months beyond the extrapolated, 10 year estimate for Bloomberg. All things being equal, a longer term to maturity is typically associated with a higher DRP. This suggests that either Bloomberg's BBB rated fair value estimates are not representative of longer term bond yields or that factors other than term to maturity and credit ratings are evident.[536]

The higher yield of the Sydney Airport bonds in comparison to the APA Group bond (65 and 78 basis points) is reasonably expected, given their identical credit ratings but longer term to maturity of the Sydney Airport bonds.

Similarly, the higher yield on the Sydney Airport bonds in comparison to the Brisbane Airport bond—approximately 93 and 106 basis points respectively—is expected given their identical credit ratings but longer term to maturity of the Sydney Airport bonds.

Stockland bond

The yield on the Stockland bond is 203 basis points below the extrapolated 10 year Bloomberg BBB rated fair value estimate. The AER considers that this yield differential is likely to be substantially driven by the bond's higher credit rating (as the term to maturity for the Stockland bond closely matches the 10 year term of the extrapolated Bloomberg BBB rated fair value estimate). That is, the Stockland bond has a credit rating of A– (as distinct from the Bloomberg compilation of all BBB–, BBB and BBB+ rated bonds).

The magnitude of this difference, however, is unexpected. Given the observed yields of other comparable bonds support the reasonableness of the Stockland bond yields, the magnitude of the difference suggests that either Bloomberg's BBB rated fair value estimates are not representative of longer term bond yields, or that factors other than term to maturity and credit ratings are evident.

536 APT Allgas recently stated that, similar to the DBCT bonds, the credit wrapper for the Sydney Airport bonds also collapsed during the GFC. In contrast to the DBCT bonds, however, the observed yields of the Sydney Airport bonds are consistent with other comparable bonds. The AER considers that this likely indicates that investor concerns regarding the collapse of the Sydney Airport bond's credit wrapper have since subsided. APT Allgas, *Response to AER's preliminary view on DRP*, June 2011, pp. 26–27.

The lower, but consistent yield of the Stockland bond in comparison to the APA Group bond (40 basis points) is reasonably expected, given the counterbalancing effects of the different credit ratings and terms to maturity. For example, all things being equal, Stockland's higher credit rating should be reflected in a lower yield than the APA Group bond. In contrast, Stockland's longer term should be reflected in a higher yield. As the yield on the Stockland bond is lower than the APA Group, it would appear that the credit rating (or some other factor) is the net driver for the Stockland bond yield being lower than the APA Group bond yield.

SP AusNet bond

The yield on the SP AusNet bond is 239 basis points below the extrapolated 10 year Bloomberg BBB rated fair value estimate. The AER considers that this yield differential is likely to be substantially driven by the bond's higher credit rating (as the term to maturity for the SP AusNet bond closely matches the 10 year term of the extrapolated Bloomberg BBB rated fair value estimate). That is, the SP AusNet bond has a credit rating of A– (as distinct from the Bloomberg compilation of all BBB–, BBB and BBB+ rated bonds).

The magnitude of this difference, however, is unexpected. Given the observed yields of other comparable bonds support the reasonableness of the SP AusNet bond yields, the magnitude of the difference suggests that either Bloomberg's BBB rated fair value estimates are not representative of longer term bond yields, or that factors other than term to maturity and credit ratings are evident.[537]

The lower yield of the SP AusNet bond in comparison to the APA Group bond (77 basis points) is reasonably expected, given the counterbalancing effects of the different credit ratings and terms to maturity. For example, all things being equal, SP AusNet's higher credit rating should be reflected in a lower yield than the APA Group bond. In contrast, SP AusNet's longer term should be reflected in a higher yield. As the yield on the SP AusNet bond is lower than the APA Group, it would appear that the credit rating (or some other factor) is the net driver for the SP AusNet bond yield being lower than the APA Group bond yield.

Overall, while the APA Group, Brisbane Airport, SP AusNet, Stockland and Sydney Airport (two issues) bonds provide only six points of reference, they all consistently indicate that the extrapolated Bloomberg fair value estimates may not be representative of longer dated, lower rated bonds. In particular, the observed yields of the APA Group, Brisbane Airport, SP AusNet, and Sydney Airport bonds support the AER's consideration that Bloomberg's BBB rated fair value curve may not be representative of prevailing conditions in the market for funds for the AER's notional benchmark service provider.

Further, the observed yields of the Brisbane Airport, SP AusNet, Stockland and Sydney Airport bonds support the reasonableness of the observed yields on the APA Group bond.

---

537 The SP AusNet bond includes a resettable coupon feature that adjusts the yield upwards if a credit downgrade event occurs. As noted by Oakvale Capital, however, the likely impact on observed yields of resettable coupons is expected to be small, particularly when such a feature is unlikely to be required (as is the case of the SP AusNet bond). Oakvale Capital, *Report on the cost of debt during the averaging period: the impact of callable bonds*, January 2011, pp. 8–9.

A.3.4 Dalrymple Bay Coal Terminal (DBCT) bond

The AER has previously expressed concerns over the reliability of the DBCT bonds in comparative analysis, most recently in its draft decision for NT Gas. Notably, in its draft decision the AER considered that the observed yields on the DBCT bonds (in particular, the DBCT bond maturing in June 2021) were driven primarily by factors other than its credit rating.[538]

Since the draft decision, however, the trading margins applied to the DBCT bonds by UBS have fallen significantly.[539] In particular, the trading margin on the DBCT bond maturing in 2021 has fallen by 110 basis points. Subsequently, the observed yields on the DBCT bond are now more consistent with other comparable bonds. The AER considers that one possible reason for this change is that greater certainty may now exist surrounding the issuer and the future status of the issue (following previous restructuring and ownership changes).[540]

The AER also considers that the significant reduction to the trading margin supports its previous decisions to exclude the DBCT bonds from its comparative analysis. That is, the magnitude of the change strongly suggests that the observed yields on the DBCT bonds were driven primarily by factors other than its credit rating.

Given the recent nature of the change, however, the AER considers that a longer period is required to properly assess the robustness of the recent observations of the DBCT bond yields. On this basis, the AER remains cautious of the reliability of the observed DBCT bond yields.

Given there remains uncertainty regarding the DBCT debt, the AER considers that relying on the DBCT bond would price default risk above that reasonably expected in the AER's notional benchmark service provider. This notwithstanding, default risk is implicitly priced in Bloomberg's fair value estimates, as well in the APA Group bond yield, for which the AER has used to set the benchmark DRP.

A.3.5 AER's method for setting the DRP

The AER considers that the evidence in support of the observed yields of the APA Group bond has strengthened significantly since the draft decision. As discussed above, observed yields for an additional four bonds with similar terms to maturity and credit ratings as the benchmark corporate bond have now been available for a period of months. This has facilitated a more robust consideration of their yield estimates than was possible for the draft decision. These observed yields all support the AER's consideration that the observed yields of the APA Group bond are more reflective of prevailing conditions in the market for funds for the AER's notional benchmark service provider than Bloomberg's (extrapolated) 10 year, BBB fair value estimates. Further, as figure A.3 demonstrates, the empirical evidence also suggests that

538 AER, *Draft decision*, April 2011, p. 207.

539 The trading margin is the spread above the swap rate that equates the yield on a floating rate bond to its fixed rate equivalent.

540 DBCT Finance Pty Ltd has recently proposed US$600 million of senior secured medium term notes, due in 2020 and 2023 respectively, for which Standard and Poor's have assigned a BBB+ credit rating. As this debt is denominated in US dollars, however, the AER is limited in its ability to make any reasonable inferences from this issuance.

Bloomberg's (extrapolated) 10 year, BBB rated fair value estimate is likely to overstate the costs of debt, particularly for regulated network service providers. On this basis, the AER does not consider it appropriate to set the DRP based solely on the (extrapolated) Bloomberg fair value estimate. The AER considers that greater reliance could reasonably be placed on the APA Group bond to determine the DRP. However, in the current circumstances, the AER considers that some uncertainty exists regarding the appropriateness of setting the DRP based upon a single bond yield. Accordingly, the AER has exercised its judgment to determine the proportion to apply to both data sources.

The proportion to apply to each data source should reflect their relative suitability for the purposes of establishing a benchmark DRP. The AER considered increasing the emphasis on the APA Group bond relative to the Bloomberg fair value curve, in view of the increased support for the APA Group bond since the draft decision. However, after careful evaluation, the AER considers there are currently insufficient grounds to justify departure from the position in the draft decision. The AER considers that a DRP based equally on the observed yields of the APA Group bond and Bloomberg's fair value estimates would satisfy the requirements of the NGR.[541]

In contrast, CEG stated that relying so heavily upon a small and selective sample of bonds—that is, bonds with BBB+ credit ratings (or similar) and remaining maturities in excess of five years—is likely to lead the AER into error.[542] CEG added that the AER's methodology placed extreme weight on bonds from two issuers above the guidance provided by a wider population of 49 issuers, and that this approach is unreasonable.[543] The NTMEU, however, considered that the AER would be in error by placing any reliance on Bloomberg's fair value estimates, suggesting that the APA bond issue is more likely to be efficient, even though other bond issues by similar firms have achieved lower DRPs.[544]

The AER acknowledges the concerns of CEG, however, having no regard to the available longer term data (as discussed above) is equally likely to lead to error in setting the benchmark DRP, particularly with respect to section 24(6) of the NGL. That is, the wider population (from which Bloomberg uses to determine its fair value estimates) is dominated by bonds with term to maturities significantly less than the 10 year benchmark considered by the AER.[545] Conversely, regard to the same data for longer dated bonds does not lead the AER to conclude that its benchmark should be set at a level equal to (or below) the spreads of the APA Group bond.

Further, the AER acknowledges Australia Ratings' statement that weighting the DRP with selected individual bonds could distort the benchmark DRP because of the idiosyncratic risk factors of those bonds. The AER, however, considers that as the

---

541 This decision contrasts from the most recent final decision of the AER. That decision—for the Victorian electricity distribution businesses—determined the DRP based on a 75 per cent weighting to estimates from Bloomberg and a 25 per cent weighting to estimates from the APA Group bond. The AER also notes that the Victorian final decision is currently the subject of a merits review before the Australian Competition Tribunal.

