APPENDIX K

Debt and Equity Raising Costs

April 2011

Powerlink

Debt and equity raising costs

April 2011

Contents

1 Executive Summary

Powerlink is currently in the process of developing its Regulatory Revenue Proposal for the regulatory control period (2013-17), which is to be submitted to the Australian Energy Regulator (AER) by the end of May 2011. In the context of this review, Powerlink engaged PricewaterhouseCoopers (PwC) to provide recommendations relating to debt and equity raising transactions costs.

Debt raising transaction costs

A benchmark allowance for debt raising transaction costs is necessary to compensate regulated businesses for the transaction cost of raising debt finance. Under the benchmark regulatory framework it is not the actual costs that a company incurs that are relevant to the AER, but rather the costs that would be incurred by a business that is in the same circumstances as the regulated business and that has the regulatory benchmark level and form of finance. That benchmark is that:

- the business has a level of debt that is 60 per cent of the regulatory asset value;
- the business has a credit rating of BBB+; and
- the form of debt is Australian corporate bonds with a term to maturity at issue of 10 years.

There are two major components of debt raising transaction costs:

- Arrangement/placement fees that are paid to investment banks for those banks to manage the capital raising process; and
- Other costs that are incurred as part of a bond raising, including fees for obtaining a credit rating, legal fees and like matters.

In order to estimate the transaction costs associated with a bond program, it is first necessary to have an assumption about the average size of bond issue that is made by Australian businesses. Based on Australian bond issues made by infrastructure businesses over the last 5 years, we find that the average (or 'standard') issue size is $250 million. We have assumed that Powerlink's opening regulated asset base (RAB) will be $6,537 million, which will require a bond program of $4,000 million made up of 16 standard issues.

Arrangement/placement fees paid by firms issuing bonds in Australia are not revealed in publicly available documents. However, some of the international bond issues made by Australian businesses reveal these fees in prospectuses and are reported by Bloomberg. The AER has stated that it considers this to be a robust and transparent

source of data on arrangement/ placement costs.[1] We examined arrangement/placement fees for 25 international bond issues by Australian businesses reported by the Bloomberg service over the period from 2004/05 to 2010 (sourced from Bloomberg). Observed arrangement placement fees were converted to an annualised equivalent based on a generic weighted average cost of capital (WACC) assumption of 10 percent.

We could not find a discernable relationship between size of bond and term of bond issue with the annualised arrangement/placement fee. However, there were 4 bond issues that we consider to be outliers, and when these were removed, the average arrangement fee observed for the 21 remaining bond issues was 7.2 basis points per annum. We have therefore adopted 7.2 basis points as the benchmark arrangement/ placement fee.

The second component of the cost of issuing a bond is the 'other costs' described above. In order to estimate these costs, we held discussions with a credit rating firm, and law firms engaged in the bond issuance process in Australia, and have obtained bank data. For one standard issue of $250 million, we found that the annualised 'other costs' are 2.5 basis points per annum. Of these costs, the firm-wide cost of an initial credit rating and its annual renewal cost can be shared across further bond issues, and reduces as the number of standard issues increases. Therefore, with 16 standard issues (required to fund Powerlink's notional debt of $4,000 million at 2012), we find that the 'other costs' reduce to 1.9 basis points per annum.[2]

Table 1 shows that for a company of the size of Powerlink, which would require 16 standard sized bond issues, a total debt raising transaction cost of 9.1 basis points per annum is indicated.

Table 1: Powerlink – estimated debt raising transaction costs (basis points per annum)

Case	1 Issue	16 Issues
Amount raised	$250m	$4,000m
Bond arrangement/ placement fees	7.2	7.2
Other bond raising transaction fees	2.5	1.9
Total debt raising transaction cost	9.7	9.1

Source: PwC analysis based on Bloomberg data and industry sources

1 AER (28 April, 2009), *Final Decision – Transend Transmission Determination 2009-10 to 2013-14*, p.105.

2 The notional debt level of approximately $4,000 million is 60 percent of an estimated opening RAB of $6,537 million in 2012.

Equity raising transaction costs

Again, a benchmark allowance for equity raising transaction costs is necessary to compensate regulated businesses for the transaction cost of raising new equity finance where it has insufficient retained cash flow from which to finance capital expenditure. Under the benchmark regulatory framework it is not the actual costs that a company incurs that are relevant to the AER, but rather the costs that would be incurred by a business that is in the same circumstances as the regulated business and that has the regulatory benchmark level and form of finance. A benchmark assumption that is typically made when quantifying these costs is that the business is listed on the Australian share market, and so can obtain new equity from investors through what is referred to below as a seasoned equity offering. An implication of this benchmark assumption is that the business should also make distributions that are consistent with firms within in its investment asset class, while maintaining its debt financing consistent with the benchmark assumptions discussed earlier.

Two major questions that need to be addressed to estimate equity raising transaction costs are:

- How much equity needs to be raised (that is, how much of the capital expenditure cannot be financed from internal funds)?
- What is the unit cost that equity injection, in turn requiring a view about how much equity can be raised through a dividend investment plan and how much needs to be raised through a seasoned equity offering?

Turning to the first of these matters, given the benchmark assumption of a constant debt level at 60 per cent of the regulatory asset base, the issue reduces to the quantum of dividends that the firm is assumed to pay.

When the AER first considered this matter, it rejected the suggestion that a dividend yield of 8.6 percent should be assumed, and instead proposed to apply a payout ratio assumption of 70 percent. When the AER's adviser, Associate Professor John Handley advised that a 100 percent payout ratio was consistent with the valuation framework being applied by the AER, the AER adopted a policy of assuming a 100 percent payout ratio.

It is noted, however, that neither of these assumptions of the AER was based upon empirical observation of like companies (that is, infrastructure firms). We have found that since 2006, but excluding the period of the global financial crisis, the average dividend yield of infrastructure businesses has exceeded that of the ASX200 firms, being 8.4 percent and 4.1 percent respectively. Accordingly, we recommend that a dividend yield of 8.4 per cent be assumed. We have also found that if the period of the global financial crisis is

ignored,[3] then the average dividend yield for the listed Australian infrastructure businesses is stable over time, and hence is an appropriate basis for defining the benchmark assumption.

Turning to the second of these issues, we note that the AER previously assumed that 30 percent of any dividends paid could be recovered by means of a dividend investment plan. However, the AER's conclusion appeared to be an assumption rather than reflecting a consideration of empirical evidence. We have analysed the dividend payments and reinvestment plans of the Australian listed regulated energy utilities since 2000, and found that dividend reinvestment represented 18 per cent of the dividends paid, which we recommend being employed.

Lastly, turning to the unit rate, we note that the AER has previously assumed that the cost of implementing a dividend reinvestment plan is 1 per cent of the equity raised.[4] We agree that these plans have a materially lower transaction cost than a seasoned equity offering, and are unaware of evidence to suggest that the AER's assumption of 1 per cent is materially incorrect and so recommend that this be adopted. In addition, the AER has previously assumed a 3 percent transactions cost for a seasoned equity offering. Our empirical analysis examined 58 equity offers by businesses with market capitalisations above $200 million that raised $21.05 billion between 2004/05 and 2010. The average transaction cost as a proportion of expected proceeds was 2.65 percent. However, for equity raisings of $150 million to $250 million per annum,[5] which is the more appropriate range for Powerlink based on our preliminary modelling of regulatory revenues and costs, the average cost was close to 3 percent. We therefore recommend that a 3 percent cost continue to be applied.

Based on a requirement to provide an 8.4 percent dividend yield, an assumed dividend reinvestment rate of 18 percent (with the cost of dividend reinvestment being 1 percent of the amount raised), and equity raising costs being 3 percent of the value of equity raised, modelling of Powerlink's draft building blocks parameters over the 2013-2017 implies a $31.5 million allowance (undiscounted) for equity raising costs for Powerlink. The upfront allowance required for Powerlink (based on an NPV using a generic 10 percent WACC) is $24.7 million. Discounting this value for 6 months (to 31 December, 2011) using a generic CPI assumption of 2.5 percent yields a value of $24.4 million.

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3 The reasons for ignoring these observations are as follows. During this period, the market values of listed equities fell, reflecting (amongst other things) a reduction in expected future profit. However, as dividend yields are typically measured on the basis of the last (historical) dividend, this resulted in the measured yields for many firms rising until the new levels for dividends that reflected the consequences of the crisis on profits were observed. This initial rise in dividend yields is an artefact of the measurement process and should be ignored.

