Dalrymple Bay Coal Terminal: Corporate Costs

Report prepared by Stephen J Meyrick

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My name is Stephen Meyrick. I have prepared this report exclusively for use of Dalrymple Bay Coal Terminal Management Pty Ltd (DBCTM) in preparing its Draft Access Undertaking (DAU) for submission to the Queensland Competition Authority; and, if DBCTM so chooses, for DBCTM to provide this report in support of the DAU. The report must not be used for any other purpose.

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1 Executive summary

1. This report provides an estimate of the efficient level of corporate costs for the Dalrymple Bay Coal Terminal (DBCT), for consideration by Dalrymple Bay Coal Terminal Management Pty Ltd (DBCTM) in preparing its Draft Access Undertaking for submission to the Queensland Competition Authority (QCA).

2. Chapter 2 of the report outlines my general approach to the task. In short, I have used three separate methods to arrive at (largely) independent estimates of corporate costs:

   - **High level benchmarking**, in which I have reviewed regulatory judgements on total corporate costs for a range of infrastructure providers. This analysis is documented in Chapter 3.
   - **Component benchmarking**, in which I have used benchmarks derived from a cross-section of listed companies to develop estimates of the major components of corporate costs. This analysis is documented in Chapter 4.
   - **Bottom-up benchmarking**, in which I have built up an estimate of corporate costs from an assessment of individual cost items. The starting point for this analysis is a breakdown of costs included in the QCA's determination of corporate costs for DBCT in 2005. This analysis is documented in Chapter 5.

3. The results obtained using each of these approaches are set out in Table 1 below.

Table 1: Summary of results

Method	Estimated corporate costs (2016-17)
High level benchmarking	$11.6million
Component benchmarking	$8.2million
Bottom up approach	$7.8million

4. In my opinion, the median of these three results is the best available benchmark of corporate costs. My estimate of efficient corporate costs that would be incurred in 2016–17 by a Brisbane-based listed company with DBCT as its sole asset is therefore $8.2 million. This does not include an allowance for the QCA levy.

2 Introduction

2.1 Scope of the report

5. I have been asked to provide an estimate of the efficient level of corporate costs for the Dalrymple Bay Coal Terminal (DBCT), for consideration by Dalrymple Bay Coal Terminal Management Pty Ltd (DBCTM) in preparing its Draft Access Undertaking for submission to the Queensland Competition Authority (QCA).

6. In preparing this estimate, I have noted the decision of the QCA in its 2005 Final Report that, for regulatory purposes, the relevant costs are the costs that would be incurred by a Brisbane-based listed entity that had DBCT as its sole asset[1]. I have no reason to believe that, in forming its judgement on the Draft Access Undertaking, the QCA will depart from this view. The costs presented in this report are therefore the costs that, in my judgement, would be incurred by such an entity, operating efficiently.

7. DBCT operates under a more complex corporate structure. This inevitably means that these costs will vary in some particulars from the actual costs that have been incurred, or are likely to be incurred in the future, by DBCTM, or its parent Brookfield Infrastructure.

8. The estimates of corporate costs for a Brisbane-based listed entity that had DBCT as its sole asset have been developed independently using information drawn from a variety of third party sources, including the QCA's 2005 determination.

9. With the exception of the three items listed in paragraph 10, I have estimated all of the costs included in this report independently of actual levels of expenditure incurred by DBCTM.

10. The three exceptions relate to the component and bottom-up benchmarking estimates reported in Chapters 4 and 5. Forward estimates from the DBCTM 2017 budget were used as the basis for:

    - the allowance made for insurance costs;
    - the allowance made for consultancy costs; and
    - safety-related costs, including the provision of personal protective equipment.

[1] Queensland Competition Authority 2005, *Dalrymple Bay Coal Terminal: Draft Access Undertaking*: Final Report, April, p157.

2.2 Report structure

11. The definition of 'corporate costs' used in developing my estimate of corporate costs is discussed in Section 2.3 below. The details of how I have arrived at the estimate are set out in Chapters 3 to 5. Chapter 6 summarises the outcome of the analysis documented in Chapters 3 to 5, and presents my final estimate.

12. Details of the data sources used in developing the cost estimates, and of the procedures used in deriving the estimates, are provided in a series of attachments to the report.

2.3 Definition of corporate costs

13. The term ‘corporate costs’ does not have a precise and universally accepted precise meaning. However, to develop an estimate of the level of these costs, we need to have a clear idea of what costs are and are not included in that term.