542 CEG, *WACC estimation, A report for Envestra*, March 2011, p. 34.

543 CEG, *WACC estimation, A report for Envestra*, March 2011, p. 2.

544 NTMEU, *Submission to the AER*, June 2011, p. 48.

545 See figure A.5.

operations of the APA Group bond reasonably reflect those of the benchmark service provider, any additional risk incorporated into the DRP would also reasonably reflect the risks faced by gas network service providers.

As part of its review, the AER also requested and received actual cost of debt information from the APA Group of which NT Gas is included.[546] The AER considers that this information supports that its estimate of the DRP provides a reasonable opportunity for NT Gas to recover at least its efficient costs.[547] As such, the AER does not accept that the DRP established by reference to the APA Group bond removes any incentive for efficient financing by NT Gas, or represents an unreasonably low benchmark.[548]

NT Gas objected to the AER's references to decisions recently published by IPART and the Economic Regulation Authority's (ERA) with indicative debt margins of around 150 basis points and 170 basis points respectively below NT Gas's proposal.[549] Specifically, NT Gas stated that their departure from Bloomberg estimates is inappropriate since it implies these organisations are "better placed to estimate the cost of debt for the efficient benchmark firm in the prevailing market environment."[550] The AER considers this may be true considering Bloomberg's fair value estimates are not developed for the purposes of setting efficient benchmarks for regulated monopoly businesses. The AER also interprets these decisions as a reflection that the ERA and IPART, like the AER, consider that placing sole reliance on Bloomberg estimates is producing DRP values which are significantly above the efficient cost of debt for service providers under current market conditions.

A.3.6 Extrapolation of Bloomberg fair value estimates

The AER's draft decision rejected NT Gas's proposed approach to linearly extrapolate Bloomberg's seven year fair value estimates to a 10 year term. The AER determined that extrapolation based on the spread between Bloomberg's seven and 10 year, AAA rated fair value estimates provides a better estimate of the 10 year, BBB rated yields.

NT Gas did not consider the AER's approach was appropriate, yet adopted it in its revised access arrangement proposal.[551]

A.3.7 Conclusion

The AER considers that the DRP proposed by NT Gas is excessive and not commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services.[552]

---

546 AER, *Draft decision*, April 2011, p. 83.

547 NGL, s. 24(2).

548 NT Gas, *Revised access arrangement submission*, May 2011, p. 61.

549 IPART, *Developing the approach to estimating the debt margin, Other industries, Final decision* April 2011; ERA, *Draft decision on proposed revisions to the access arrangement for the Dampier to Bunbury natural gas pipeline*, March 2011, p. 169.

550 NT Gas, *Revised access arrangement submission*, May 2011, p. 67.

551 NT Gas, *Revised access arrangement submission*, May 2011, p. 69.

552 NGR, r. 87(1).

Moreover, based on the above analysis, the AER considers that greater reliance could reasonably be placed on the APA Group bond to determine the DRP. However, in the current circumstances, the AER considers that some uncertainty exists regarding the appropriateness of setting the DRP based upon a single bond yield. Accordingly, the AER has exercised its judgment to determine the proportion to apply to both data sources. After careful evaluation, the AER considers there are currently insufficient grounds to justify departure from the position in the draft decision. The AER considers that a DRP based equally on the observed yields of the APA Group bond and Bloomberg's fair value estimates would satisfy the requirements of the NGR. This results in a DRP of 3.80 per cent.[553]

[553] Based on a 20 day averaging period ending 1 April 2011.

B Real cost escalators

In the draft decision, the AER did not accept aspects of NT Gas's proposed forecast real cost escalators. In particular, the AER did not accept NT Gas's proposed real labour cost escalators, on the basis of NT Gas's:

- forecast methodology, which was not sufficiently robust for the application of labour cost forecasting
- use of the average weekly ordinary time earnings (AWOTE) index as the base for labour cost forecasts
- non-incorporation of productivity effects, resulting in forecasts that do not account for the difference between wage forecasts and labour cost forecasts.[554]

NT Gas did not accept the AER's amended real cost escalators. In its revised access arrangement proposal, NT Gas has maintained its real cost escalation forecasts as submitted in December 2010.[555]

The AER does not accept NT Gas's proposed labour cost escalators,[556] as they are neither forecast on a reasonable basis, nor the best forecasts possible in the circumstances.[557] As a consequence, the real labour cost escalator forecasts do not contribute to forecasts of opex that are consistent with r. 91 of the NGR.

B.1 Revised access arrangement proposal

NT Gas did not incorporate a number of the draft decision amendments to real cost escalators applying to opex and capex. Specifically, NT Gas did not accept the AER's:

- analysis of NT Gas's and DAE's forecast methodologies
- use of labour price index (LPI) as the appropriate base on which to base labour cost forecasts
- application of productivity adjustments to transform wage forecasts to labour cost forecasts
- consideration of the relevant industrial developments in the Northern Territory (NT) as part of DAE's forecasts
- application of separate utilities and construction sector labour forecasts.[558]

554 AER, *Draft Decision*, April 2011, p.117.

555 NT Gas, *Revised access arrangement submission*, May 2011, p. 94.

556 NT Gas, *Revised access arrangement submission*, May 2011, pp. 93–94.

557 NGR, r. 74.

558 NT Gas, *Revised access arrangement submission*, May 2011, pp. 93–103.

B.1.1 Forecast methodology

In its revised access arrangement proposal, NT Gas did not accept the draft decision that NT Gas's forecast methodology was not sufficiently robust.[559] NT Gas maintained its forecast escalators from its access arrangement proposal and submitted that:

- it compared average national AWOTE growth in the utilities sector from 2005–10 (4.75 per cent) against salary growth rates in the same period (4.34 per cent)
- as these two figures are 'similar', NT Gas forecast 1.5 per cent real growth per annum over the access arrangement period (4 per cent nominal growth minus 2.5 per cent CPI)
- it selected the 'conservative' figure of 4 per cent per annum based on a March-quarter-2011 NT Economic brief ,[560]indicating easing population and employment growth in 'the coming five years'.[561]

Further, NT Gas submitted that the equations and parameters underlying Deloitte DAE's Australian Economic Model (AEM) are not publicly available and as a result neither NT Gas nor the AER has had the opportunity to assess these inputs.[562]

B.1.2 Choice of wage index

NT Gas did not accept the draft decision that LPI, rather than AWOTE, is the correct measure on which to base forecasts of labour cost escalation.[563] Specifically, NT Gas considered:

- AWOTE is the correct index on which to base labour cost forecasts
- it was inappropriate for the AER to 'substitute' DAE's forecasts in place of NT Gas's forecasts on the basis that LPI, rather than AWOTE, is the appropriate index on which to base forecasts of labour cost escalation
- as DAE is forced to impute LPI data for the NT utilities sector due to the unavailability of data, it is not an appropriate basis on which to reject NT Gas's AWOTE based forecast cost escalators.[564]

B.1.3 Productivity adjustments

NT Gas did not accept the AER's application of productivity adjustments to transform wage forecasts into labour cost forecasts. [565] NT Gas proposed that:

559 NT Gas, *Revised access arrangement submission*, May 2011, pp. 94–95.

560 NT Government, *DAE Economic Brief- March quarter 2011*, April 2011.

561 NT Gas, *Revised access arrangement submission*, May 2011, pp. 94-95.

562 NT Gas, *Revised access arrangement submission*, May 2011, p. 95.

563 NT Gas, *Revised access arrangement submission*, May 2011, pp. 96-98.

564 NT Gas, *Revised access arrangement submission*, May 2011, pp. 96-98.

565 NT Gas, *Revised access arrangement submission*, May 2011, pp. 98-100.

- the application of productivity adjustments led to 'triple counting' of productivity effects included in NT Gas's forecasts
- *ex ante* productivity adjustments were inconsistent with incentive regulation
- the AER had applied productivity unadjusted real labour cost escalators in decisions prior to the Queensland and South Australian gas distribution access arrangement reviews
- DAE provided insufficient detail on the calculation of its productivity adjustments.[566]

B.1.4 Relevant industrial developments

NT Gas submitted that the AER's forecasts did not take into account economic information specific to the NT and relevant to forecasting labour cost escalation.[567]

B.1.5 Disaggregation of labour cost escalators

NT Gas did not accept the AER's disaggregation of labour cost escalators into utilities, construction and general labour, on the basis that NT Gas had derived a composite labour cost escalator based on its salary growth in the previous five years.[568]

B.2 Submissions

The Northern Territory Major Energy users (NTMEU) submitted that:

- The AER has consistently applied (Deloitte) Access Economics's forecasts based on the LPI
- the AER's decision to apply specific productivity amendments is consistent with allowing NT Gas to recover efficient costs, and therefore is consistent with the revenue and pricing principles
- consumers should receive the same benefits of national productivity improvements that other labour employers receive.[569]

B.3 AER considerations

The AER maintains its draft decision position regarding each of these elements, which are set out in detail below. Broadly, the AER considers:

- NT Gas's forecast methodology is not sufficiently robust to adequately reflect the range of information on important economic influences and labour cost determinants

566 NT Gas, *Revised access arrangement submission*, May 2011, pp. 98-100.

567 NT Gas, *Revised access arrangement submission*, May 2011, pp. 101-102.

568 NT Gas, *Revised access arrangement submission*, May 2011, p. 103.

569 NTMEU, *Submission*, June 2011, pp. 19–22.

- the LPI, and not AWOTE, is the appropriate measure of wage growth on which to base forecasts of labour cost escalation

- NT Gas's labour cost forecasts do not account for the effects of productivity, that transform wage forecasts into forecasts of labour costs

- NT Gas has not adequately considered the differing cost pressures on different sectors of labour that make up the labour pool from which NT Gas draws labour.

B.3.1 Forecast methodology

The AER maintains its consideration in its draft decision that NT Gas's forecast methodology used to derive its labour cost escalators is not sufficiently robust to produce forecasts that are consistent with r. 74 of the NGR.