4 AER (28 April, 2009), *Final Decision – Transend Transmission Determination 2009-10 to 2013-14,* p. 110.

5 The range of $100 million to $250 million per annum is based on modelling results estimating benchmark levels of new equity issues (see Table 5.3 below).

2 The Brief and outline of report

Powerlink is currently in the process of developing its Regulatory Revenue Proposal for the regulatory control period (2013-2017), which is to be submitted to the Australian Energy Regulator (AER) by the end of May 2011. In preparing its proposal, Powerlink has appointed PricewaterhouseCoopers (PwC) to undertake analysis and provide recommendations relating to a number of specific issues. The two broad issues covered in this report are:

- Debt raising transaction costs - Powerlink has requested that PwC's report includes a proposed methodology and an estimate of debt raising costs for inclusion in Powerlink's Revenue Proposal.
- Equity raising transaction costs - Powerlink has also requested that PwC's report includes a proposed methodology and an estimate of equity raising costs for inclusion in Powerlink's Revenue Proposal.

2.1 Outline of report

This report is structured as follows:

- Chapter 3 sets out the main methodological issues associated with the analysis of debt and equity raising transaction costs.
- Chapter 4 sets out the results of our analysis for debt raising costs.
- In Chapter 5 we review the issue of equity issues required for capital expenditure programs, and the results of our analysis of equity raising costs.

3 Methodological approach for debt and equity raising transaction costs

3.1 Introduction

In this chapter we outline the methodological approach we have adopted to estimate debt and equity raising transaction costs. We begin by describing the notion of the regulated entity, and its benchmark financing assumption. We then turn to a description of the main data sources, and how we have defined key parameters.

3.2 The notional regulated entity

The concept of the notional regulated entity is central to the Australian regulatory framework that the AER operates in. With respect to financing activities, the notional regulated entity is considered to be an entity that is geared at the notional optimal gearing level, and undertaking the financing arrangements that an efficiently financed benchmark entity would enter into. These 'efficient' financing arrangements would be expected to reflect observations of standard industry practice, and not necessarily the actual practices of the regulated firms. That is, the actual debt and equity raising transaction costs incurred by a regulated business are not relevant to the AER in the context of a benchmark framework.

Concentration on the benchmark financing arrangements, rather than actual arrangements, is expected to provide businesses with incentives to adopt more efficient financing arrangements, and by abstracting from the complexities of some actual practices, to simplify the regulatory process.

In the context of an electricity transmission or distribution business, under the National Electricity Rules the notional regulated entity is an Australian business with a gearing level of 60 percent. In keeping with the Australian regulatory standard for electricity transmission and distribution businesses, as established by the AER, we also assume that debt (fixed rate bonds) of 10 years terms are obtained in the domestic market, based on a notional credit rating level of BBB+.

3.3 Data sources and definitions

3.3.1 Debt raising transaction costs

Our approach

To estimate the costs associated with debt issuance, we have estimated the costs of separate components of the total cost. The two major components of debt raising transaction costs are:

- Arrangement/placement fees earned by investment banks to compensate for their management of the capital raising process; and
- Other costs associated with the bond raising, including credit rating fees, legal fees etc.

Having estimated each of these costs on a basis points per annum basis, we have summed them to derive a total cost. In order to derive a cost estimate, it is first necessary to determine the average, or 'standard' size of Australian bond issues. We assess the standard issue size by reference to bond issues over the last 5 years that were made by Australian infrastructure businesses in the Australian market. This is consistent with ACG's 2004 study (the '2004 study'), which has subsequently been relied on by the ACCC, the AER and other jurisdictional regulators.

Australian bond market issues do not make public all the terms on which the bonds are issued, so that the fees earned by the investment banks arranging and leading the issues are not available. Therefore, we have had to rely on Bloomberg data for international bond issues that were made by Australian firms. The 2004 study relied on by the ACCC and the AER also used this data source,[6] which the 2004 study considered to be:[7]

> ... a reasonable proxy for underwriting fees in the Australian bond market.

We searched the Bloomberg service database for those international debt issues that were made by Australian businesses from July 2004 up to the present (October, 2010). This period was chosen as it follows on from the period that was covered by the 2004 study (i.e. 1998 to June 2004). These debt issues by Australian businesses were made in the following three markets:

- US 144A private placement market
- US Reg.D market; and

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6 The Allen Consulting Group (December, 2004), *Debt and Equity Raising Transaction Costs – Final Report,* Report to The Australian Competition and Consumer Commission.

7 ACG (December, 2004), p. xviii.

- Eurodollar market.

We used Bloomberg's bond search function (SRCH) to identify all issues of fixed and floating rate bonds that were issued during the period from July 2004 to October 2010, providing us with a list of 3,131 bonds. From this list of bonds, we eliminated the following bonds:

- The bonds issued by banks or Government Business Enterprises (GBEs) were eliminated since banks operate in a specialised segment of the market, and make a large number of issues with high frequency (unlike the corporate bond market);
- Convertible bonds were eliminated because they have equity characteristics, and therefore their cost structure can be expected to partly reflect equity issue costs;
- Retail bond issues were eliminated as these are effectively the same as retail equity issues, and can therefore be expected to have higher costs;
- Bonds that are below investment grade (S&P rating below BBB-) were eliminated as it is well known that these incur higher selling costs than investment grade issues (which is reflective of the benchmark entity assumption of a BBB+ credit rating); and
- Bonds where issuance costs are not made publicly available, or have prospectuses which are not obtainable.

Only 25 bonds made their prospectuses public, where the arrangement/placement fees charged by the investment banks were revealed. We recorded the gross fees charged, and checked the Bloomberg data against the available prospectuses to ensure that the appropriate fee was being recorded.[8]

Arrangement/ placement fees vs 'underwriting fees'

We note that in the 2004 report relied on by the AER, the term 'gross underwriting fee' was applied throughout. However, it was explained that the term 'underwriting fee' was being used loosely (as this is the term used by Bloomberg) to describe activity that is better described as a fee for the placement of debt securities with buyers (i.e. a 'placement fee'). It distinguished the 'underwriting/placement fee' that it was attempting to measure using international data, from the normal risk-taking concept of 'underwriting' in the context of a traditional equity raising, where the stockbroker would in effect sell a put option to the vendor of the shares, guaranteeing that an agreed

[8] Of the 25 bond issues in the sample, 15 bond issues had prospectuses available, and these were found to be accurately reflected in the Bloomberg database.

amount of proceeds would be realised. That is, the 2004 study noted that:[9]

> *'Traditionally, as in stockbroking, the underwriting fee represented a reward for risk taking. If the issue were not sold, the underwriter would take it up and guarantee proceeds to the issuer. With "best efforts" underwriting, a "bookbuild" is undertaken to determine the market–clearing price. The services provided by the lead manager/arranger in terms of a bookbuild are as follows:*
>
> *– Prepares an Information Memorandum (IM) for investors;*
> *– Prepares the sales pitch for investors;*
> *– Prepares presentation materials;*
> *– Undertakes the roadshow, delivering the presentation to investors;*
> *– Facilitates the investors' due diligence process;*
> *– Oversees the bidding process by investors; and,*
> *– Communicates the clearing price for each tenor.*
>
> *The underwriting fee will have some fixed cost elements, such as the writing of an IM. However, there will also be variable cost elements that rise with the difficulty of the deal. Larger transactions will require greater effort as there will be more parties involved in terms of selling agents and investors.'*

In the interests of clarity, and based on market evidence, instead of referring to 'gross underwriting fees', we have used the terminology 'arrangement/ placement fee' to describe what Bloomberg and the 2004 study have termed 'gross underwriting fee'. Like the 2004 study, to this arrangement/ placement fee we have added:

- Legal, selling agent and roadshow costs – these are costs incurred to hire legal firms to prepare documentation, pay the costs of agents involved in selling the bonds, and the cost of roadshows (i.e. travel and accommodation for the sale team);
- Company and issue credit rating costs – Each company that wishes to issue bonds must have a credit rating provided by a credit rating agency, and each bond issue has a rating that relates the risk characteristics of that bond to the rating of the company; and
- Registry and paying fees (these are fees that are paid for registration of the bonds, and for payment of coupons to bondholders).