14. As noted above, the QCA explicitly based its estimate of corporate costs on the costs that would be incurred by 'a Brisbane based listed entity' that is 'a stand-alone coal terminal operator'.[2]

15. The 2005 assessment of the DBCT Draft Access Undertaking also provides a detailed *de facto* definition of the range of costs that would be incurred as ‘corporate overhead costs’ by such an entity[3].

16. The consulting reports prepared and made publicly available during this process provide a detailed breakdown of corporate costs. Meyrick & Associates prepared two of these reports at the request of the QCA, and Ernst & Young prepared the other report at the request of Prime Infrastructure, which was the owner of DBCT at that time.

17. In Meyrick & Associates’ principal report to the QCA, it examined the cost items that were proposed for inclusion in corporate costs by Prime Infrastructure. Meyrick & Associates formed the view that the majority of the items proposed should be included as allowable corporate costs, but that a number of items should not be included. Details of these excluded items, which although small in number accounted for a large proportion of the total corporate costs as proposed

[2] QCA 2005, p157.

[3] This definition is ‘extensive’ in the technical sense: that it defines corporate costs not by identifying some characteristics common to all corporate costs, but by developing a list of the categories of cost that, by virtue of their inclusion in that list, are acknowledged as corporate costs.

by Prime Infrastructure, are set out in Meyrick & Associates' first report to the QCA.[4]

18. Ernst & Young undertook a review of Meyrick & Associates' principal report to the QCA at the request of Prime Infrastructure. The Ernst & Young report included a detailed breakdown of corporate costs.[5] This breakdown included all of the items accepted as corporate costs in Meyrick & Associates' principal report, and in addition included five items that were either (a) not included in Prime Infrastructure's original claim or (b) included in Prime Infrastructure's original claim, but rejected by Meyrick & Associates in its principal report[6]. After consideration of Ernst & Young's report, Meyrick & Associates provided the QCA with a supplementary report. In this report, Meyrick & Associates accepted that, taking into account the further information and submissions provided by Ernst & Young, the five additional items should be included in corporate costs.[7] At the end of this process, there was agreement on the nature of the costs that should be included in corporate costs for the DBCT, although differences of view remained on the amount that should be allowed for these costs.

19. The QCA in its decision did not explicitly endorse or reject the definition and categories of corporate costs arrived at through the process outlined above. However, neither in its Draft Decision nor its Final Decision did the QCA give any direct or indirect indication that it considered that any of the items included in the definitions presented in Meyrick & Associates' two reports should not be regarded as corporate costs. In its Draft Decision, the QCA proposed an amount for corporate costs that was equal to the value proposed in the principal report, to which it referred as the basis for its proposal[8].

20. In its Final Decision, the QCA noted the inclusion of certain additional cost categories in Ernst & Young's assessment of corporate overheads, and the

[4] Meyrick & Associates 2004, *Assessment of Prime Infrastructure Overhead Costs: Final Report*, report prepared for the Queensland Competition Authority, October, pp9-10. Subsequent citations of this document use the abbreviated form Meyrick 2004.

[5] Ernst & Young 2004, *Prime Infrastructure: Review of Corporate Overheads*, report prepared for Prime Infrastructure, December, Table 12,p p37-38. Subsequent citations of this document use the abbreviated form Ernst & Young 2004.

[6] The cost categories not included in Prime's original claim were depreciation on office furniture and fittings; and regulatory compliance costs. The cost categories included in Prime's original claim but rejected in my principal report to the QCA (being Meyrick 2004) were the costs of maintaining a credit rating for DBCT; distribution costs; and parking costs.

[7] Meyrick & Associates 2005, *Assessment of Prime Infrastructure Overhead Costs: Response to comment by Ernst & Young: Final Report*, report prepared for the Queensland Competition Authority, February, p14-15. Subsequent citations of this document use the abbreviated form Meyrick 2005

[8] Queensland Competition Authority 2004, *Dalrymple Bay Coal Terminal: Draft Access Undertaking*: Draft Report, October, p200. Subsequent citations of this document use the abbreviated form QCA 2004.

acceptance in Meyrick & Associates' supplementary report that costs of these types should also be included as corporate costs.[9] Although the QCA did not explicitly state that it accepted the amendments to the definition of corporate costs that were supported by both the Ernst & Young report and Meyrick & Associates supplementary report, the QCA noted the revisions made in the supplementary report without demur.