As set out in the draft decision, the AER does not accept NT Gas's forecast methodology, as it contributes to forecasts that are neither made on a reasonable basis, nor the best forecast possible in the circumstances.[570] In particular, the AER considers:

- the growth in wages over time is subject to complex domestic and international economic and industrial developments. It is therefore not appropriate to conclude, with limited and unstructured consideration of other macroeconomic and industrial factors, that the average wage growth in the past five years will be reflective of the next five years

- in light of these complexities, forecasts of labour cost growth should be based on established macroeconomic models that account for a broader view of economic progression than extrapolating wage trends. The AER considers that such models, while subject to the quality of input data and assumptions, generally provide a rigorous and more structured treatment of the necessarily wide range of relevant economic information

- judgement is important in forecasting real cost escalators, but drawing the unsubstantiated assumption that labour cost growth in the past five years will reflect the next five years in a particular sector in a particular area relies *too much* on judgement, with very little structured analysis

- the AEM is an established macroeconomic forecasting model that has been widely used in forecasting applications. The AER recognises that the model relies on some input from the expert judgement of DAE, but is primarily driven by observed and tested macroeconomic identities and parameters

Also, during the 2010 Queensland and South Australian electricity distribution determination, the AER was provided a commercial-in-confidence copy of AEM version 6.0 model documentation.[571] While the parameter values have changed over time, the structure and application of the model is current. The AER considers that the information supporting DAE's equations, parameters and variables is well

570 NGR r. 74.

571 Access Economics, *AEM model documentation (Version 6.0)*, July 2007 (confidential).

documented and robust is satisfactory. The AER also accepts that the components of DAE's model have been correctly applied, and that results have been correctly interpreted.

The AER maintains its draft decision, and does not accept NT Gas's proposed labour cost escalator forecasts. This is because they are based on a forecast methodology that is neither reasonable, nor the best forecast possible in the circumstances, as required under r. 74 of the NGR.

B.3.2 Choice of index measure

The AER maintains its draft decision that labour cost forecasts should be based on the LPI index of wages growth, rather than the AWOTE index.

The AER's reasoning on this issue has been set out fully in the draft decision,[572] as well as the AER's recent final decision on Envestra's South Australian and Queensland gas distribution businesses.[573] Further, the AER has applied real labour cost escalation based on the LPI in electricity decisions.[574] Regarding NT Gas's revised access arrangement proposal and the correct index on which to base real labour cost growth forecasts, the AER considers:

- NT Gas has not sufficiently addressed the exaggerated volatility that the AER considers unrealistic as a base for forecasting state-sectoral real labour cost escalators

- to the extent that NT Gas's forecasts rely on the AWOTE index, these forecasts are not made on a reasonable basis, and are not the best possible in the circumstances.

AER's decision process

The AER does not accept NT Gas's revised access arrangement proposal that the AER 'substituted' DAE's forecasts for NT Gas's forecasts on the basis of the choice of index measure. The AER did not accept NT Gas's forecast of real labour cost escalation on the grounds that NT Gas's forecasts:

- were based on a methodology that was not sufficiently robust

- were based on the AWOTE index of wage growth, which the AER considers is an unrealistically volatile base for forecasting state-sectoral wage growth

- did not include the productivity adjustments that transform wage forecasts to labour cost forecasts.

The AER did not 'substitute' the forecasts based on preference. The AER considered that NT Gas's revised real labour cost escalator forecasts had not been arrived at on a reasonable basis and did not represent the best possible forecasts in the circumstances,

572 AER, *Draft Decision*, April 2011, p.117.

573 For example: AER, *Final decision for the Envestra's SA network*, June 2011, pp. 222–223.

574 For example, AER, *Final decision for the Victorian DNSPs, Appendices*, October 2010, pp. 245–248; and AER, *Final decision for the Queensland DNSPs*, May 2010, p. 409.

and therefore rejected these forecasts.[575] The AER then considered that the forecasts produced by DAE were made on a reasonable basis, and represented the best forecasts possible in the circumstances, and consequently applied these escalators.

Data Availability

The AER considers DAE's method for imputing LPI series will produce labour cost forecasts that are made on a reasonable basis, and are the best forecasts possible in the circumstances. DAE identified in its NT report, and in previous reports to the AER, that its state-sectoral LPI series are imputed using national and wider state trends.[576] This is due to the small sample size in the NT utilities; construction; and admin support services sectors. This process is detailed in DAE's publicly available initial report on Queensland and South Australian labour cost forecasts for the AER, published in February 2011.[577]

The AER accepts that the best possible forecast would be based on actual observed LPI for the individual NT sectors. However, neither this data, nor state sectoral AWOTE for the individual NT sectors is published by the ABS. As such, the AER considers DAE's method of varying known LPI data in line with relative AWOTE variations will limit the unrealistic volatility of an AWOTE based index, and produce the best forecast possible in the circumstances.

B.3.3 Productivity adjustments

The AER maintains its draft decision position that specific productivity adjustments should be applied to wage forecasts, in order to produce forecasts of labour costs.[578]

B.3.3.1 'Triple counting' of productivity effects

It is widely accepted that productivity is a key driver of movements in relative wages.[579] Professor Jeff Borland, whose report on labour cost escalators for Envestra Limited is referenced by NT Gas,[580] implicitly accepted the necessity of a productivity adjustment to transform wages to labour costs.[581] DAE accounts for the effect of productivity in its wage forecasting model by assuming that more productive workers will be compensated with higher wages.[582] It subsequently adjusts for productivity effects on the cost of labour per unit of output by applying post-forecast adjustments. This reflects the assumption that a more productive workforce will produce the same unit of output of labour at a lower cost.

In effect:

575 AER, *Draft decision*, April 2011, p. 117.

576 Deloitte Access Economics, *Northern Territory LPI Growth,* April 2011, p. 3; and Access Economics, *Forecast growth in labour costs (Qld & SA)*, November 2010, p. 108.

577 Access Economics, *Forecast growth in labour costs (Qld & SA)*, November 2010, p. 73.

578 AER, *Draft decision*, April 2011, p. 117.

579 For example; Hicks

580 NT Gas, *Revised access arrangement submission*, May 2011, p. 100.

581 Professor Jeff Borland, *Labour cost escalation report for Envestra Limited*, March 2011, p. 6.

582 Access Economics, *Forecast growth in labour costs (Qld & SA)*, November 2010, p. 103.

- positive productivity growth will typically result in higher wages for individual workers. However, there will also be an offsetting reduction in the labour costs per unit of output, as less labour is needed to produce a given level of output.

- negative productivity growth will tend to slow wage growth, but will also lead to a corresponding increase in unit labour costs as the labour requirement to produce a given level of output increases.

NT Gas proposed that the specific productivity adjustment to LPI results in the AER having "triple counted" productivity effects, due to the following:

1 the use of LPI rather than AWOTE which does not capture the effects of compositional productivity

2 adjusting the LPI for forecast changes in productivity (DAE's specific productivity adjustment)

3 the opex benchmarks already directly incorporated productivity improvements.[583]

The AER does not accept NT Gas's revised access arrangement proposal for the reasons set out below.

The AER accepted in its draft decision that the LPI does not capture compositional productivity effects, which account for some difference between the LPI and AWOTE.[584] However, the AER considers NT Gas, and the consultants it refers to, have overstated the effects of compositional productivity and therefore any adverse effects are unlikely to be material. As identified by DAE, compositional productivity is only one of the many compositional effects that can lead to unrealistically exaggerated volatility.[585] These include, amongst other things; gender distribution, pace of retirement and the degree of outsourcing.[586]

The specific productivity adjustment (adjustment 2) is necessary to forecast labour cost escalation, because NT Gas's required units of labour are a function of the work NT Gas undertakes. The AER considers it reasonable to assume that NT Gas targets a particular level of labour output, as opposed to choosing a desired number of employees, and plans work output based on that level. The national gas objective and, therefore, the guiding principle of gas regulation, is to promote the efficient investment in, and operation of natural gas services.[587] The AER considers this supports an assumption that NT Gas's business planning would be guided by the efficient output provision of services, and therefore the efficient output levels of opex and capex, which NT Gas would then employ labour to produce. This in turn is consistent with escalating real labour cost per unit of output, as opposed to real wages. In this framework, failure to include the specific productivity adjustments will

583 NT Gas, *Revised access arrangement submission*, May 2011, p. 103.

584 AER, *Draft decision*, April 2011, p. 116.

585 Deloitte Access Economics, *Response to Professor Borland*, April 2011, p. 6.

586 Deloitte Access Economics, *Response to Professor Borland*, April 2011, p. 2.

587 NGL s. 23.

produce a forecast that is neither made on a reasonable basis, nor the best forecast possible in the circumstances.[588]

NT Gas's 'productivity adjustments' within its opex forecasts (adjustment 3) reflect the reduction in the overall required level of overhead expenditure and therefore overall opex, due to the centralisation of some support functions. It is therefore consistent with these forecast levels of required opex to forecast the labour costs required to meet that level of output. Therefore, the AER considers forecasts of real labour cost escalation based on productivity adjusted LPI are both reasonable, and the best forecasts possible in the circumstances.[589]

B.3.3.2 Consistency with incentive regulation

The AER does not accept NT Gas's revised access arrangement proposal that *ex ante* productivity adjustments are inconsistent with the incentive regulation regime established under the NGR.[590]

In general terms, the incentive regulation regime requires the AER to forecast the efficient levels of necessary expenditure that a service provider will incur over an access arrangement period. This allows the service provider to retain any gains from under-expenditure during the period and 'reveals' the efficient costs of providing the service. Then, at the time of the next access arrangement review, the AER uses actual expenditure data to incorporate those observed efficiency gains into its forecasts; transmitting the benefits of efficiency gains to end users.

The AER applies labour cost escalators based on real growth in labour costs, as opposed to wages, in order to recognise that service providers employ labour forces to produce planned levels of output. This requires an adjustment to address the reality that a more productive labour force reduces the quantity of labour required to produce a particular level of output. This forms the most efficient forecast of the labour costs NT Gas is expected to face over the five year period. If NT Gas's labour force outperforms forecast productivity, it will retain the benefits of those improvements. The AER considers this is entirely consistent with the regime of incentive regulation.