Costs associated with a company credit rating are essentially fixed, since they do not vary much depending on the size of the business. All other costs are variable in the sense that they vary proportionately with the number of issues (i.e. these costs are issue

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9 ACG (December, 2004), p.38.

specific). By separating the costs into fixed and variable components, we are able to estimate what the cost would be for the number of standard issues that would be required to raise the benchmark level of debt based on the firm's regulated asset base (RAB).

Methodological errors in the AER's approach

For Powerlink's transmission network revenue cap 2007-08 to 2011-12, the AER noted that it:[10]

'Considers that the methodology that the ACG [i.e. the 2004 study] has employed to derive debt raising costs is transparent and that an allowance based on current financial market data provides the best estimate for benchmark debt raising costs. By referencing current market evidence, this approach would provide a TNSP with revenues that would recover the efficient cost of delivering the service.'

However, we note two difficulties associated with the approach applied by the 2004 study, and were carried through:

- First, it is based on up-front costs (based on empirical observations), and divided by the term of bond assumed. This approach provides an under-estimate of the compensation required, as it does not take account of the opportunity cost of funds over the regulatory period, which must then be annualised.

- Secondly, the AER's approach appears to have miscalculated the basis points per annum equivalent of the company credit rating. Rather than a cost of 2.86 basis points per annum for one issue, the cost (assuming a credit rating fee of $50,000) should have been 0.59 basis points per annum, representing a difference of 2.27 basis points per annum. Registry fees were also over-estimated by the 2004 report by 0.15 basis points per annum.

In its recent decision on the Victorian electricity DNSPs, the AER has rectified the first issue by applying an annualised cost based on a WACC range of 9.40 percent to 9.95 percent.[11] However, the errors that were present in the 2004 study were carried through to the Victorian decision with respect to the company credit rating and the registry fees.

3.3.2 Equity raising transaction costs

The main sources of data with respect to equity raising transaction costs were Bloomberg and the Australian Stock Exchange. From Bloomberg we assembled a list of initial public offerings and equity

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10 AER (14 December, 2007), p.95.

11 AER (October, 2010), *Final Decision – Victorian electricity distribution network service providers – Distribution determinations 2011-2015*, p.369 and Appendix N, p. 479.

offers by Australian listed businesses from July 2004 to October, 2010. The list of 3,514 public offerings was reduced by eliminating:

- Initial public offerings – since businesses that are completely new to the market are likely to have greater selling costs than businesses with a market track record;
- Companies that do not have underwriting fees disclosed in Bloomberg – since there is no information;
- Companies that have underwriting fees that are not verifiable from prospectuses – since this reduces the transparency and verifiability of the data;
- Companies that have a market capitalisation of below $200m at the time of the secondary equity issuance – since low market capitalisation firms have less liquidity and are not well known in the market, the costs of making a secondary issue will be greater; and
- Issues that were considered outliers, because the issue may have incorporated an actual underwriting agreement (i.e. a put option) – since the value of the put option is likely to overwhelm the value of the pure transaction cost.

This process of elimination resulted in a final sample of 58 equity offerings for the period. We note that the study relied on by the AER employed a sample of 29 equity offerings for the period from 1998 to 2004, and was based on a size cut-off of $200 million. For the characteristics of the offers we referred to the original prospectuses, which were sourced from the ASX website. We noted the date of the offer, the expected proceeds, and the total cost of the issue.

3.4 Interviews with market participants

In order to update the empirical evidence pertaining to debt raising transaction costs we conducted interviews or obtained information from the following industry sources:[12]

- A major credit rating agency;
- Major legal firms undertaking transactional services in the context of debt raisings; and,
- Bank information relevant to registry costs.

[12] The information we obtained from industry sources was provided on a confidential basis. However, we would be willing to provide these sources to the AER on a confidential basis.

4 Benchmark debt raising costs

4.1 Introduction

In this chapter we report the results of our analysis of a benchmark debt raising cost for bond issues by Australian companies.

The context of bond issues suggests that arrangement/placement fees during the period prior to the global financial crisis (2004 to 2007) should have resulted in lower arrangement/placement fees. During the pre-global financial crisis period the bond market was experiencing a boom, with record issuance volumes and a situation of excess demand for bonds. In that environment, the cost of arrangement and placement of bond issues should have been relatively low, since investor demand for new issues was very high. In the period since the global financial crisis, higher perceptions of risk aversion have suppressed bond market demand relative to the earlier period. As a result, we would expect that the cost of arrangement and placement of debt has risen relative to the earlier period.

We now turn to the empirical evidence, starting with an analysis of bond issue characteristics, and follow this with an examination of international bond issue cost data.

4.2 Bond issue characteristics

The 2004 study that was relied on by the AER examined data for bond issues by Australian infrastructure businesses over the period from 1998 to 2004. It found that they issued debt with a median term of 7 years, and a median issue size of $175 million. We examined Bloomberg data for Australian infrastructure businesses over the period from 2004 to 2010. For this period we identified a total of 61 domestic infrastructure bond issues. The main findings are summarised in Table 4.1 below.

Table 4.1: Domestic bonds issued by infrastructure companies in Australia, 1998-2010

	ACG 1998 – 2004	2004 – 2010
Number of bonds	55	61
Total debt	$11,317m	$16,824m
Average issue size	$206m	$276m
Median issue size	$175m	$250m
Average term (years)	7	10.04

Source: Bloomberg and ACG (2004), p. 39

Table 4.1 shows that the median size of bond issue has risen from $175 million to $250 million over the more recent period. We note that the AER has recently also concluded that an issue size of $250 million is appropriate at the current time.[13] We also found that the median term of issue has risen from the 7 years, to 10.04 years in the more recent period.

The finding of a larger standard bond issue size of $250 million compared with the previous finding of $175 million has implications for the cost structure (in basis points per annum) of issuing a bond. With the bond issue size being 42 percent higher, unless the 'other' costs of issuance per bond have risen by the same proportion, the issue cost in basis points per annum would be expected to decrease.

4.3 Arrangement/ placement fee observed in international bond issues

We have found that the transparency of Australian bond deals in the Australian market has not improved since 2004. The arrangement and placement fees charged by Australian investment banks are still not made available.

However, information on arrangement/ placement fees charged by banks to Australian companies issuing bonds in international markets is available from Bloomberg. This is the data source that was investigated by the 2004 study, and has been considered an objective and robust source by the AER.[14] Details of these international bond issues by Australian companies are provided in Appendix A.

In the Bloomberg database, for the period from July 2004 to October 2010 we could identify 38 international bond issues by Australian companies where the arrangement/placement fees were identified in the prospectus. From this sample we eliminated 13 bond deals that were convertible notes, retail bond issues, or where the issuing company had a below investment grade credit rating. This left a sample of 25 bond deals, compared with the sample of 30 bonds used in the 2004 study. The bond arrangement/ placement fees were converted to basis points per annum, and annualised using a generic WACC of 10 percent.

The findings are summarised in Figures 4.1 and 4.2 below, with arrangement/ placement costs shown by bond issue size and term respectively. In Figure 4.1 we find that the average annualised arrangement/ placement fee was 11.7 basis points per annum for the whole sample, but 7.2 basis points per annum for the sample

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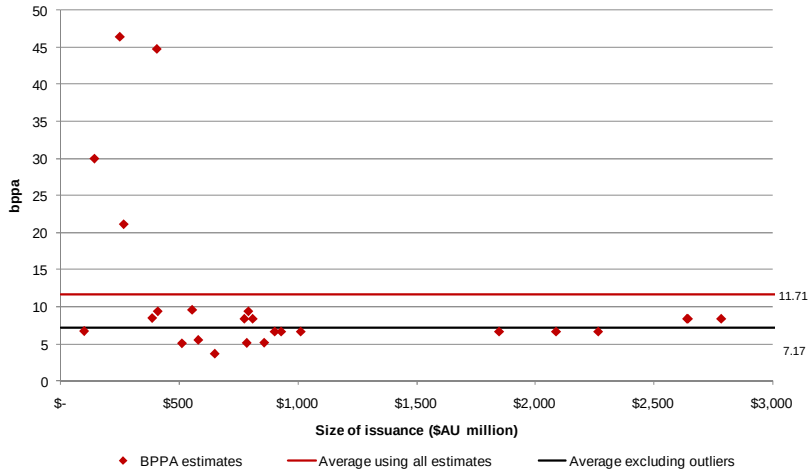
13 AER (October, 2010), *Final decision - Victorian electricity distribution network service providers, Distribution determination 2011-2015*, Appendix N, p. 479.