21. The list of corporate costs that emerged from this process is presented in Table 2.

Table 2: Cost items included in corporate costs

Cost Group	Included costs
Governance	Board expenses External audit
Staff expenses[1]	Salaries & wages Staff superannuation Recruitment costs Work Cover insurance Payroll processing Payroll tax Fringe Benefits Tax Staff training & seminars Conferences Staff amenities
Investor and external relations	Annual General Meeting Annual report Distribution expenses Share registry fees Newsletter ASX fees ASIC fees Credit rating
Finance	Accounting and taxation advice Bank fees and charges Internal audit

[9] Queensland Competition Authority 2005, *Dalrymple Bay Coal Terminal: Draft Access Undertaking*: Final Report, April, p157.The QCA specifically notes the inclusion of the costs of maintaining the DBCT credit rating; distribution costs; and the ongoing costs of regulatory compliance, It is silent with respect depreciation of office furniture and parking costs. But these are both minor costs, and in my opinion unlikely to be contentious. Subsequent citations of this document use the abbreviated form QCA 2005.

Cost Group	Included costs
Office and general	Insurance Consultancy fees Legal costs Computer/IT maintenance and software Office rentals Depreciation Catering Cleaning Sundry Couriers Gifts & donations Travel - Airfares & Accommodation Entertainment Printing Postage & Stationery Telephone/Fax/Internet Subscriptions
Price and access determination	Regulatory costs

Notes: 1. Corporate staff only

2.4 Method of estimating corporate costs

22. There is no single correct method for estimating the corporate costs of a hypothetical entity. Every method has its particular strengths and weaknesses, and each will be subject to considerable uncertainty. The most robust strategy is to derive estimates using several different methods, and to consider the results of all of the methods jointly in arriving at a final estimate.

23. In estimating corporate costs for the hypothetical entity, I have applied three methods which use different lines of research and analysis:

- **High level benchmarking**, in which I have reviewed regulatory judgements on total corporate costs for a range of infrastructure providers. This analysis is documented in Chapter 3 below.
- **Component benchmarking**, in which I have used benchmarks derived from a cross-section of listed companies to develop estimates of the major components of corporate costs. This analysis is documented in Chapter 4 below.
- **Bottom-up benchmarking**, in which I have built up an estimate of corporate costs from an assessment of individual cost items. The starting point for this analysis is a breakdown of costs included in the QCA's determination of

corporate costs for DBCT in 2005. This analysis is documented in Chapter 5 below.

24. My choice of approaches has been guided in part by customary practice, and in part by the availability of the data required to implement the approach effectively.

25. After estimating corporate costs by each of the methods, I then consider the three outcomes jointly and reach my estimate of the corporate costs for the hypothetical Brisbane-based, publicly listed infrastructure provider with the Dalrymple Bay Coal Terminal as its sole asset for the financial year 2016/2017. This assessment is documented in Chapter 6 below.

3 Method 1: High level benchmarking

3.1 Discussion of high level benchmarking

26. The high level benchmarking approach involves two main activities:

- Collection and analysis of data on total corporate costs for a range of enterprises ('comparators') that are considered to be sufficiently similar to the hypothetical entity to yield useful information about the entity's likely costs. As the corporate costs of real companies will not be identical, this will normally yield a range of costs.
- An assessment of the point within this range of costs that provides the best indicator of the likely costs of the hypothetical company.

3.2 Selecting comparators

27. The first challenge in applying this approach is to identify enterprises that are reasonably comparable to the hypothetical entity.

28. No two companies are exactly alike. But, ideally, comparators would be identical to the hypothetical company in all respects that could materially affect the level of costs to be benchmarked. They would, for example, be in the same industry, conduct their business in a similar location, have the same corporate structure and operate at a similar scale. In practice, this is rarely possible, and it is certainly not possible in this case. There is no Brisbane-based publicly listed infrastructure company that has a coal terminal as its sole asset. As a matter of practical necessity, it has therefore been necessary to adopt a less stringent approach to the selection of comparators.

29. Fortunately, corporate costs are likely to vary less widely across industry and location than many other elements of operating costs. Many of the drivers of corporate costs, such as compliance with corporate legislation and good governance requirements, are likely to be similar on companies engaged in a range of industries with a broadly similar character. It is therefore reasonably to benchmark corporate costs across infrastructure sectors: to compare, for example, the corporate overheads of a gas pipeline owner with those of the owner of a rail track.

30. It is also commonly the case in benchmarking exercises that lack of information precludes the inclusion in the set of comparators of some enterprises that would desirably be included. Again, this has been an issue for the current task: 'corporate costs' does not generally figure as an item (or a collection of items) in

the public accounts of companies. The selection of comparators has therefore been driven in part by the availability of relevant information.

31. In selecting the comparators, a trade-off has been made between three considerations:

- ensuring that the companies in the set of comparators are similar as possible to the hypothetical company (in practice, this has for example meant that all of the comparators are the managers of infrastructure assets);
- ensuring that the sample of companies is large enough for the results of the benchmarking to be robust and not unduly influenced by unidentified characteristics particular to an individual company; and
- ensuring that the information for each included company is reliable and that the range of costs included in 'corporate costs' is reasonably consistent.