B.3.3.3 Previous AER decisions

The AER acknowledges that it has applied labour cost escalators based on productivity unadjusted LPI in decisions prior to the 2011–2016 Queensland and South Australian gas distribution access arrangement reviews. Regulatory control periods (and applicable distribution determinations) are not concurrent across jurisdictions and do not have uniform commencement dates. As a result, any change in the AER's regulatory approach necessarily results in some inconsistency across jurisdictions for a finite period. The AER considers this should not restrict the AER from updating its position in line with updated analysis. For the reasons set out in this chapter and in the draft decision, the AER considers that productivity adjustments are

588 NGR r. 74.

589 NGR r. 74.

590 NT Gas, *Revised access arrangement submission*, May 2011, pp. 99–100.

necessary to produce forecasts of labour costs that are made on a reasonable basis, and the best forecasts possible in the circumstances.[591]

B.3.3.4 DAE's productivity forecasting

The AER engaged DAE to provide a brief report to accompany its forecasts of NT labour cost escalation for the draft decision. This report did not include methodological details about DAE's productivity forecasts, as these were available in the (then recent) publicly available November 2010 report on real cost escalators in South Australia and Queensland.[592] As NT Gas has referred to older Access Economics reports, which also include this information on productivity forecasting, the AER considers the information was available for NT Gas's assessment. The AER can confirm, based on model documentation,[593] that productivity forecasts are an output derived from the AEM model.

B.3.3.5 Updated forecasts

For the reasons discussed above, the AER considers DAE's labour cost forecasts based on productivity adjusted LPI are made on a reasonable basis, and are the best forecasts possible in the circumstances.[594] Table B.1 sets out the updated forecast escalators prepared by DAE, as well as the productivity unadjusted wage forecasts to demonstrate the effects of productivity adjustments.

Table B.1 The AER's conclusion on NT Gas real input cost escalators by sector (per cent)

	2010–11 (opex roll–forward)	2011–12	2012–13	2013–14	2014–15	2015–16
Productivity adjusted (labour costs)						
EGW labour	4.0	1.3	0.9	0.6	-0.4	-1.3
General labour	2.7	0.8	0.0	0.0	-0.8	-1.5
Construction labour (capex only)	-	1.9	1.8	1.6	0.1	-0.7
Productivity unadjusted (wages)						
EGW labour	2.3	2.1	1.8	1.9	1.4	0.7
General labour	2.0	1.3	0.9	1.3	1.0	0.6
Construction labour (capex only)	-	3.1	3.1	2.6	2.1	1.2

Source: Deloitte Access Economics, *AER labour cost forecasts for the Northern Territory*, June 2011, p. 7.

591 NGR r. 74(2)

592 Access Economics, *Forecast growth in labour costs (Qld & SA)*, November 2010, p. 105–107.

593 Access Economics, *AEM model documentation (Version 6.0)*, July 2007 (confidential).

594 NGR, r. 74.

B.3.4 Relevant industrial developments

The AER considers that DAE's analysis in its report for the AER is consistent with the economic brief referenced by NT Gas.

The 'DAE economic brief', cited by NT Gas, was actually prepared and written by the NT Government using forecast data prepared by DAE.[595] The AER considers no quantitative aspect of the report, or quoted analysis from DAE, is inconsistent with its report prepared for the AER. In particular, NT Government has cited DAE's consistent assertion that NT growth is project based, and that a number of prospective large projects could drive growth. This is consistent with DAE's analysis in its initial report on labour cost growth in the NT.[596] DAE has further forecast gains in labour productivity over the access arrangement period, which is consistent with a growing economy driven by capital expansion and diminishing labour force costs.

B.3.5 Disaggregation of labour cost escalators

The AER considers that energy businesses are made up of a diverse labour pool, drawing workers from various sectors. These sectors face distinct and varying cost pressures, and labour costs for workers in these sectors may be expected to grow at differing rates. Accordingly, the AER considers it is appropriate to disaggregate NT Gas's labour force into the three sectors based on application rates derived from Envestra Queensland, as set out in the draft decision, and repeated in table B.2. NT Gas did not provide alternative application rates in response to the draft decision. As a result, the AER does not have information specific to NT Gas on which to derive updated application rates. In those circumstances, the AER considers the rates based on a comparable gas business are made on a reasonable basis, and the best forecasts possible in the circumstances.[597] Similar disaggregation of labour has been applied in the AER's recent gas and electricity decisions.[598]

Table B.2 The AER's conclusion on NT Gas real input cost escalator application rates as a proportion of total labour costs (per cent)

	Opex	Capex
EGW labour	0.82	0.10
General labour	0.18	0.02
Construction labour	0	0.88

Source: AER, *Draft decision*, April 2011, p. 114.

B.4 Conclusion

The AER does not approve the real cost escalator forecasts proposed by NT Gas in its revised access arrangement proposal.

595 Deloitte Access Economics, *E-mail to the AER*, 15 June 2011.

596 Deloitte Access Economics, *Northern Territory LPI Growth*, April 2011, p. 3

597 NGR, r. 74.

598 For example; AER, *Final decision for Envestra's Queensland network*, June 2011, p. 218; AER, *Final decision for the Victorian electricity DNSPs- appendices*, October 2010, p. 244.

The AER considers that NT Gas's forecasts have not been made on a reasonable basis, nor are they the best forecasts possible in the circumstances. Therefore, the forecasts do not comply with r. 74 of the NGR. Further, the AER considers that NT Gas's proposed escalators do not contribute to forecasts of opex that are consistent with r. 91(1) of the NGR, or capex with r. 79(1) of the NGR. The AER's proposed revision to real cost escalator forecasts is set out in table B.3.

Table B.3 AER's conclusion on NT Gas aggregated real labour cost escalators (per cent)

	2010–11 (opex roll-forward)	2011–12	2012–13	2013–14	2014–15	2015–16
Opex labour	3.8	1.2	0.7	0.5	-0.5	-1.3
Capex labour	-	1.8	1.7	1.5	0.0	-0.8

Source: AER analysis.
Note: These escalators have been calculated by summing the *pro-rata* escalation rates for each year, using the productivity adjusted labour cost forecasts in table B.1 and the weightings in table B.2.

The AER considers these should be applied, based on NT Gas's labour-materials cost breakdown, as accepted by the AER in the draft decision.

C Non-tariffs—Terms and conditions

Matter[599]	Revised access arrangement proposal	AER's consideration	Revisions
Obligation to provide firm service clause 1	NT Gas accepted the inclusion of an opening statement in the *General Terms and Conditions*, but has not included the AER's amendment as set out in its draft decision. NT Gas submitted that the AER's amendment does not reflect the nature of the *Reference Service* where it limits this *Service* to the receipt and delivery of *Gas*. The opening statement now refers to the *Service Provider* providing the *Firm Service* to *Users* with whom it has a *Transportation Agreement* in accordance with the *General Terms and Conditions*. To clarify the meaning of the *Reference Service*, NT Gas has also replaced certain references to "Services" in the *General Terms and Conditions* with "*Firm Service*".	The AER accepts NT Gas's proposed revision to clause 1. The AER considers that NT Gas's proposed revision to clause 1 adequately reflects the nature of the *Reference Service*.	None required.
Prudential	NT Gas accepted the AER's	The AER accepts NT Gas's proposed addition of clause 2(b)(iii).	None required.

599 Clause references in this appendix refer to clause numbers in NT Gas's revised access arrangement terms and conditions except where otherwise indicated in brackets. Previous clause references refer to clause numbers in NT Gas's access arrangement terms and conditions submitted in December 2010.

requirements clause 2	amendments to clauses 2(a) and (b) (previously clauses 1(a) and (b)) and has added clause 2(b)(iii). NT Gas submitted that clause 2(b)(iii) is included to ensure that it can require additional financial security during the *Term* of a *Transportation Agreement* where a *User's* credit rating or worthiness suffers a material adverse change. NT Gas also submitted that clause 2(b)(iii) will ensure that *Users* with the similar credit ratings or credit worthiness are treated similarly by NT Gas.	The AER considers it is reasonable that if there has been a material change in the *User's* credit rating or credit worthiness the *User* is required to notify NT Gas of this change and that NT Gas may suspend the provision of the *Firm Service* without liability.	

Nominations clauses 3, 4, 5 and 6	NT Gas did not accept the draft decision for clause 5 (previously clause 4) to be deleted. NT Gas submitted that clause 5 describes a necessary part of the process in receiving and scheduling *Nominations* for the provision of the *Firm Service*. It also submitted that clause 5 establishes the requirement of the *Service Provider* to provide the *Firm Service* as *Scheduled* following *User Nomination*. NT Gas further submitted that *Scheduling* and the requirement to *Schedule* is also linked to the *Service Provider's* rights in respect of curtailment and Force Majeure. NT Gas did not accept the AER's requirement in its draft decision of deleting the term "intention" from the definition of *Schedule* in Schedule 2 of the *Access Arrangement Proposal*. NT Gas submitted that this term should not be deleted because the definition refers to a determination made the Day prior to the *Day* the *Firm Service* will be provided if the intended *Schedule* for the next *Day*. NT Gas partially accepted the AER's amendment to clause 5 of the *General Terms and Conditions.* The revised clause 5 provides that the *Service Provider* will not be obliged	The AER accepts the explanation provided by NT Gas as to the purpose of clause 5 of the revised access arrangement proposal . Accordingly, the AER accepts clause 5 and the definition of "*Schedule*" in the revised access arrangement proposal. The AER has also considered NT Gas' submission in relation to its obligation to *Schedule* up to a *User's MDQ*. NT Gas noted that it is obliged to *Schedule* up to a *User's MDQ* applies where the *User* has nominated up to this value. This was specifically requested by PWC in its first submission. NT Gas also noted that this obligation is subject to clauses 7 and 8 of the revised access arrangement proposal . The AER considers that it is appropriate that the obligation be subject to the provisions of clauses 7 and 8 and accordingly accepts clause 6 of the revised access arrangement proposal .	None required.