14 AER (October, 2010), Appendix N, pp. 478-9

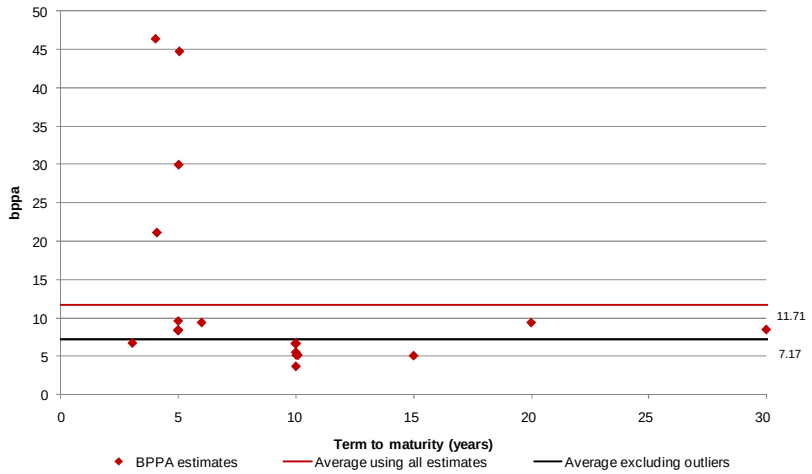
excluding four extraordinarily large costs (ranging from 21 to 45 basis points per annum). We excluded consideration of these four issues on the grounds that they are outliers.[15] For the group excluding these four bonds, there was no discernible relationship between the annualised issue cost and size of issue.

Figure 4.1: Arrangement/placement fees paid in Australian international bond issues, 2004/05-2010, by size of issue



Source: Bloomberg

Figure 4.2: Arrangement/placement fees paid in Australian international bond issues, 2004/05-2010, by term of issue



Source: Bloomberg Note: There is a bunching of observations at a term of 10 years to maturity, giving the appearance of fewer observations in Figure 4.2 compared with Figure 4.1

[15] Details for these outlier bonds (Telstra, Leightons and Toyota Finance) are shown in Appendix A.

Figure 4.2 below shows the same annualised arrangement/ placement fees as in Figure 4.1, but arranged by term to maturity. We find no discernable relationship between the annualised cost and term to maturity.

In conclusion, since we have not found a relationship between arrangement/ placement fees and size or term, we recommend a benchmark of 7.2 basis points based on the average for 21 bonds within the normal range of experience.[16].

4.4 Other elements of the cost structure

The other elements of the cost structure are costs apart from arrangement/ placement fees. We have examined the other elements of the bond issuance cost structure by reference to interviews and communication with various industry participants, including a credit rating agency, legal firms and investment banks. The results are summarised in tables 4.2 and 4.3 below. The fee structures have increased relative to the costs identified by the 2004 study relied on by the AER.

- Legal fees, agent's/dealers counsel and roadshow costs – These are the costs charged by legal firms for preparing documents for the bond issue, including for the agents/dealers engaged by the bank to help market the issue. Roadshow costs are disbursements made for travel and accommodation in the course of a roadshow to market a bond issue to investors.
    - A major law firm informed us that these legal and roadshow fees are in a range of $130,000 to $195,000.
- Credit rating fees and agency costs are broken down into the following categories:
    - Initial credit rating – This is the fee to establish a credit rating (approximately $70,000 according to a credit rating agency)
    - Annual surveillance fee – This is the fee charged by the rating agency to maintain the credit rating each year (approximately $55,000 according to a credit rating agency)
    - Bond program fee – This fee is charged by the credit rating agency to establish a framework for the credit analysis of a number of bonds that are to be issued (approximately $50,000 according to a credit rating agency)

[16] That is, excluding outlier bonds.

- Up-front bond issue fee – This fee is charged by the credit rating agency when a new bond is issued (a credit rating agency informed us that this is currently approximately 4.5 basis points per annum, which is rebateable against the program fee).

- Registry costs are charged by bond registry organisations, which are engaged in registering investors in a bond:
  - Initial set up costs are to compensate for establishing a registry service for a bond (a bank analysing alternative registry services for bonds in the Australian market noted that this is currently approximately $4,000).
  - An annual fee is charged by the registry organisation for its continued services (a bank analysing alternative registry services for bonds in the Australian market noted that this is currently approximately $9,000).

- Agent's out-of-pocket costs – These are the out-of-pocket costs charges by the agents of a bank undertaking the bond issue (a bank has informed us that these costs are currently in the range of $10,000 to $15,000). These costs include travel and accommodation, venue hire, printing etc.

Table 4.2: Other debt raising transaction costs, 2010

Cost item	Estimated value	Company or bond specific	Source
Issuer's legal counsel	$100K - $150K	Bond	Legal firm
Agent's/Dealer's counsel	$20K - $30K	Bond	Legal firm
Agent's Out-of-Pocket	$10K - $15K	Bond	Bank
Credit ratings agency cost			
Initial credit rating	$70K	Company	Rating agency
Annual surveillance fee	$55K	Company	Rating agency
Bond program fee	$50K	Company	Rating agency
Up-front bond issue fee	4.5 bp (rebateable against Program fee)	Bond	Rating agency
Registry costs			
Initial set up costs	$4K	Bond	Bank
Annual fee	$9K	Bond	Bank

Source: As stated

In addition to the costs identified by the 2004 study relied on by the AER, we have identified costs to compensate agents/dealer's counsel and agent's out-of-pockets. Market participants have advised that these costs (relating to the agents/dealers who are

engaged to assist in selling the bonds in the market) are real and applicable.

4.5 Methodology for estimating debt raising transaction costs

In this section we bring together our findings based on the methodology outlined earlier, which is essentially the same methodology that was applied in the 2004 study relied on by the AER, but updated for the most recent market evidence. Table 4.3 summarises the results based on a $250 million standard issue size, a 10 year term calculation base (consistent with a 10 year term), and an assumed 7.2 basis points per annum arrangement/ placement fee for Powerlink.

For a total issuance of $4,000 million, this approach provides a total cost allowance of 9.7 basis points per annum. For the 16 issues required to fund Powerlink's bond program, the transaction cost allowance required is 9.1 basis points per annum.

Table 4.3: Standard benchmark for MTN Issues (basis points per annum) based on $250 million issue size and 10 year issuance term

Fee	Fee basis	1 Issue	16 Issues
Amount raised	Multiples of median MTN issue size	$250m	$4,000m
Arrangement/ placement fees	Bloomberg for Aust. Intl. Issues	7.2	7.2
Issuer's legal counsel	$150,000/issue	0.89	0.89
Agents'/dealers counsel	$30,000/issue	0.18	0.18
Agents' Out of Pockets (estimated)	$15,000/issue	0.09	0.09
Company credit rating	$70,000	0.41	0.03
Credit rating annual fee	$55,000	0.22	0.01
Issue up-front fee	4.5 bp/issue	0.67	0.67
Registry Up-front fee	$4,000/issue	0.02	0.02
Registry annual fee	$9,000/issue	0.04	0.04
Total cost (bppa)		**9.7**	**9.1**

Source: PwC

4.6 Conclusions

Correcting the errors in the 2004 study, and based on international bond issue data that the AER considers to be reliable, we have recommended a benchmark arrangement/placement fee of 7.2 basis points for Powerlink. This is consistent with the AER's assumption, which was applied in its recent decision relating to Victorian electricity DNSPs.

Our benchmark survey of bond issues has shown that the standard bond issue size of domestic infrastructure businesses has increased from $175 million to $250 million. However, the 'other' costs of bond issues have also risen. Based on our analysis of bond issuance costs, we recommend a 9.1 basis points per annum allowance for Powerlink's debt program of $4,000 million.

5 Equity raising costs

5.1 Introduction

Two major questions that need to be addressed to estimate equity raising transaction costs are:

- How much equity needs to be raised (that is, how much of the capital expenditure cannot be financed from internal funds)?
- What is the unit cost that equity injection, in turn requiring a view about how much can equity can be raised through a dividend investment plan and how much needs to be raised through a seasoned equity offering?