32. One outcome of this trade-off has been that all of the comparators that I have used are regulated enterprises. Regulatory processes oblige a level of disclosure of the size and composition of costs that is rarely available otherwise. Regulatory judgements, and documents prepared or disclosed during regulatory processes, are as a consequence the most readily available — and arguably the most reliable — source of information on corporate costs for infrastructure enterprises.

33. My review of available regulatory judgements identified a substantial number of instances in which the level of total 'corporate costs' was explicitly identified in the relevant regulatory judgement or in other material disclosed as part of the regulatory process. In other cases, the process identified several items that could be combined to provide an estimate of corporate costs broadly consistent with the definition set out in Table 2 above.

34. In total, I identified fourteen regulatory judgements for which adequate information was available. All of these judgements relate to infrastructure companies that sell infrastructure services under contract to a relatively limited number of customers. However, they span a range of infrastructure sectors and ownership models, and vary considerably in scale of operations.

35. Ideally, the set of comparators would include a number of listed infrastructure enterprises that operated a single asset, or a single cluster of physically related assets located within a defined geographical area (such as a connected network of pipelines). However, I was unable to locate the required information for any

enterprises that met this specification. All of the privately controlled[10] infrastructure assets for which information was obtained were ultimately controlled by a listed entity; but in all cases the ultimate listed entity controlled a portfolio of physically unrelated assets rather than a single asset.

36. There were also several enterprises that controlled only a single asset or cluster of physically related assets; but all of these enterprises were in public ownership.

37. The comparator set therefore includes both state-owned enterprises that have only a single asset (or cluster of assets), and listed infrastructure enterprises that hold a number of assets.

38. In selecting the comparators, priority was given to infrastructure companies that either:

- operated infrastructure that provided services to the bulk minerals export industry; or
- operated infrastructure that was located in Queensland.

39. A brief description of the comparators included and their key qualitative characteristics are provided in Attachment A and Attachment B.

3.3 Data

40. The revenue, asset values and corporate costs for each of the selected comparators is summarised in Table 3 below. Details on the sources and derivation of these values is provided in Attachment C to this report. Figure 1 below depicts the relationship between corporate costs and revenue of the selected comparator companies, while Figure 2 below depicts the corporate costs and asset values of the selected comparator companies.

41. The data presented in Table 3 below excludes insurance. Although insurance forms a significant part of corporate overheads, the cost of insurance is clearly very dependent on the nature of the assets controlled by the entity, their value, and the conditions in which they operate.

42. Where insurance has been included in corporate costs in the source documents, I have therefore deducted it from total corporate costs.

[10] I will use the term 'controlled' as an inclusive term to refer to both assets that are held freehold and assets that are held under a long-term lease.

Table 3: Key benchmark data for comparator companies

Company	Year	Revenue ($m)	Asset Value($m)	Corporate cost exc insurance ($m)
1.Aurizon	2013-14	850.1	4,432.9	46.2
2.ATCO	2014-15	155.0	1,077.7	17.5
3.Prime Infrastructure (DBCT)	2004-05	87.3	849.0	4.1
4.Westnet Rail	2009-10	450.1	2,468.4	10.9
5.ARTC (Hunter Valley)	2010-11	191.1	863.7	11.3
6.TPI (Pilbara rail infrastructure)	2011-12	173.0	1,051.6	7.1
7. Powerlink	2012-13	784.9	6,762.5	14.2
8. Transend	2009-10	164.7	1,009.2	8.7
9. Dawson Joint Venture	2007-08	1.0	7.6	0.2
10. APT Petroleum Pipelines	2012-13	48.5	417.4	3.6
11. Envestra	2011-12	57.8	333.3	3.2
12. APT Allgas	2011-12	61.0	440.2	3.3
13. APA Gasnet	2012-13	85.4	621.9	8.6
14. Linkwater	2011-12	205.7	2,301.5	12.8

3.4 Analysis

43. A benchmarked corporate cost may be expressed in several different ways:

- It may be expressed in absolute terms: that is, one can estimate the value of corporate costs for the hypothetical company directly from the absolute value of corporate costs for comparators. In this case, the benchmarked value will be independent of the scale of the enterprise, however this is measured.
- It may be expressed as a ratio: that is, one can benchmark corporate costs as a proportion of some measure of the scale of the enterprise. In this case, the benchmarked value will increase in proportion to an increase in the measure of the scale of the enterprise.
- It may be expressed as a 'hybrid' benchmark that includes a combination of these two elements: in this case, the benchmarked value will increase with the measure of the scale of the enterprise, but it will increase less than proportionately.