	to receive or deliver on any *Day* a quantity of *Gas* in excess of the quantities *Scheduled*. NT Gas submitted that the AER's amendment for the obligation to receive or deliver *Gas* up to the *User's MDQ* is inappropriate because it does not reflect the nature of the delivery of *Pipeline Services* and has the potential to significantly limit the ability of NT Gas to provide *Pipeline Services* to third party *Users*. This is because NT Gas would have to reserve capacity to deliver up to the *User's MDQ* even where this amount is not nominated for that *Day*. NT Gas submitted that this is not in the long term interests of consumers as it limits the potential utilisation of the *Pipeline* for *Services* other than the *Firm Service*. NT Gas also submitted that subject to clauses 6 and 7, NT Gas is obliged to *Schedule* up to a *User's MDQ* where the user has nominated up to this value in accordance with clauses 2 and 3 of the *General Terms and Conditions.*		

Scheduling clauses 7, 8, 9 and 10	NT Gas did not accept the AER's amendment to clause 7 (previously clause 6) requiring "and subject to certain other exceptions" to be deleted. NT Gas submitted that there are exceptions not listed in clause 7 which limit NT Gas's obligations to *Schedule* a *User's Gas.* NT Gas amended clause 7, specifically the phrase the AER requested it to delete in the draft decision. This phrase now reads "and subject to certain other exceptions specified in these General Terms and Conditions". NT Gas accepted the AER's amendment to clause 8(a) (previously 7(a)) adding "such *Scheduling* limitations will be applied only to the portion or portions of the *Pipeline* that are capacity constrained". However, NT Gas submitted that its ability to limit *Scheduling* to capacity constrained portions of the *Pipeline* should be subject to the extent this is reasonably practicable. NT Gas did not accept the AER's amendment to the definitions of *Overrun Quantity* and *Overrun Charge* in Schedule 2. NT Gas	The AER accepts NT Gas's proposed modifications to clause 7. The AER considers that the revised wording provides greater certainty as to the exceptions that apply to clause 7. The AER also accepts NT Gas's revised wording for clause 8(a). The AER considers that it is reasonable to include the wording 'to the extent reasonably practicable' as broader limitations on *Scheduling* may be required for NT Gas to safely operate the *Pipeline*. The AER accepts NT Gas's submission that authorised overruns are as available services that are negotiated between the *User* and NT Gas and as such are included in the *Negotiated Services* section of the *Access Arrangement.* The AER also accepts NT Gas's submission that it would be discriminatory to other *Users* to include authorised overruns as it would give priority of available capacity to PWC. For these reasons the AER considers that the draft decision amendments related to overruns are not required and that NT Gas's revised provisions related to overruns are consistent with the national gas objective under s. 23 of the NGL. Therefore the AER accepts the definitions of *Overrun Quantity* and *Overrun Charge* in Schedule 2 and the *Overrun Rate* in Schedule 1. The AER also accepts the revised clauses 8 and 11 with respect to the amendments made to the term "as available transportation agreement".	None required.

600 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 5.

601 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, pp. 5-6.

	submitted that authorised overruns, being the authorised receipt or delivery of gas in excess of the *User's MDQ* is already addressed in the *Access Arrangement* through as part of the scope for *Negotiated Services.* In addition, an authorised overrun is essentially an as available service and is a service that would be able to be negotiated with separate terms and conditions to that of the *Reference Service*.[600] NT Gas did not accept the AER's amendment to clause 8(b) of the inclusion of "pursuant to authorised overruns". NT Gas submitted that this amendment would give the foundation contractor priority over available capacity even where another User also has a negotiated *Transportation Agreement* in place for the as available *MDQ*. NT Gas submitted that this would discriminate against other *Users* and is also inconsistent with the AER's statements in the draft decision that reject the position put by PWC that it should have priority to capacity. NT Gas further submitted that the inclusion of authorised overruns including a tariff would be discriminatory and be akin to the AER setting the terms and conditions and a tariff for a non-Reference Service.[601]		

	NT Gas did not accept the AER's requirement for the definition of "as available transportation agreement" to be included in Schedule 2. NT Gas has instead replaced all references to this term with "*Negotiated Services*" in clauses 8 and 11.		

Curtailment clauses 11, 12, 13 and 14	NT Gas has revised clause 12(a) (previously clause 12(a)(i)) to include "and the service provider acts". NT Gas did not accept the draft decision for clause 12(b) (previously 12(a)(ii)) to be deleted from the *Access Arrangement*. NT Gas submitted that this clause covers circumstances in which curtailment is necessary for reasons other than the need to carry out work, repair or maintenance on the *Pipeline* in ensuring the safe and efficient operation of the *Pipeline*. NT Gas provided by way of example severe weather events and issues with adjoining/interconnecting pipelines or facilities as possible circumstances resulting in the curtailment of pipeline services.[602] NT Gas accepted the draft decision for clause 12(a)(iii) (of the December 2010 proposed *General Terms and Conditions*) to be deleted from the *Access Arrangement.* NT Gas did not accept the draft decision for clause 12(d) to be deleted from the Access	The AER notes that the purpose of clause 12 is to exclude liability for curtailment or interruptions where there is insufficient *Pipeline* capacity under clause 11 and that insufficiency is caused by particular and prescribed circumstances. As previously accepted by the AER in its draft decision, these are planned or unplanned maintenance under subclause (a) both of which include notice requirements; a *Force Majeure Event* under subclause (b); or where the *Service Provider* is not obliged under the *Transportation Agreement* to provide the *Service* under subclause (c). The AER has considered the examples set out by NT Gas of circumstances which may fall outside of clause 12(a) and which would fall within NT Gas' proposed clauses 12(b) and 12(d). The AER accepts that such circumstances may result in curtailment or interruption, and considers that such events warrant exclusion of NT Gas' liability. However, with regard to clause 12(d), the AER has concerns that potentially any number of events might fall within this clause which would seem at odds with the clearly prescribed events set out in the other subclauses. Clause 12(d) does not refer to any specific type of events or circumstances except that they would be of a kind that resulted in the insufficiency of the *Pipeline.* Nor is it clear to the AER what the interaction is between this clause and clauses 12(a), 12(b) and 12(c) and whether in some circumstances it could potentially override the notice requirements in clause 12 (a). For these reasons the AER considers that the type of event given by way of example by NT Gas (i.e. an issue with adjoining/interconnecting pipelines or facilities resulting in the curtailment of pipeline services) should be included in clause 12(d). Therefore the AER does not accept NT Gas's revised clause 12(d) and considers that	**Revision C.1:** Revise clause 12(b) as follows: Replace the existing text in clause 12(b) with the following: "is, in the Service Provider's opinion (acting reasonably), necessary in accordance with *Good Engineering and Operating Practice* to ensure the safe and efficient operation or integrity of the *Pipeline* and the *Service Provider* provides to the *User* as much notice of the interruption or curtailment as is reasonably practicable; or" **Revision C.2:** Revise clause 12(d) as follows: Replace the existing text in clause 12(d) with the following: "results from damage to adjoining/interconnecting pipelines or facilities used to provide the service and such damage is not caused by the *Service Provider's* breach of the *Transportation Agreement*, negligence *or Wilful Misconduct* and the Service Provider provides to the User as much notice of the interruption or curtailment as is reasonable

602 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 6.

	Arrangement, but has amended this clause. NT Gas has revised clause 12(e) (previously clause 12(b)) to include "results from circumstances under which…"	revisions are required. The AER also considers that revisions are required to clauses 12(b) and 12(d) to specify that the *Service Provider* should be obliged to provide the *User* with as much notice of the interruption or curtailment as is reasonably practical. The AER accepts NT Gas's revised clause 12(e).	practicable; or"

Imbalances clauses 15, 16, 17, 18 and 19	NT Gas partly accepted the AER's amendment to clause 17. NT Gas submitted that the revised clause 17 applies to any *Transportation Agreement* rather than the *Transportation Agreement* currently in place. NT Gas also submitted that the clause has been revised to reflect consistency with other parts of the *Access Arrangement* with respect to the references to *Good Engineering and Operating Practice*. NT Gas partly accepted the AER's amendment to clause 18 but has included the costs incurred by circumstances outlined in clause 17 as part of this amendment.	The AER accepts NT Gas's revised wording of clause 17. The AER considers that: ▪ the revised wording sufficiently reflects the requirement to deliver *Gas Scheduled* under the *Users Transportation Agreement* and any other *Transportation Agreement* ▪ the replacement of the reference to operating the *Pipeline* properly to operating the *Pipeline* in accordance with *Good Engineering and Operating Practice* ensures consistency with other parts of the *Access Arrangement* ▪ it is reasonable to not subject NT Gas's actions to the consent of the *User* where the actions are undertaken when an *Unauthorised Imbalance* limits NT Gas's ability to deliver *Gas Scheduled* for another *User*, or were required to operate the *Pipeline* in accordance with *Good Engineering and Operating Practice*. In relation to clause 18, the AER considers that the phrase "or otherwise making the correction contemplated in clause 17" is too broad. The AER requires this clause be revised to reflect the wording used by NT Gas in its submission.[603]	**Revision C.3:** Revise clause 18 as follows: Replace the phrase "in purchasing *Gas* or otherwise making the correction contemplated in clause 17" with "in purchasing or selling *Gas* or rescheduling when making the correction contemplated in clause 17".
Adjustments to Rates and Charges/Additional Payments clauses 20 and 21	NT Gas has accepted the draft decision for clauses 20, 21 and 22 (of the December 2010 proposed *General Terms and Conditions*) to be deleted from the *Access Arrangement, General Terms and Conditions.* NT Gas has also included a new clause 21 in the revised access arrangement relating to reference	The AER is satisfied that NT Gas has removed the relevant clauses from the *Access Arrangement* as required by the draft decision.[604] The AER accepts the inclusion of clause 21 and considers it reasonable that the *General Terms and Conditions* provide reference to the tariff variation mechanism in the *Access Arrangement.*	None required.

603 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 7.