Again, under the benchmark regulatory framework it is not the actual costs that a company incurs that are relevant to the AER, but rather the costs that would be incurred by a business that is in the same circumstances as the regulated business and that has the regulatory benchmark level and form of finance.

In this chapter we examine how the ACCC/AER applied its methodology to estimate how much equity needs to be raised, as discussed in the 2007 regulatory review of Powerlink,[17] and subsequent regulatory reviews.

To address the second question, we examine the fee structure evidence for equity offers in the Australian market since the global financial crisis. Many firms found their capital structures to be too dependent on debt, and there have been a number of seasoned equity offers for debt reduction purposes.

5.2 The 2004 study

The 2004 study (undertaken by ACG) noted that internally generated funds obtained from retained earnings or Dividend Reinvestment Plans (DRPs) 'are generally applied to smaller capital expenditure items associated with organic growth of a business.' [18] On the other hand, rights issues, placements and equity offers would generally be applied to raise funds for a major acquisition or a major capital expenditure program. With respect to regulated infrastructure, the 2004 study concluded:[19]

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17 Australian Energy Regulator (14 June, 2007), *Decision – Powerlink Queensland transmission network revenue cap 2007-08 to 2011-12.*

18 ACG (2004), p.68.

19 ACG (2004), p.69.

> *There can be instances of regulated businesses where incremental capital expenditure is very lumpy and a significant equity injection is necessary, as the notional capital structure would be breached for a considerable period (or expected debt covenants associated with the notional capital structure would otherwise be breached).... If a rights issue (or other SEO) were found to be required, ACG recommends a benchmark transaction cost of 3%, adding the amount of the SEO transaction costs to the capital base (RAV) and depreciating over the life of the assets purchased with funds raised by the notional, benchmarked SEO.*

To justify its recommendation of a 3 percent allowance for SEO transaction costs, ACG relied on prospectus data for a sample of 29 Australian equity offerings that raised $11.8 billion between 1998 and 2004 (an average of $409 million per issue). For this sample, the average SEO cost as a percentage of expected proceeds was close to 3 percent.

5.3 Quantum of equity – assumption about dividends

Due to high growth rates in its operating region, Powerlink has a large capital expenditure program relative to most Australian infrastructure providers. Powerlink is therefore one of the few Australian infrastructure providers that will require notional equity raisings to maintain its notional 60 percent gearing level. As shown in section 5.5 below, Powerlink will require an additional allowance for equity raising costs due to its large capital expenditure program in the regulatory period from 2012/13 to 2016/17.

Equity raising costs in Powerlink's regulatory review

The AER examined the capital expenditure program for Powerlink Queensland's transmission network revenue cap 2007-08 to 2011-12, and concluded that an allowance of $8.6 million should be provided for equity issuance transaction costs.[20] This conclusion was based on a notional amount of $285.3 million in additional equity being required over the revenue cap period. However, the value of this notional new equity requirement was determined by the AER's critical assumption that a benchmark infrastructure provider with Powerlink's operating characteristics would drop its dividend payout rate, and hence drop its dividend yield to 3.5 percent, rather than make additional equity offers.

If the assumed dividend rate was higher, which is what would be expected for a regulated infrastructure business, a higher allowance

[20] AER (14 June, 2007), p.105.

for equity issuance transaction costs would be required. For example, ACG, in a report commissioned by Powerlink, recommended that a dividend yield of 8 percent should be assumed, as this was more reflective of yields observed for regulated infrastructure businesses.[21]

The AER's assumption that a dividend yield of 3.5 percent is appropriate for Powerlink was based on benchmarking that it undertook of ASX listed companies that had a relatively high capex growth rate of 9.2 percent on average. The companies included a number of mineral and resources businesses (BHP Billiton, Rio Tinto and Zinifex) and materials businesses (Bluescope Steel, Alcoa). Whilst noting that these firms were not similar to Powerlink, the AER stated that 'they have some similarities in terms of capex growth rates that are comparable to Powerlink and operate as direct service providers.'[22] Finding that its group of 'comparables' had a relatively low dividend yield of 3.5 percent, the AER commented that this appeared reasonable since these firms would be retaining profits to fund capex.

Response to AER on Transgrid

In the subsequent case of Transgrid's revenue cap assessment ACG critiqued the AER's position on the dividend yield of a high capex regulated infrastructure business.[23] ACG made the point that infrastructure businesses attract a specific group of shareholders who value high dividend yields, citing an empirical study by Impson, which noted that the electricity industry 'has a shareholder clientele that invests in it for its generous dividends.'[24] Furthermore, Impson found that the share price of regulated infrastructure businesses responded more negatively to a dividend cut than the share price of non-regulated businesses.[25]

ACG noted that in September 2007 UBS had found that a group of 11 Australian businesses with significant regulated infrastructure activities showed a dividend yield of 8.6 percent. It also found empirical evidence that contradicted the AER's propositions that regulated infrastructure businesses would reduce their payout ratio and dividend yield in order to undertake capex:

- Several of the businesses in the AER's comparator sample issued equity during the period of high capex spending, and

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21 ACG (5 February, 2007), *Estimation of Powerlink's SEO transaction cost allowance – Memorandum.*

22 AER (14 June, 2007), p. 100.

23 ACG (9 May, 2008), *Transaction costs of raising equity finance: the dividend yield assumption,* Report to TransGrid.

24 Impson, Michael, (2000), "Contagion Effects of Dividend Reduction or Omission Announcements in the Electric Utility Industry,*The Financial Review*, Vol.41, pp. 121-136.

25 Impson, Michael (1997), 'Market reaction to dividend decrease announcements: Public utilities vs. Unregulated industrial firms,' *The Journal of Financial Research*, Vol. 20, pp. 407-422.

as a whole they did not drop their dividend payout rate. Their dividend yield fell because their share prices were rising in response to their high capex programs;

- Envestra was maintaining a high dividend payout policy and high dividend yield, and made several equity issues while maintaining a high dividend payout ratio, rather than reducing the payout ratio; and

- Eastlink, which was a listed business attracting a high dividend clientele was paying a regular dividend (with a dividend yield of 4.9 percent) even though it had not yet earned revenue.

Equity raising costs in the subsequent Transgrid and Transend regulatory reviews

These issues were re-considered in the subsequent revenue cap reviews of TransGrid and Transend. In its draft decision on TransGrid, the AER argued that an 8.6 percent yield translated into an implied payout ratio in excess of 100 percent of profits for the benchmark regulated business. The AER acknowledged that while its sample of comparator firms was not ideal, there were no directly comparable firms from which to develop an average dividend yield.[26] However, the AER noted that trust structures are often employed by infrastructure businesses, and these may have different dividend policies to more conventionally structured firms. Finally, the AER asserted that dividend yields are unstable, and therefore not suitable for benchmarking. In response to these issues, the AER suggested that it was preferable to make an assumption about the benchmark dividend payout ratio, rather than the dividend yield.

The AER decided that a dividend payout ratio of 70 percent of notional profit after tax should be assumed in modelling the requirement for additional equity issues and therefore the value of equity raising transaction costs required.[27] By assuming a payout ratio of 70 percent in its modelling, the AER found that TransGrid did not require additional equity raisings, and therefore did not require an allowance for equity raising transaction costs.

The AER engaged a consultant, Associate Professor John Handley, to comment on the issue of whether it is appropriate to assume a 70 percent payout ratio. Handley responded that in his opinion, 'the modelling should be consistent with the assumption that the firm maintains the benchmark gearing ratio at the end of each period and dividend policy provides for the full distribution of imputation credits

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[26] AER (31 October, 2008), Draft decision – *TransGrid transmission determination 2009-10 to 2013-14*.