44. The hybrid benchmark can be expressed as:

Corporate cost = a + b * (some measure of scale)

where 'a' is the fixed component of corporate costs and

'b' is a parameter that reflects the extent to which corporate costs vary with scale

45. Which form of expression is the most appropriate depends on whether the comparator companies are of a similar scale to the hypothetical company and whether there is a systematic relationship between scale and the level of corporate costs. In particular, the inclusion of a scale-related element is preferable if:

- the comparator companies vary significantly in their scale of operation; and
- there is a clear relationship between the level of corporate costs and appropriate measures of scale.

46. The data presented in Table 3 above shows that the first of these conditions is clearly met – that is, the scale of operation of the selected comparator companies is varied.

47. The data also confirms my expectation that corporate costs increase systematically with both revenue and asset values. I have graphed the relevant data from Table 3 in Figure 1 and Figure 2 below. The graphs show that, in both cases, there is a tendency for corporate costs to increase with the scale of the enterprise.

48. Formal statistical analysis, the results of which are documented in Attachment 4 to this report, confirms that scale effects account for a significant proportion of the variation in corporate costs amongst comparator companies.

Figure 1: Corporate costs (excluding insurance) and revenue

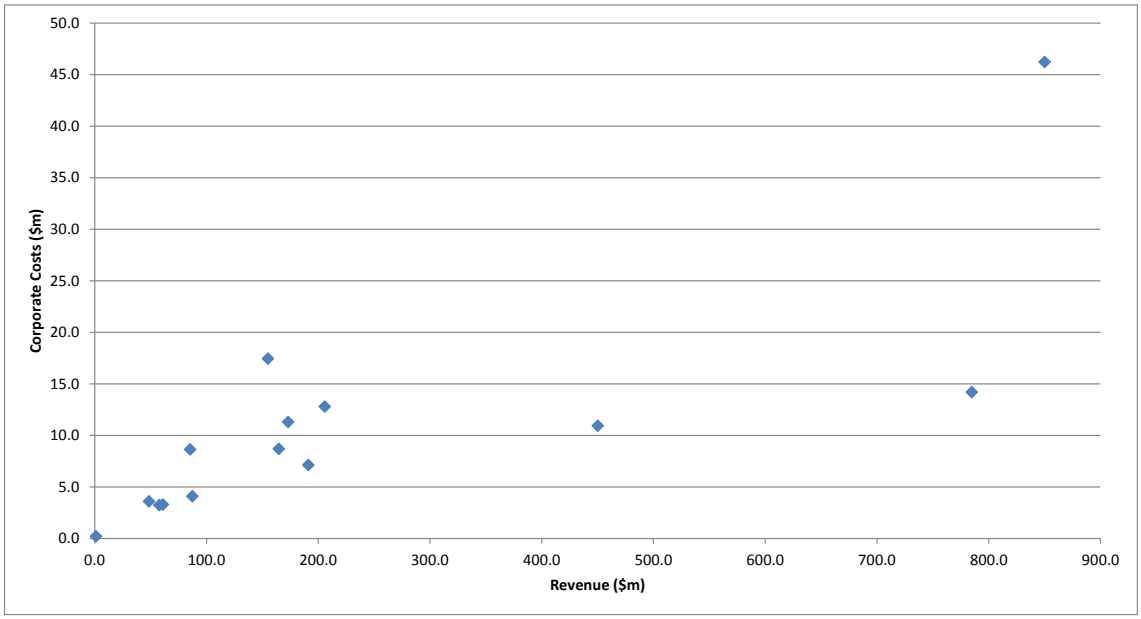
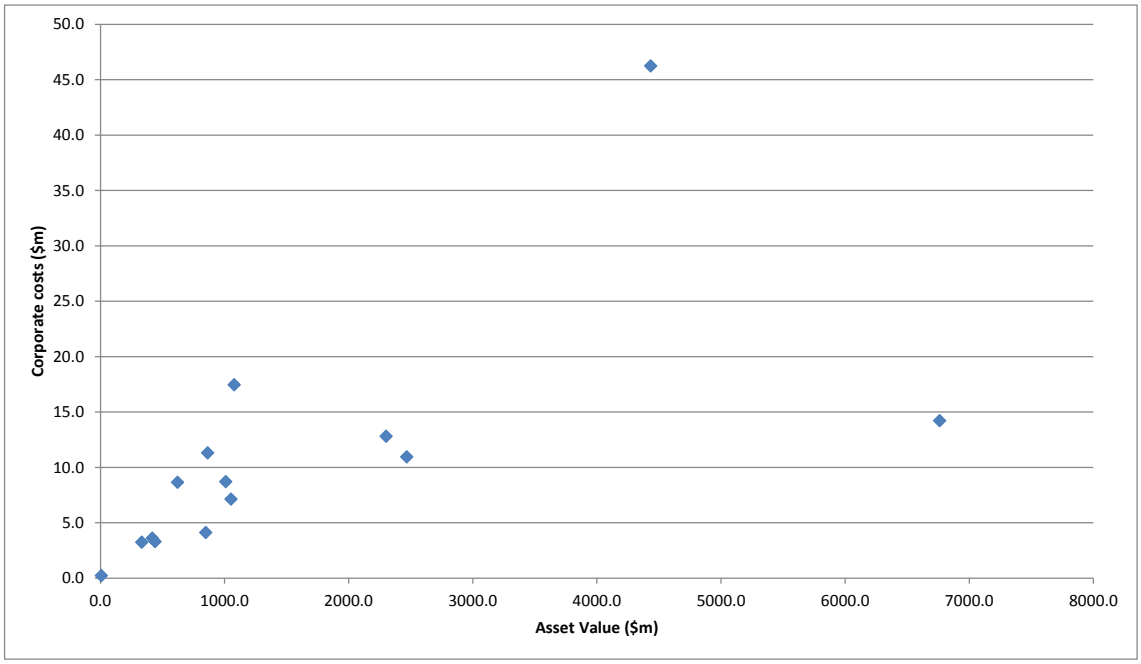