604 AER, *Draft decision*, April 2011, p. 230.

	tariff variation mechanism in the *Access Arrangement*.		
System use gas and line pack clauses 22, 23, 24, 25, 26 and 27	NT Gas accepted the AER's amendments to clauses 23 and 26 in part.[605] NT Gas proposed that it is infeasible to provide *Users* with a calculation of *System Use Gas* (clause 23). It also proposed to remove the reference to providing *Users* with the movement of *Line Pack*, and substituted it for reporting on the amount of *Line Pack* (clause 26).[606] NT Gas proposed that it should only be required to comply with a *User's* directions on delivery of *Line Pack* if it is reasonably able to do so (clause 27).[607]	The AER queried NT Gas why it was infeasible to provide *Users* with a calculation of *System Use Gas*.[608] NT Gas informed the AER that showing the calculation of *System Use Gas* to each *User* would potentially give rise to *Users* being able to calculate the *Gas* usage of other users.[609] NT Gas further noted since the *Gas* usage of each *User* is commercial-in-confidence information, this is unacceptable. The AER is satisfied that NT Gas's revisions are appropriate under the NGR.	None required.
Operation of the pipeline clauses 28, 29, 30, 31, 32 and 33	NT Gas has accepted the AER's amendment of clause 33 (previously clause 35). However, it has proposed that the words "without liability to the user" be reintroduced to clause 30 (previously clause 32).[610] NT Gas	The AER considers that NT Gas has adequately established that it must be able to curtail the *Firm Service* at times in order to perform works necessary to maintain the safety and integrity of the pipeline. The AER considers that NT Gas has established that it must be able to curtail the *Firm Service* without liability to the *User* in	None required.

605 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 9.

606 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 9.

607 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 9.

608 AER, *Meeting with NT Gas*, 17 June 2011.

609 AER, *Meeting with NT Gas*, 17 June 2011.

610 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 9.

	has submitted that the reasons for this are that situations that necessitate curtailment may go beyond involving insufficient capacity (as detailed in clause 12) and may involve aspects of the *Firm Service* besides those of delivering and receiving *Gas* (such as provision of metering data), in which case the limitation of liability under clause 12 would not apply.[611]	circumstances other than where this results in insufficiency of *Pipeline* capacity.	
Metering clauses 34, 35, 36, 37, 38 and 39	NT Gas accepted the AER's amendment to clause 34, as discussed in the draft decision. NT Gas included a schedule setting out its *Metering and Measurement Requirements* as an appendix to the *General Terms and Conditions.*[612]	The AER is satisfied that the new clause 34 is consistent with the draft decision.[613] This is required to ensure that users are given reasonable notice regarding changes in *Metering and Measurement Requirements* as these changes could potentially result in a costly upgrade of *User* facilities. The AER accepts NT Gas's schedule setting out its *Metering and Measurement Requirements* as set out in appendix B to the revised *General Terms and Conditions.* The AER considers that the provision of this schedule adequately addresses the AER's concerns raised in the draft decision.[614]	None required.
Quality clauses 40, 41, 42, 43, 44, 45, and 46	NT Gas accepted the draft decision as it relates to the *General Terms and Conditions* regarding quality, with the exception of one change to	The AER is satisfied that NT Gas has included the current *Gas Specification* as an appendix to the *General Terms and Conditions* and also that NT Gas has revised clauses 42 and 43 in line with the draft decision.[618]	None required.

611 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, pp. 9–10.

612 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 10; NT Gas, *Revised access arrangement proposal*, May 2011, p. 53.

613 AER, *Draft decision*, April 2011, pp. 234-235.

614 AER, *Draft decision*, April 2011, p. 234.

	the AER's required new clause (clause 41**)**.[615] NT Gas accepted that its right to vary the *Gas Specification* should be subject to the preservation of existing contractual rights and obligations, however, it submitted that preservation of these rights must be subordinate to safety, the operational integrity of the *Pipeline*, and with *Good Engineering and Operating Practice*.[616] It has altered clause 41 accordingly.[617]	The AER considers that the newly drafted clause 41 is consistent with the NGR and accepts NT Gas's revised wording.	

615 NT Gas, *Revised access arrangement* submission, May 2011, attachment H, p. 10.

616 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 10.

617 NT Gas, *Revised access arrangement proposal*, May 2011, p. 43.

618 AER, *Draft decision*, April 2011, pp. 235-236.

Receipt pressures clauses 47, 48 and 49	NT Gas accepted the AER's amendments to clauses 47 and 48.[619] NT Gas has not accepted the insertion of a new clause requiring that *Gas* be delivered to a *Delivery Point* at a given pressure providing that *Gas* is received at the *Receipt Points* at no greater than the *Maximum Allowable Operating Pressure*. NT Gas proposes that there is no direct relationship between receipt of *Gas* at allowable pressure ranges and delivery of *Gas* at allowable pressure ranges. [620]	The AER considers that NT Gas's proposal is correct in stating that it is inappropriate to link receipt and delivery pressures so directly in the *General Terms and Conditions.* [621] The required *Delivery Point Pressure* should be an element of a contract between the *User* and the *Service Provider*, but the AER does not consider it necessary to set this out explicitly in the *General Terms and Conditions.* The AER considers it appropriate under the NGR that NT Gas has not inserted the new clause as proposed by the AER in the draft decision.	None required.
Possession of gas and responsibility clauses 50, 51, 52 and 53		The AER, in the draft decision accepted NT Gas's clauses relating to possession of *Gas* and responsibility.[622]	None required.
Warranties and representations clause 54		The AER, in the draft decision accepted NT Gas's clause relating to warranties and representations.[623]	None required.
Title	NT Gas accepted the AER's amendments, but clarified clause	The AER accepts NT Gas's modification of clause 55(b). The AER considers that the modification of this clause is required to specify	None required.

619 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 11.

620 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 11.

621 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 11.

622 AER, *Draft decision*, April 2011, p. 241.

623 AER, *Draft decision*, April 2011, p. 241.

clauses 55, 56 and 57	55(b) to specify that where the *User* sells *Gas* to another *User* the new owner of the *Gas* must also have a *Transportation Agreement* with NT Gas. [624]	that where the *User* sells *Gas* to another *User* the new owner of the *Gas* must have a *Transportation Agreement* with NT Gas.	
Allocation of receipts and deliveries clause 58, 59 and 60	NT Gas has accepted the AER's deletion of a clause from this section and the AER's amendment of clause 59. [625]	The AER is satisfied that NT Gas has removed the relevant clause and revised clause 59 as required by the draft decision. [626]	None required.
Addition of Receipt Points and Delivery Points Clause 61, 62, 63, 64, 65 and 66	NT Gas has accepted the AER's revisions in part. Specifically, NT Gas proposed that the AER's revisions of clause 65(e)(ii) are acceptable but that it did not consider the AER's revision of clause 65(e) and 65(e)(i) to be appropriate. [627] NT Gas proposed that the *User* should be required to pay NT Gas's reasonable costs, rather than incremental costs relating to the provision of an additional *Receipt Point* or *Delivery Point*. NT Gas also proposed that since additional *Delivery Points* or *Receipt Points*	The AER considers that as there may exist circumstances where an additional *Delivery Point* or *Receipt Point* is required to be constructed that does not conform to "the appropriate industry standard", [629] NT Gas should not only be limited to recovering costs of designing and constructing an additional *Delivery Point* or *Receipt Point* to the appropriate industry standard. As such, the AER accepts NT Gas's proposed clause 65(e)(i). However, the AER does not consider that NT Gas's changes to clause 65(e) are acceptable. The AER considers that allowing NT Gas to recover incremental costs in regard to the provision of an additional *Delivery Point* or *Receipt Point* covers a wide enough range of costs such that NT Gas would not be disadvantaged. That is, incremental costs would be those costs that NT Gas would not otherwise have incurred had the *User* not requested the additional *Delivery Point* or *Receipt Point*. The AER also considers that allowing this level of cost recovery will promote the long term	**Revision C.4:** Revise clause 65(e) as follows: Replace the phrase "the *User* must pay the reasonable costs incurred by the *Service Provider* in:" with "the *User* must pay only the incremental costs that are incurred by the *Service Provider* in:"

624 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 11.

625 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 12.

626 AER, *Draft decision*, April 2011, p. 238.

627 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 12.

628 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 12.

	may be required to be built to a standard that is not "the appropriate industry standard", NT Gas should not be limited to only recovering costs that would be incurred in designing and constructing an additional *Receipt Point* or *Delivery Point* to the appropriate industry standard. [628]	interests of consumers of natural gas as is the objective.[630] Further, the AER does not consider that substitution of 'reasonable costs' for 'incremental costs' improves the clarity of the *General Terms and Conditions* for *Users*.	
Dispute resolution Clause 67, 68 and 69	NT Gas proposed that the parties should not be required to mutually agree at the time of the dispute to have an independent expert appointed. [631] NT Gas's alternative drafting of clause 67 allows for either party to refer to an independent expert for resolution, however, if the parties are unable to agree on the identity of an expert the dispute will be referred for resolution to the Institute of Arbitrators and Mediators.	The AER considers that NT Gas's redrafting of the clause is unclear. The AER considers, however, that with some alteration NT Gas's amended clause 67 is suitable for inclusion in the *Access Arrangement.* The AER considers that this drafting of the clause provides either *Party* with the ability to propose referral of an issue to an independent expert without the need of prior mutual agreement.	**Revision C.5:** Revise clause 67 as follows: Replace the existing text in clause 67 with the following: "Either *Party* may propose to refer, for determination by a specified independent expert, an issue in respect of the *Transportation Agreement* in dispute between the *Parties.* Such an issue in dispute is only capable of determination by audit or by reference to accounting, engineering or scientific knowledge and practice, to the extent that it does not otherwise involve the interpretation of the *Transportation Agreement.* If the *Parties* agree on the referral to that independent expert then the issue will be referred to the independent expert for consideration. However, if the *Parties* are unable to agree

629 NT Gas, *Revised access arrangement proposal*, May 2011, pp. 46–47.

630 NGL, s. 23.

631 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 12.

			on the identity of an independent expert within 10 days of the proposed referral, the *Parties* must request that the Institute of Arbitrators and Mediators nominate a person with appropriate commercial, technical and practical experience to determine the issue."
Default clauses 70, 71 and 72		The AER in the draft decision accepted NT Gas's clauses relating to default arrangements.[632]	None required.
Billing and payment Clauses 73, 74, 75 and 76	NT Gas has not accepted the AER's amendment of clause 74.[633] While accepting that a definition of the interest charge for late payment should be included, it has rejected the use of the Commonwealth Bank corporate overdraft reference rate plus two percentage points and instead substituted the one month Australian Bank Bill Swap Reference Mid Rate specified by Reuters Monitor Service Page BBSY at or about 10.00am (Sydney Time) on the first Business Day of each Month. [634] NT Gas proposed that this is more in line with other APA	The AER considers that as the Default Rate specified by NT Gas is available only through a subscription service, the Commonwealth Bank corporate overdraft reference rate is preferable. This is consistent with the recent decision on the APT Allgas distribution network[636] and ensures a more transparent access arrangement.	**Revision C.6:** Revise clause 74 as follows: Replace the phrase "Default Rate" with "Commonwealth Bank corporate overdraft reference rate plus two percentage points".