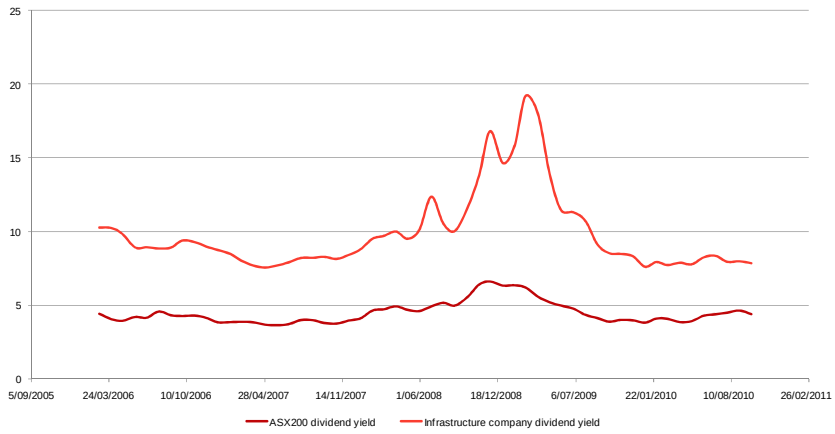
[27] AER (31 October, 2008), Draft decision – *TransGrid transmission determination 2009-10 to 2013-14*. P.144.

each period.'[28] While Handley's advice showed disagreement with the AER's previous position that a 70 percent payout ratio should be assumed, in the Final Decision on Transend the AER responded by assuming a 100 percent payout ratio, but then assuming a dividend reinvestment rate of 30 percent of the dividends paid.[29] The AER applied a benchmark rate of 1 percent to the equity assumed to be raised through dividend reinvestment (which was in turn assumed to be determined by the 70 percent target dividend payout ratio rather than by yield).

Empirical evidence on the dividend yield

The dividend yields of infrastructure businesses have historically been significantly higher than for the market as a whole. In Figure 5.1 below we show that while there has been a narrowing of the differential between the market's dividend yield, and that of infrastructure businesses, the gap is still significant. Over the period from 2006 to 2010, excluding the period of the global financial crisis (2008 and 2009), we found that the average and median dividend yield of Australian infrastructure businesses was 8.41 percent. This compares with a level of 4.1 percent for the market as a whole (proxied by the ASX200 Index). Detailed information on the companies used, individual company dividend yields and the process we used to select relevant companies can be found in Appendix C.

Figure 5.1: Dividend yields – ASX 200 vs regulated infrastructure, 2006-2010



Source: Bloomberg

From Figure 5.1, it is apparent that, apart from the period of the global financial crisis, contrary to the assertion of the AER, market

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28 John C. Handley (12 April, 2009), *A Note on the Costs of Raising Debt and Equity Capital'*, Report prepared for the Australian Energy Regulator, pp. 33-34.

29 AER (28 April, 2009), *Final Decision - Transend Transmission Determination 2009-10 to 2013-14*, p. 110.

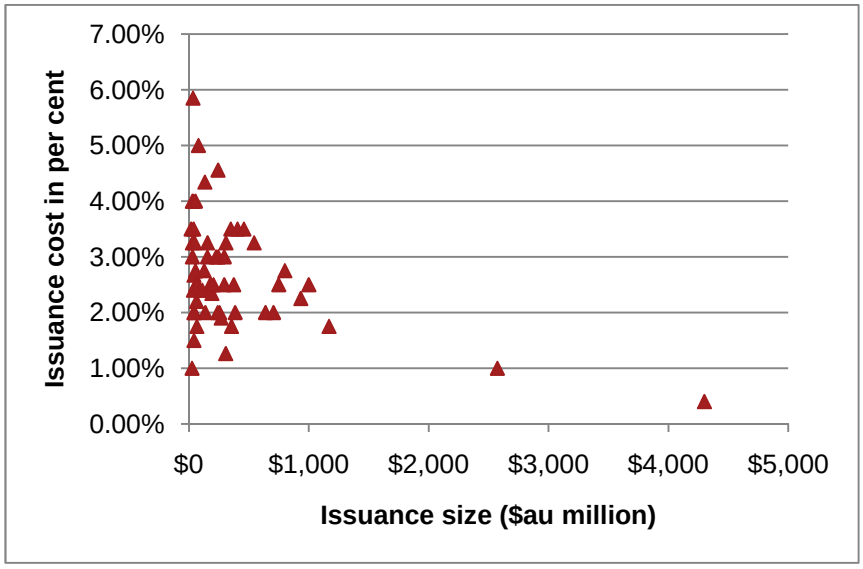
evidence shows that the dividend yield is a relatively stable parameter. Hence, it is a parameter that is well suited to determining the amount of dividends that would be paid by a benchmark regulated infrastructure business.

In summary, we consider that a dividend yield for infrastructure businesses of 8.4 percent should be applied as the benchmark to determine Powerlink's equity raising cost requirements.

5.4 Unit cost of raising equity

As discussed above, we accessed the Bloomberg database for evidence of equity offers that had been undertaken by Australian listed companies from 1 July 2004, up to 22 September 2010. This provided a sample of 3514 equity offers, which was reduced to 58 equity offers that were issued by businesses with a market capitalisation of greater than $200 million. These 58 equity offers raised a total of $21.05 billion. The details about this data are provided in Appendix B. As shown in Figure 5.2, there is a significant element of scale economies in equity offering costs, with some smaller issues costing up to 5.85 percent, and very large issues (of $2 billion to $4.5 billion) costing less than 1 percent.

Figure 5.2: Equity issuance costs, 2004 – 2010 (market cap greater than $200 million)



Source: Bloomberg

In Table 5.1 below we find that the average cost of equity raisings was 2.7 percent of the expected proceeds. This is a slightly lower cost than was found in the 2004 study. However, when the equity offers below $250 million are considered, the median and average costs approach 3 percent. It is also worth noting that a considerable number of equity offers in recent years have been associated with debt reduction rather than raising money for new investment. The transaction costs associated with raising equity for debt reduction

are likely to be lower than when raising funds for new investment, since the merits of the new investment do not need to be explained to investors. This is a factor that was noted in the 2004 study.[30] On the basis that equity offering requirements for regulated businesses are likely to be less than $250 million in value, we would recommend that a 3 percent allowance for SEO costs be maintained.

Table 5.1: SEO costs (as percentage of expected proceeds) by issue size, 2004 - 2010

Amount raised	Average
All	2.69%
Less than $500 million	2.83%
Less than $250 million	2.92%
Less than $100 million	2.96%

Source: Bloomberg

5.5 Dividend Reinvestment Plans

The AER has assumed that 30 percent of dividends issued by regulated utility businesses will be returned in a dividend reinvestment plan (DRP). We have investigated plans that were used by energy utilities over the period since 2000 based on dividend payment data from Bloomberg, and plan details available in the Appendix 3B announcements that listed companies provide to the ASX. These announcements contain the price and quantity details pertaining to new equity issues by listed companies.

The results in Table 5.2 below show that based on the full dividend paying history of these firms since 2000, the DRP amount received has averaged at 17.7 percent of the dividends paid, while for actual DRPs that have been instituted by these companies since 2007, the DRP proportion has been 32.7 percent. Since there are gaps in DRP programs, this suggests that assuming an average 32.7 percent return of dividends on a continuing basis will over-estimate the DRP component of long term funding.

[30] ACG (December, 2004), p.65.

Table 5.2: Percentage of distributions returned in dividend reinvestment plans to 2010

	Div. Data from this date	% of dividend payments with DRP	% returned based on full dividend history	% returned for actual DRPs since 2007
DUET	23 Dec 04	100%	24.5%	24.3%
Envestra	11 May 00	50%	24.4%	45.2%
APA	4 Dec 00	53%	25.7%	33.3%
SP AusNet	8 Jun 06	40%	9.4%	23.5%
Spark	5 Sep 07	14%	4.4%	37.3%
Average			**17.7%**	**32.7%**

Source: Bloomberg and 'Appendix 3B' announcements, which listed companies are bound to submit to the ASX, detailing the terms of new equity issues that have been made.

Taking account of the data for dividend reinvestment plans by energy utilities over the period since 2000, we consider that an appropriate benchmark assumption is that 18 percent of dividends paid will be returned through a dividend reinvestment plan.

5.6 Application of the methodology to Powerlink

In Table 5.2 we apply the methodology to determine the equity raisings required based on Powerlink's draft post tax revenue model for the period 2012/13 to 2016/17. In the model dividends are assumed to be paid based on a benchmark requirement to provide a 8.4 percent yield to investors. This is a key determinant of the cash flow available to pay for the equity proportion of the new capital expenditure, resulting in requirements to fund a total of $1,211 million with new equity over the regulatory period.