Figure 2: Corporate costs (excluding insurance) and asset values



49. It is also necessary to decide which of the two available relationships is most likely to provide good guidance on the corporate costs for the hypothetical entity – the relationship between corporate costs and revenue or the relationship between corporate costs and asset value. Because the data relates to regulated infrastructure companies, and the regulatory process ensures that revenues to a significant extent reflect asset values, there is a strong correlation between the two ratios. However, this correlation is not perfect, and the results of the analysis will therefore be determined to some extent by which relationship is used.

50. My choice has been guided in part by convention, and in part by an examination of the data. In my experience, it is more common to use benchmarks based on revenue in work of this type. This is at least in part because, whereas revenue can be readily and unambiguously measured, there are many complexities involved in defining asset value; and because there are complexities there is much scope for inconsistency in the way assets are valued. I note also that the ratio benchmarks used in the report by KPMG on corporate costs for the gas industry, on which I draw extensively in Chapter 3, all use revenue as the denominator[11].

51. The statistical analysis documented in Attachment D to this report shows that both revenue and asset values are significantly correlated with corporate costs. However, the correlation of corporate costs with revenue is considerably stronger.[12]

52. I have therefore focused on the relationship of corporate costs to revenue.

53. The 'best fit' relationship between corporate costs and revenue was estimated using linear regression analysis. The results of the analysis are documented in Attachment E to this report.

54. The analysis yielded the following 'hybrid' benchmarking equation, which I have adopted for the purposes of this report:

Corporate cost = $3.0 million + 3.3% of revenue.

[11] KPMG 2011, *Corporate cost benchmarking for the Roma to Brisbane gas pipeline*, report prepared for APA Group, October. Subsequent citations of this document use the abbreviated form KPMG 2011.

[12] The adjusted R-squared value for a linear regression of corporate costs against revenue was 0.59, as against 0.33 for the regression against asset values.

3.5 Corporate cost estimate: high level benchmarking

55. I have applied the equation set out in paragraph 54 above to obtain an estimate of the efficient corporate costs for the DBCT in 2016-17. This obviously requires some estimate to be made of the terminal revenue for that year; and this in turn will depend on the outcome of the current process, and so cannot be known with certainty at present. I have assumed revenue 2016–17 of $260 million, which, on the basis of information provided to me by DBCTM, I understand to be the current terminal revenue (excluding handling charges).

56. Applying the benchmarking equation defined at paragraph 54 this revenue yields an estimate for corporate costs of $11.6 million, equal to 4.47% of corporate revenue.

57. Table 4 below provides a comparison of the ratio of corporate costs to revenue for the hypothetical enterprise (as estimated in paragraphs 55) with the ratios for each of the enterprises in the comparator set.

58. Table 4 also provides summary statistics calculated from the data for the individual comparators: the minimum and maximum values, the 25th and 75th percentile values, and the median.