632 AER, *Draft decision*, April 2011, pp. 240-241.

633 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 13.

634 NT Gas, *Revised access arrangement proposal*, May 2011, p. 48.

	Group *Transportation Agreements*.[635]		
Information interface clauses 77 and 78	NT Gas did not accept the AER's amendment to clause 78 that the *User's* liability should be limited to negligence or misuse of the *Information Interface*. NT Gas submitted that negligence, including errors and mistakes can incur losses which impact on the revenue of the *Service Provider* and other *Users* and that it should not be exposed to potential liability in this case. However, NT Gas amended clause 78 to accept that the *User's* liability should be reduced to the extent of negligence by NT Gas.	In view of NT Gas's exclusion of the *User's* liability where the loss is caused by NT Gas' negligence and NT Gas' explanation regarding the potential for loss to the revenue of other parties where otherwise the conduct of an employee may not amount to negligence or misuse, the AER accepts NT Gas's revised clause 78.	None required.
Limitation of liability and indemnity clauses 79, 80 and 81	NT Gas does not accept amendments to clauses 79–81. With regard to clause 79, NT Gas did not accept the AER's amendments to subclauses (a) and (b).[637] NT Gas submitted also that the exceptions listed within the clause	The AER considers that clause 79 as proposed by NT Gas does not appropriately allocate risk and requires amendment. However, the AER also acknowledges the extensive comments made in submissions on the liability provisions especially in relation to *Consequential Loss*. These comments ranged from PWC's submission that there should be no liability for *Consequential Loss* at all[646] to NT Gas's submission that the User is able to protect itself by limiting its exposure to consequential loss in contracts with end users. NT Gas also submitted that extending liability for *Consequential Loss* to it would expose it to the risk of catastrophic	**Revision C.7:** Revise clause 79 as follows: Replace the existing text with the following: "Unless agreed by the *Parties* and set out in the *Transportation Agreement*, to the extent permitted by law, neither *Party* (including the *Service Provider's Related Bodies Corporate*) is liable to the other *Party* for *Consequential Loss* or for punitive or

635 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 13.

636 AER, *APT Allgas Energy Pty Ltd access arrangement*, June 2011, p. 30; AER, APT *Allgas Energy Pty Ltd access arrangement (terms and conditions)*, June 2011, p. 32.

637 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 13.

638 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 14.

	that apply to the *User* are necessary in order to protect NT Gas from the risk associated with any exposure to *Consequential Losses*. NT Gas further submitted that the *User* is able to protect itself by limiting its exposure to *Consequential Losses* in	losses and would not be commensurate with the rate of return on the pipeline.[647] Taking all submissions into account, the AER considers that an amendment is required to clause 79 which accepts that with respect to *Consequential Loss* the parties may agree on such loss or damages otherwise than as set out in clause 79. With regard to the definition of '*Consequential Loss'*, in providing the flexibility to the parties to agree otherwise than as provided for in clause 79, the AER	exemplary damages arising in respect of the *Transportation Agreement* except where such loss or damage arises out of: (a) gross negligence or *Wilful Misconduct* by either the *Service Provider* or the *User*; (b) the *Service Provider's* or the *User's* liability relating to rates, *Charges* and other payments under the *Transportation*

639 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 15.
640 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 14.
641 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 14.
642 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 15.
643 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 16.
644 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 15.
645 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 15.
646 PWC, *Submission to the AER*, March 2011, p. 20.
647 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 14.
648 APT Petroleum Pipelines Limited, *Access arrangement for Roma to Brisbane Pipeline*, March 2007, clause 49, p. 43.
649 NT Gas, *Revised access arrangement proposal*, May 2011, Schedule 2, p. 35.
650 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 14.
651 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 15.
652 Santos & Magellan, *Submission to the AER*, March 2011, p. 9.
653 AER, *Final decision*, July 2011, Appendix D, p. 5.
654 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 14.
655 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 15.
656 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 15.
657 PWC, *Submission to the AER*, March 2011, p. 20.
658 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 15.
659 APT Petroleum Pipelines Limited, *Access arrangement for Roma to Brisbane Pipeline*, March 2007, clause 49, p. 43.

	its contracts with end users.[638] NT Gas submitted that clause 79(b) is required to make clear that amounts owed under the *Transportation Agreement* must be paid regardless of their characterisation as direct or *Consequential Losses*.[639] With regard to clause 79(c), NT Gas does not accept the insertion of unauthorised overruns, as it has not incorporated the new services proposed by the AER into the *Access Arrangement*. Therefore, all overruns in respect of AGP will be unauthorised overruns.[640] With regard to *Gas* quality in clause 79(f) and the AER's proposed new clauses (amended clause 79(b) in the draft decision), NT Gas submits that it has no control over the *Gas* quality and pressure itself, and hence it is inappropriate for NT Gas to assume risk for *Gas* quality and pressure. NT Gas considers that it is entirely appropriate for the *User* to be liable for losses suffered by NT Gas as a result of the quality of *Gas* it makes available at the *receipt point*.[641] NT Gas also does not accept the deletion of clause 79(h) as it	does not require revision to the definition of '*Consequential Loss*.' In relation to clause 79(a), the AER notes NT Gas's submission but considers that reciprocal liability for *Consequential Loss* where that loss is caused by a parties' gross negligence or *Wilful Misconduct* is appropriate as it rebalances the liability provisions. The AER therefore does not accept NT Gas's revised access arrangement proposal to exclude clause 79(a). The AER notes that a provision of this kind is included in the approved access arrangement for the Roma to Brisbane Pipeline.[648] The AER also requires that the definition provided by NT Gas of *Wilful Misconduct*[649] be retained for this purpose. The AER accepts that the amended clause 79(b) as required in the draft decision should be deleted on the basis that it is the *User* that is in a position to exercise most control over the quality of *Gas* delivered by the *Service Provider*.[650] In this respect, the AER accepts NT Gas general comments on the liability provisions to the extent that the *User* is, in part by contracting with third party users, better placed to manage risk associated with the receipt and delivery of *Gas* particularly with respect to quality and pressure. The AER accepts NT Gas's justification for not accepting the AER's amendment to clause 79(b).[651] However, the AER considers that as clause 79(b) is now to be included, it should be revised so that it covers both the *Service Provider*'s and *User*'s liability. As Santos and Magellan noted in its submission, if included in this clause it should also include payments that may be due to the User.[652] The AER accepts NT Gas's clause 79(c) because it refers to overrun quantities. This is consistent with the AER's acceptance of the definitions of *Overrun Quantity* and *Overrun Charge* in Schedule 2 and the *Overrun Rate* in Schedule 1.[653] In line with its draft decision, the AER considers that clause 79(e) is	*Agreement*; (c) the *User's* liability relating to: (i) *Imbalances*; (ii) the receipt, transportation or delivery of *Overrun Quantities;* (iii) the *User's* obligation to deliver gas which meets the quality required by the *Gas Specification* or any other quality as the law in the relevant jurisdiction requires; (iv) a failure to supply *Gas* at *Receipt Points* within a specified pressure range; and (v) the indemnity described in clause 81; (vi) the use of the *Information Interface* by the *User's* employees who have been authorised for use by the *Service Provider."* **Revision C.8:** Revise clause 80 as follows: Replace the existing text with the following: "The aggregate liability of the *Service Provider* and its *Related Bodies Corporate* in respect of the *Transportation Agreement*, excluding for the gross negligence or *Wilful Misconduct* of the *Service Provider* or its *Related Bodies Corporate*, will be limited to a monetary liability cap of 10 per cent of the contract value over the life of the contract in relation to any one event or occurrence." **Revision C.9:**

	considers that *Users* should be liable for losses incurred by NT Gas resulting from *User's* use of the *Information Interface*, and that such losses should not be limited to negligence or misuse of the *Information Interface*.[642] In respect of '*Consequential Loss'*, NT Gas submits that the definition of '*Consequential Loss'* is used as part of the limitation of liability such that if loss falls within the definition of '*Consequential Loss'*, the parties are not liable for those losses (with limited exceptions). As such, NT Gas submits that the AER's comments regarding the definition have no practical consequence as the operative clause limits liability to direct losses only. [643] With regard to clause 80, NT Gas submits that a liability cap is crucial to their risk management and that it is usual for transportation agreements to have an aggregate liability cap of 10 per cent of the contract value.[644] As such, NT Gas does not accept the deletion of clause 80. With regard to clause 81, NT Gas submitted that the indemnity contained in clause 81(a) is	not necessary given that, according to NT Gas' submission, damage and loss are only likely to occur when *Off-Specification Gas* is delivered or transported.[654]The AER considers that such delivery is covered by subclause 79(d). The AER accepts NT Gas's submission to retain clause 79(h)[655], now amended to clause 79(c)(vi) as being consistent with the AER's acceptance of the liability changes to clause 78. The AER notes, in regard to clause 80, NT Gas's comments as to the importance of the liability cap and that such a provision is usual commercial practice.[656] The AER would have preferred for NT Gas to put forward a definite figure for the cap but in the absence of such proposes a redraft of the clause that provides for certainty as to how the cap is to be calculated. In addition, on accepting the inclusion of a cap, the AER requires that it does not apply where the liability is as a result of NT Gas's or its *Related Bodies Corporate* gross negligence or *Wilful Misconduct*, as submitted by PWC.[657] With regard to clause 81(a), the AER has reassessed this provision in light of NT Gas's submission. NT Gas submitted that the *User* is in a position to manage the risk the indemnity will be called upon, by putting in place appropriate back to back limitations of liability with end users with whom NT Gas does not contract.[658] As such, the AER considers that the indemnity is reasonable subject to it being amended so as not to extend to the gross negligence or *Wilful Misconduct* of NT Gas or its *Related Bodies Corporate*. The AER does not accept the exclusion of the reciprocal indemnity. While such losses are recoverable as a matter of law, the indemnity may simplify access to and expedite resolution of a claim for loss. The AER notes that an indemnity of this kind is included in the approved access arrangement for the Roma to Brisbane Pipeline.[659]	Revise clause 81(a) as follows: Replace the existing text with the following: "a customer or contract counterparty of the *User* suffers, or claims to suffer, loss or damage in respect of the *Service Provider's* or its *Related Bodies Corporate* acts or omissions under the *Transportation Agreement*, except that the obligation to indemnify will be reduced in proportion to the extent that the loss or damage is caused by the gross negligence or *Wilful Misconduct* of the *Service Provider* or its *Related Bodies Corporate: or*" **Revision C.10:** Include new clause 82: Each *Party* indemnifies the other for any loss arising out of its gross negligence or *Wilful Misconduct*.