Based on our own findings, we have assumed that 18 percent of the dividend paid out is returned through a dividend reinvestment plan at a cost of 1 percent of the amount raised for Powerlink's revenue reset. The remainder of the new equity required by Powerlink is assumed to be obtained through new equity issues undertaken at a cost of 3 percent of the amount raised. This results in a required total allowance of $31.5 million over the regulatory period for new equity raising costs. This is a total (undiscounted) amount of allowance over the whole period.

Assuming a generic regulatory WACC of 10 percent, we calculate that the up-front allowance required to compensate Powerlink for the transaction costs of new equity funding over the regulatory period is $24.7 million. Discounting this value a further 6 months (to 31 December, 2011) at a generic CPI (assumed to be 2.5 percent) provides a value of $24.4 million.

Table 5.3: Powerlink – new equity requirements for 2012/13 to 2016/17 assuming a benchmark dividend yield of 8.4 percent and 18 percent of dividends paid being returned by a DRP

$ million	2012/13	2013/14	2014/15	2015/16	2016/17
Assets:					
Opening RAB	6,537	7,406	8,189	8,797	9,428
Capex	943	866	709	754	636
Nominal regulatory depreciation*	74	83	100	122	131
Closing RAB	7,406	8,189	8,797	9,428	9,933
Cash flow:					
Revenue	955	1,073	1,187	1,293	1,386
Less, Opex	185	202	217	236	253
Less, Interest	391	443	489	526	563
Less, Tax payable	63	69	75	79	86
Less, debt repayment on regulatory nominal depreciation	45	50	60	73	79
Less, dividend paid	220	249	275	296	317
Cash for equity portion of capex	52	60	70	82	87
Equity portion of capex to be funded	**377**	**346**	**283**	**302**	**254**
Less cash available	52	60	70	82	87
Total new equity required:	325	287	213	219	167
Sources of funding:					
Dividend Reinvestment Plan	40	45	50	53	57
Seasoned equity offerings	286	242	163	166	110
New equity raised	325	287	213	219	167
Total new equity raised:					1,211
Cost of funding:					
Seasoned equity offerings	8.6	7.3	4.9	5.0	3.3
Dividend Reinvestment Plan	0.4	0.5	0.5	0.5	0.6
Annual allowance	**9.0**	**7.7**	**5.4**	**5.5**	**3.9**
Total allowance					**31.5**
Upfront allowance:	**24.7**				
Allowance at 31 Dec 2011 (discounted 6 months at 2.5% CPI)	**24.4**				

Source: Powerlink and PwC assumptions. Note 1 *Nominal regulatory depreciation is net of indexation. Note 2: Upfront allowance calculated at the assumed 10% WACC. Note 3: Discounting of the upfront allowance to 31 December was undertaken using a generic CPI assumption of 2.5%.

Appendices

Appendix A Bond data used

Table A.1 – International bonds issued by Australian companies

Year of issue	Company	Issue size ($AU million)	Term of issuance	Annualised[31] Bppa
2004	Telstra Corporation	858.22	10.02	5.19
2005	BHP Billiton	809.83	5.00	8.41
	Woolworths	409.84	6.00	9.42
	FBG Finance limited	902.29	9.98	6.69
	Woolworths	580.60	10.00	5.57
	BHP Billiton	1,012.28	10.00	6.68
	Telstra Corporation	784.81	10.09	5.17
	FBG Finance limited	386.70	29.98	8.51
2006	Toyota Finance Australia	405.84	5.05	44.68
	Leighton Finance	142.99	5.02	29.94
	Sydney Airport	650.00	10.00	3.71
	Lendlease	512.03	15.00	5.11
2007	BHP Billiton	774.67	5.00	8.41
	Fairfax media group	554.76	5.00	9.61
	BHP Billiton	929.60	10.00	6.68
2008	Toyota Finance Australia	100.00	3.05	6.76
	Toyota	250.00	4.04	46.32

31 The annualisation process converts the up-front issuance cost to stream of constant payments which is then converted to an annualised yield. This is based on a benchmark WACC of 10 per cent, and is estimated so that the NPV of the stream of payments is equivalent to the up-front issuance cost.

	Finance Australia			
	Telstra Corporation	266.67	4.10	21.12
	Rio Tinto	2,639.08	5.00	8.41
	Rio Tinto	1,847.36	10.00	6.68
	Rio Tinto	791.72	20.00	9.40
2009	BHP Billiton	2,642.31	5.00	8.41
	Rio Tinto	2,782.80	5.00	8.41
	BHP Billiton	2,264.83	10.00	6.68
	Rio Tinto	2,087.10	10.00	6.68

Source: Bloomberg and PwC's analysis

Appendix B Equity offerings data used

Table B.1 – Australian company equity offerings and costs 2004-2010 – Market capitalisation greater than $200m

Company	Expected proceeds (m)	Total cost (m)	Cost as % proceeds
Valad Property Group	$19	$0.68	3.50%
Regis Resources Limited	$26	$0.26	1.00%
Kimberly Diamond Company	$28	$1.14	4.00%
Hastie Group Limited	$29	$0.94	3.25%
Pacific Brands Limited	$30	$0.90	3.00%
Progen Pharmaceuticals Limited	$34	$2.00	5.85%
Arasor International Limited	$34	$1.37	4.00%
Australian Pharmaceutical Industries	$38	$0.92	2.40%
Valad Property Group	$40	$1.41	3.50%
Watpac Limited	$41	$0.82	2.00%
Trinity Limited	$42	$0.63	1.50%
Bravura Solutions Limited	$43	$1.15	2.67%
Western Areas NL	$46	$0.91	2.00%
Hastie Group Limited	$48	$1.56	3.25%
IBA Health Limited	$55	$5.82	4.00%
Aspen Group	$55	$1.50	2.75%
Rubicon Japan Trust	$58	$1.45	2.50%
ING Real Estate Community Living Fund	$64	$1.40	2.20%
SP Ausnet	$66	$1.16	1.75%
Rubicon Europe Trust	$68	$1.70	2.50%
Perseus Mining Limited	$79	$3.96	5.00%
Alesco Corporation	$94	$2.25	2.40%
Australian Pharmaceutical Industries	$112	$2.68	2.40%
James Fielding Fund Management	$129	$3.53	2.75%
Resource Pacific Holdings	$134	$5.81	4.34%
Macquarie Countrywide Trust	$137	$2.74	2.00%
Lynas Corporation Limited	$155	$4.66	3.00%
ING Industrial Fund	$156	$5.06	3.25%

Rubicon Europe Trust	$178	$4.44	2.50%
Rubicon Japan Trust	$184	$4.61	2.50%
Alesco Corporation	$192	$4.50	2.34%
Prime Infrastructure	$205	$5.13	2.50%
Pacific Brands Limited	$226	$6.78	3.00%
Onesteel limited	$240	$4.80	2.00%
Allco Finance Group	$244	$11.10	4.56%
DUET Group	$244	$7.32	3.00%
MFS Limited	$256	$5.12	2.00%
Transfield Services Limited	$270	$5.13	1.90%
Lynas corporation Limited	$295	$8.84	3.00%
Spark Infrastructure	$295	$7.38	2.50%
Record Realty	$308	$3.88	1.26%
SP Ausnet	$309	$10.06	3.25%
Boart Longyear limited	$350	$12.26	3.50%
Australian Pipeline Trust	$356	$6.23	1.75%
CSR Limited	$375	$9.36	2.50%
Prime Infrastructure	$386	$7.72	2.00%
Boart Longyear Limited	$406	$14.20	3.50%
AWB Limited	$459	$16.05	3.50%
ING Industrial Fund	$544	$17.69	3.25%
Onesteel Limited	$639	$12.78	2.00%
Macquarie Countrywide Trust	$706	$14.12	2.00%
Dexus Property Group	$749	$18.73	2.50%
Macquarie Communications Infrastructure Group	$800	$22.00	2.75%
AGL	$933	$21.00	2.25%
Centro Retail Trust	$1,000	$25.00	2.50%
Suncorp - Metway	$1,169	$20.46	1.75%
Wesfarmers	$2,573	$25.73	1.00%
Telstra	$4,300	$17.20	0.40%
Average	$363	$7.03	2.69%
Median	$181	$4.73	2.50%

Source: Bloomberg and ASX

Appendix C Dividend yield data used

The companies we selected are infrastructure companies drawn from the ASX200 index.