59. It is apparent that the overall range of values for the ratio of corporate costs to revenue is very wide: from a minimum of 1.81% to a maximum of 21.83%. However, as is quite common in benchmarking exercises, this is a consequence of the presence of a small number of 'outliers' (or extreme values) that may be reflective of characteristics peculiar to an individual company rather than general tendencies. One common way of eliminating this effect is to focus on the inter-quartile range: the band within which the middle 50% of observations fall — or, expressed more formally, the range between the 25th percentile and the 75th percentile.

60. Table 4 below shows that this range is much narrower, extending from 4.45% to 8.10%. The median value for the ratio of corporate costs to revenue is 5.51%.

61. At 4.47%, the estimated ratio of corporate costs to revenue for DBCT in 2017 lies close to bottom quartile of this range.

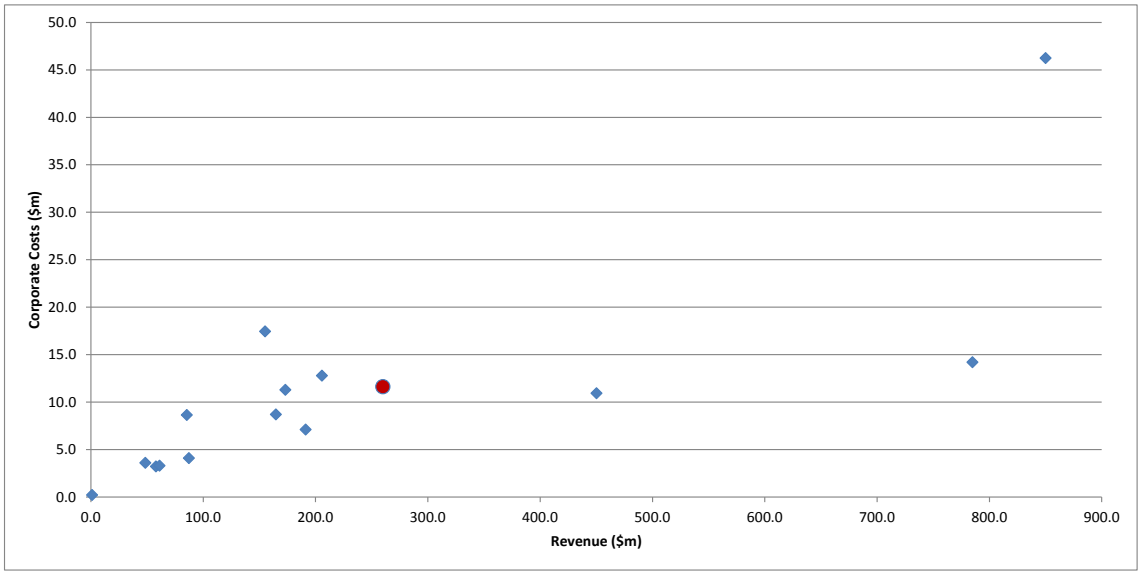
62. This compares with a ratio of corporate costs to revenue for the DBCT estimated in the QCA's 2005 decision of 4.70%.

Table 4: Corporate costs as a percentage of revenue

Company	Corporate cost as % of revenue
Aurizon (2014)	5.44%
ATCO Gas	11.26%
DBCT (Prime 2005))	4.70%
Westnet Rail	2.43%
ARTC (Hunter Valley)	3.72%
TPI (Pilbara rail infrastructure)	6.53%
Powerlink	1.81%
Transend	5.28%
Dawson Joint Venture	21.83%
APT Petroleum Pipelines (RTB)	7.42%
Envestra	5.59%
APT Allgas	5.41%
APA Gasnet	10.12%
Linkwater	6.22%
	1.81%
Maximum	21.83%
Mean	6.98%
First quartile	4.45%
Third quartile	8.10%
Median	5.51%
DBCT (2017, estimated)	4.47%

63. To allow easy visual comparison of this estimate with the level of corporate overheads allowed in other regulatory judgements, Figure 3 below re-presents the data included in Figure 1 with the estimated corporate overheads costs for DBCT obtained using the high level benchmarking approach (DBCT is shown as a red dot in the figure).

Figure 3: Corporate costs—DBCT and other regulated infrastructure



3.6 Sensitivity testing

3.6.1 Proportional relationship

64. The regression analysis used to estimate the relationship between corporate costs and revenue does not rule out the possibility that the relationship may actually be proportional[13].

65. Nevertheless, I have chosen to use a 'hybrid' relationship to estimate corporate costs. Use of a 'hybrid' benchmark implies that corporate costs do increase with scale, but not proportionately. I have chosen to do this in part because a listed entity with little or no revenue would still need incur a significant level of corporate costs in order to meet its legal and listing obligations. The form of the hybrid relationship reflects this.

66. However, as a sensitivity analysis, I have tested the impact on my estimate of corporate costs for DBCT of assuming that the corporate costs for a listed company with little or no revenue would be extremely small.