	necessary as it is the only mechanism available to NT Gas to limit or control its exposure to claims potentially brought by the *Users* customers, and does not accept its deletion.[645]		
Force Majeure Clauses 82, 83, 84, 85, 86 and 87	NT Gas has not amended clauses 82, 82(f), 82(g), 83 and 85 as required in the draft decision. NT Gas has accepted the AER's changes to clauses 82(a) and 84.[660] Regarding clause 82, NT Gas does not accept the deletion of the word 'reasonable'. It does not agree that *Force Majeure Events* are limited to events for which the *Parties* have absolutely no control, but rather, proposed that some *Force Majeure Events* may occur over which the *Parties* can exercise some degree of control.[661] Regarding clause 82(f), NT Gas proposed that actions by an outside *Authority*, while they may be within the control of NT Gas, may not be within the reasonable control of NT Gas and as such the phrases removed	As discussed in the draft decision, [666] the AER considers that there is a qualification in clause 82, where NT Gas proposes that such an event will be one that "…the *Party* is not reasonably able to prevent or overcome" that clearly indicates that a *Force Majeure Event* is not one that the *Party* can reasonably prevent or wholly mitigate. The AER maintains that for this reason, the word 'reasonable' should be deleted from the first part of this clause. This is consistent with the approach taken in the *General Terms and Conditions* attached to the earlier access arrangement.[667] After the review of NT Gas' revised access arrangement proposal, the AER accepts that the events in clause 82(f) may fall within the definition of a *Force Majeure Event* and accepts its inclusion in the list of possible *Force Majeure Events* all of which are subject to the threshold test in clause 79.[668] The AER accepts clause 82(g) on the basis that breakdowns and necessary alterations, repairs and maintenance may fall within the definition of a *Force Majeure Event*. The AER, however, requires the deletion of the phrase "loss or damage or" as the meaning of this in the context remains unclear and uncertain. In accepting this provision, the AER notes that NT Gas has proposed that it is not appropriate in the context for this provision to be reciprocal given	**Revision C.11:** Revise clause 82 (now renumbered as clause 83) as follows: Delete the word 'reasonable' from the first paragraph. **Revision C.12:** Revise clause 82(g) (now renumbered as clause 83(g)) as follows: Delete the words "loss or damage or". **Revision C.13:** Revise clause 83 (now renumbered as clause 84) as follows: Replace the existing text with the following: "The following events: (a) lack of finances; (b) changes in market conditions for the transportation and purchase or sale of *Gas;*

660 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, pp. 16–19.

661 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 16.

	by the AER may still be candidates for Force Majeure. [662] Regarding clause 82(g), NT Gas proposed that it is obligated under the *General Terms and Conditions* to undertake alterations, repairs, and maintenance of the *Pipeline*, and that failure to do this would negate the Force Majeure protection under clause 82. NT Gas has submitted that nevertheless, breakdown, loss or damage can occur that will require alterations repairs or maintenance and could constitute a *Force Majeure Event*. [663] Regarding clause 83, NT Gas proposed that it is not appropriate for the *Service Provider* to take on the risk of Force Majeure of other *Parties*. NT Gas proposed that this clause could capture and event such as a supplying gas basin having insufficient reserves, and that this	that the *Pipeline* is used by one *User* only.[669] In response, the AER considers that any breakdown, loss or damage to the *User's* equipment may constitute a *Force Majeure Event* if it meets the requirements set out under clause 79. The AER notes NT Gas's submission in relation to clause 83 and in particular the inappropriateness of the *Service Provider* assuming risk which is beyond its control and potentially uninsurable. The AER considers that this provides a satisfactory basis on which to accept in part some elements of the clause which the AER had deleted in its draft decision. Taking NT Gas' submission into account and given there is only one pipeline user, the AER considers that it is reasonable that clause 83 covers the inability of the *User* to source a supply of *Gas.* The AER also considers that it is reasonable that clause 83 cover the inability of a person other than the *User*, who receives *Gas* from the *User*, to take *Gas* where its inability to do so is due to circumstances within its control. Otherwise, the AER considers it reasonable that the Force Majeure provisions can potentially be applied for the benefit of both *Parties*; the revisions to this provision strike an appropriate balance. The AER considers that NT Gas's proposal regarding clause 85 is acceptable, however, the AER requires the deletion of the phrase "among other things" as it is uncertain as to what is contemplated.	(c) the inability of the *User* or a person supplying *Gas* at or upstream of the *Receipt Points* to obtain a supply of *Gas* for transportation under the *Transportation Agreement*; or (d) the inability of a person, other than the *User*, consuming *Gas* at or downstream of the *Delivery Point* to take gas due to any event or circumstance within the control of that person; will under no circumstances constitute or cause a *Force Majeure Event*." **Revision C.14:** Revise clause 85 (now renumbered as clause 86) as follows: Delete the words "among other things".

662 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, pp. 16–17.

663 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, pp. 17–18.

664 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, pp. 18–19.

665 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, p. 19.

666 AER, *Draft decision*, April 2011, pp. 246–249.

667 NT Gas, *Access arrangement for Amadeus Basin to Darwin Pipeline*, February 2003, p. 29.

668 This is consistent with the AER's final decision in Jemena Gas Networks – AER, Jemena Gas Networks access arrangement, June 2010, Reference Services Agreement p. 75.

669 NT Gas, *Revised access arrangement submission*, May 2011, attachment H, pp. 18–19.

	event would undermine the security of its contracts. [664] Regarding clause 85, NT Gas does not accept the deletion of the phrase "among other things". NT Gas also does not accept the AER's reformulation of the clause, stating that the amount of *Gas* nominated by the *User* and subsequently *Scheduled* can be different from the *MDQ* required by the *User*. [665]		

Assignment clauses 88, 89, 90, 91 and 92		The AER in the draft decision accepted NT Gas's clauses relating to parties assigning their interest in the Transportation Agreement.[670]	None required.
Confidentiality clause 93, 94 and 95	NT Gas did not accept the AER's amendment to clause 93 relating to the use of *Confidential Information* by the *User*. NT Gas submitted that this clause provides protection to both the *Service Provider* and the *User* that *Confidential Information* held between the *Parties* will only be used for the purpose of performing obligations under the *Transportation Agreement*. NT Gas accepted the draft decision amendments to clauses 94 and 95 of the *Access Arrangement General Terms and Conditions*.	The AER accepts clause 93 of NT Gas's revised access arrangement proposal. The AER is satisfied that NT Gas's revised access arrangement proposal contains more detail surrounding the use of information for internal purposes related to governance. The AER considers that the disclosure of *Confidential Information* by either the *User* or NT Gas to its Board is a necessary business practice although not required under the *Transportation Agreement*. The AER is also satisfied that NT Gas has revised clauses 94 and 95 as required by the draft decision.	None required.

670 AER, *Draft decision*, April 2011, p. 249.

D Submissions

The AER received submission on NT Gas's revised access arrangement proposal and the draft decision from the following interested parties:

- Northern Territory Major Energy Users
- Power and Water Corporation
- NT Gas

Glossary

ABS	**Australian Bureau of Statistics**
Access Economics	Access Economics Pty Ltd
AEMC	Australian Energy Market Commission
APA	APA Group
APT Allgas	APT Allgas Energy Pty
APTNT	APT Pipelines NT Pty Ltd
ASX	Australian Stock Exchange
AWOTE	average weekly ordinary time earnings
bppa	basis points per annum
capex	capital expenditure
CAPM	capital asset pricing model
CEG	Competition Economics Group
CGS	Commonwealth Government Securities
CPI	Consumer Price Index
DBCT	Dalrymple Bay Coal Terminal
DCVG	direct current voltage gradient
DNSPs	distribution network service providers
DRP	debt risk premium
EGW	electricity, gas and water
Envestra	Envestra Limited
ERA	Economic Regulation Authority
GDP	gross domestic product
GFC	global financial crisis
GJ	gigajoules (equal to 1 000 000 000

	joules)
IMF	International Monetary Fund
IPART	Independent Pricing and Regulatory Tribunal
LPI	labour price index
Marsh	Marsh Pty Limited
MDQ	maximum daily quantity
MRP	market risk premium
NGO	national gas objective
NT	Northern Territory
NTMEU	Northern Territory Major Energy Users
NT Treasury	Northern Territory Treasury
next access arrangement period	1 July 2016–30 June 2021
O&M	Operating and maintenance expenditure
OECD	Organisation for Economic Co-operation and Development
opex	operating expenditure
PTM	pipeline tariff margin
PWC	Power and Water Corporation
QLD	Queensland
RAB	Regulated asset base
RBA	Reserve Bank of Australia
RFM	roll forward model
SA	South Australia
SCADA	supervisory control and data acquisition
SFG	Strategic Finance Group Consulting

TLCF	tax loss carry forward
Tribunal	Australian Competition Tribunal
UBS	Union Bank of Switzerland
VAA	Value Adviser Associates
WA	Western Australia
WACC	weighted average cost of capital
Wilson Cook	Wilson Cook & Co.