Table C.1 – ASX200 and Australian infrastructure company dividend yields

Company	Historical average yield[1]	Excluding GFC (wide definition) average yield[2]	Excluding GFC (narrow definition) average yield[3]
ConnectEast Group	7.98%	7.38%	8.95%
Intoll Group	7.05%	5.21%	6.45%
Transurban Group	7.15%	7.38%	7.85%
Australian Infrastructure Fund	7.13%	6.29%	6.54%
MAP Group	9.45%	8.94%	8.88%
Telstra Corporation	8.21%	8.26%	7.85%
APA Group	9.63%	7.99%	8.88%
Hastings Diversified Utilities Fund	10.92%	9.14%	9.79%
DUET Group	11.44%	10.52%	10.40%
Envestra Limited	11.10%	9.43%	10.20%
Prime Infrastructure	23.50%	8.56%	11.61%
Spark Infrastructure	11.62%	10.36%	10.75%
SP Ausnet	10.21%	9.50%	9.88%
Average	**10.41%**	**8.38%**	**9.08%**
Median	**9.54%**	**8.41%**	**8.92%**
ASX200	4.47%	4.10%	4.25%

[1] We have used data from February 2006 to September 2010. February 2006 was chosen as the starting date because it was the date when the first observation for the ASX200 dividend yield was available. Some companies did not have historic data from February 2006 onwards, therefore we have used the data from when those companies began reporting dividend yields. Arithmetic average shown.

[2] Wider GFC period defined as July 2007 and December 2009. Arithmetic average shown.

[3] Narrower GFC period defined as 15 September, 2008 (collapse of Lehman Brothers) and December 2009. Arithmetic average shown.

Source: Bloomberg

Jeff Balchin

Principal

☎ Tel: (03) 8603 4973
☎ Fax: (03) 8613 5575
jeff.balchin@au.pwc.com

Jeff is an economist in the PwC Economics team. Jeff has over 17 years of experience in relation to economic regulation issues across the electricity, gas, airports, ports and water industries in Australia and New Zealand. He has advised governments, regulators and major corporations on issues including the development of regulatory frameworks, regulatory price reviews, licensing and franchise bidding and market design. Jeff has also undertaken a number of expert witness assignments. His particular specialities have been on the application of finance principles to economic regulation, the design of incentive compatible regulation and the drafting and economic interpretation of regulatory instruments. His experience is outlined below in more detail.

Prior to joining PwC Jeff was a Director with the Allen Consulting Group, where he built a consulting practice with a strong specialisation in the economic regulation of price and service and prior to that he held a number of policy positions in the Commonwealth Government.

Qualifications and professional/business associations

- Bachelor Economics (First Class Honours) University of Adelaide

Relevant Experience

- *Strategic advisor to regulators and regulated businesses* – he has been a strategic adviser on economic regulation issues to regulators during a number of major price reviews, including the Victorian 2008, 2003 and 1998 gas distribution price reviews, the Victorian 2006 and 2001 electricity distribution price reviews, the South Australian 2006 gas distribution price review and the South Australian 2005 electricity distribution price review. He has also been retained by regulated businesses to provide strategic advice during major regulatory reviews, including to the electricity transmission businesses during the AEMC review of the revenue setting rules (2005/6), Jemena during its current gas and electricity reviews and a major NZ energy business and airport.
- *Finance issues* – he has provided advice on a range of finance issues to regulators and regulated businesses, including a major review of equity betas for the ACCC in 2001, a further study for the Victorian ESC in 2008 and then for the network industry associations in 2008/9. He has also advised on benchmark cost of debt and credit rating issues for regulated entities. He has provided extensive advice to NZ utilities in relation to deriving an allowance for taxation that is consistent with the various 'benchmark' assumptions made by the regulator. He has also provided substantial advice in relation to regulatory asset valuation and depreciation issues. He has also advised in relation to cost allocation issues (and the related issue of treatment of related party arrangements) to regulators and regulated businesses.
- *Cost benefit studies* – he has advised in relation to methodological issues in quantifying the economic costs and benefits of electricity transmission investment during applications for conversion of unregulated transmission interconnectors, and more recently advised the AEMC on how the CPRS and expanded RET should be treated when assessing the costs and benefits of projects. He has also advised in relation to the economic benefits of IT projects to make expanded use of advanced metering infrastructure.
- *Incentive regimes* – he has advised on the design of incentives for regulated businesses to minimise cost, undertake efficient service improvement and on the design of price controls (an objective of which is to create an incentive for firms to structure prices efficiently).

Matthew Santoro

Principal

☎ Tel: (03) 8603 4707
☎ Fax: (03) 8613 5607
Matthew.santoro@au.pwc.com

Matthew has over 20 years of corporate and institutional banking experience, including 12 years at Deutsche Bank and eight years at Citibank. At Deutsche Bank he held various senior banking positions covering the origination, structuring and syndication of debt facilities.

Matthew is experienced in a wide range of financing and fundraising transactions, in particular in the area of acquisition financing, leverage financing, re-financings, project and property financing and procurement of debt capital markets instruments across the Australian, European and USA markets. His experience includes dealings with credit rating agencies such as Standard & Poor's and Moody's

Prior to joining PwC, Matthew jointly established and was Joint National Head of KPMG's debt advisory practice for a period of five years. During that time, Matthew advised numerous companies on their debt and capital management needs, including the procurement of debt across a very broad industry sector. Client list includes CSL, David Jones, Boom Logistics, Pacific Brands, Healthscope, Hastings Funds Management, Future Fund, Australian Super, Deutsche Asset Management, SE Water, Computershare, ORIX Corporation, Toll Holdings, and Tabcorp

Matthew's experience covers capital management and financing applications for a wide range of structures, asset types and industries. Matthew has over 20 years of debt markets experience with extensive dealings and established relationships with key participants in the capital markets such as banks, borrowers, fund and fixed interest managers, private equity investors, credit rating agencies, legal firms, etc.

Qualifications and professional/business associations

- Bachelor Economics, University of Adelaide
- Affiliate, Institute of Chartered Accountants

Relevant Experience

- Bachelor Economics, University of Adelaide
- Debt structuring, arranging and procurement, onshore and offshore
- US Private Placement, Australian and European Bond markets
- Capital management
- Credit rating agencies

Michael Lawriwsky

☎ Tel: (03) 8603 4983
☎ Mobile: 04 0000 2355
☎ Fax: (03) 8613 5586
michael.lawriwsky@au.pwc.com

Director

Michael is a Director in PricewaterhouseCoopers' (Australia) Economics group, within the firm's Advisory practice.

Michael was a director of the Allen Consulting Group from 2005 to 2008, and advised regulators, governments and businesses on a wide range of issues. Prior to that he was a director-corporate finance in ANZ Investment Bank, and ANZ Securities. As an investment banker over 15 years Michael was involved in numerous corporate advisory assignments for government, regulator, GBE and corporate clients. He advised on over $10 billion of bids in the Australian energy and transport sectors.

Qualifications and professional/business associations

- Bachelor Economics (Honours), Ph.D., University of Adelaide
- Fellow, Australian Society of Certified Practicing Accountants
- Adjunct Professor, Faculty of Business, La Trobe University

Relevant Experience

- *Advisor to regulators and regulated businesses* – he has been a strategic adviser on economic regulation issues to regulators during a number of major price reviews, including the Victorian 2008, gas distribution price review, the Victorian 2006 and 2001 electricity distribution price reviews, the South Australian 2006 gas distribution price review and the South Australian 2005 electricity distribution price review. He advised the Queensland Competition Authority in relation to a number of regulatory price reviews, including the Dalrymple Bay Coal Terminal, Queensland Rail (Coal), and the Gladstone Area Water Board. He has also advised regulated businesses during major regulatory reviews, including Jemena during its gas and electricity reviews and a major NZ airport and airport association.
- *Finance issues* – he has provided advice on a range of finance issues to regulators and regulated businesses, including a major review of equity betas for the Victorian ESC in 2008 and then for the network industry associations in 2008/9. He has also advised on benchmark cost of debt and credit rating issues for regulated entities. He has also provided advice in relation to regulatory asset valuation issues.
- *Capital structure reviews* – he has advised a number of non-government and government business enterprises, and government departments on capital structure issues. Clients have included SA Water and Melbourne Water.
- *Capital market raisings* – he has advised governments on share market floats in privatisations, and companies on capital market issues, including an on-market share buy-back, and hybrid securities.