[13] This is indicated by the t-value for the intercept in the regression equation. This value is low, indicating that we cannot be very confident that the true value for the intercept is not zero, and that the apparent non-zero value is merely a result of random factors in the sample of comparator companies chosen. If the true value for the intercept is in fact zero, the corporate costs are simply proportional to revenue. The implications were tested by re-running the regression analysis while forcing the value of the intercept to zero.

67. I tested the implications of this possibility by undertaking a supplementary statistical analysis. That analysis, which forces a strictly proportional relationship between corporate costs and revenue, produced the relationship:

Corporate cost = 3.9% of revenue.

68. Applying this relationship to the estimated revenue base of $260 million provides an estimate for DBCT corporate costs of $10.1 million.

3.6.2 Omission of outliers

69. It is not uncommon in this type of work to remove from the data set particular observations that clearly lie outside the range of the bulk of the observations. My preferred approach is not to do this, as it is not easy to devise clear criteria for the exclusion of particular observations, and there is a risk that the selection will be guided by unconscious bias on the part of the analyst. Nevertheless, a case can be made for excluding obvious 'outliers'.

70. One possibility is that, in the case of these 'outliers', the observed data may overwhelmingly reflect particular characteristics of the individual company rather than the general, systematic relationships between attributes that we are trying to detect.

71. Another reason for removing outliers may be that some observations relate to companies that are very different in scale to the one of primary interest to us. We may be concerned that the relationships that a relationship that holds at and around the scale of the company of primary interest to us may not hold true when the scale of operation is so different.

72. By way of a sensitivity test, I have therefore repeated my analysis after removing from the data set:

- The observations for Aurizon or Powerlink (the revenue of these two companies is very much larger than the revenue for others in the data set);
- The observation for ATCO. Corporate costs for ATCO are, as a proportion of revenue, exceptionally high, and may reflect particular characteristics of this company rather than general structural relationships between corporate costs and revenue.

73. Re-estimating the equation presented in paragraph 54 using this reduced data set yields:

Corporate cost = $0.8 million + 5.1% of revenue.

74. Applying this relationship to the estimated revenue base of $260 million provides an estimate for DBCT corporate costs of $14.1 million in 2016–17.

3.7 Conclusion: High level benchmarking

75. Using the high level benchmarking approach, I estimate the corporate costs for stand-alone company with DBCT as its sole asset of $11.6 million.

76. This places the ratio of corporate costs to revenue for DBCT in the lower quartile of the ratios for the fourteen enterprises included in the comparator set.

77. Sensitivity tests using variations of the methodology produce values ranging from $10.1 million to $14.1 million.

4 Method 2: Component benchmarking

4.1 Discussion of the approach

78. The 'component benchmarking' approach involves three principal tasks:

- Defining a small number of major cost categories that will be benchmarked. Ideally, these categories would encompass all corporate costs. In practice, however, limitations on available information mean that this is unlikely to happen.
- Developing reasonable estimates for each category of cost.
- Making some allowance for corporate overhead costs that are not included in the high level cost categories. The benchmarking should, as far as possible, be designed to ensure that these costs comprise only a minor share of total corporate costs, so approximations based on broad assumptions will not materially affect the overall estimate of corporate costs.

4.2 Cost categories

79. The approach that I have adopted for the component benchmarking approach is based on that used by KPMG in modelling the corporate costs for a gas network operator.[14] This approach is broadly similar to that adopted by Ernst & Young in estimating corporate costs for the DBCT in 2005.[15]

80. The cost categories used by KPMG in its benchmarking were:

- Board of Directors
- Office of the Chief Executive
- Economic Regulatory Management
- External Relations
- Finance
- Information Technology
- Legal Counsel and Corporate Affairs
- Office Administration and Human Resources Management.[16]

81. Although these categories do not align particularly closely with the groupings used in Table 2 above, in my opinion the KPMG categories will capture the major cost elements included in the definition of corporate costs provided in Section 1.

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[14] KPMG, 2011.

[15] Ernst & Young 2004.

[16] KPMG 2011, p13.

I have used the categories defined by KPMG throughout this section, with the minor exception that I have combined Finance and IT costs into a single category.

4.3 Data

82. The KPMG study is, in my opinion, methodologically sound and sets out in some detail the basis on which each of its estimates are constructed. For some costs, and for some parameters that are used as the basis of cost estimates, I have formed the opinion that the estimates developed by KPMG are both soundly based and applicable to DBCT. In these cases, I have not re-examined the primary data sources on which KPMG has based its estimates — I have simply updated the estimates, where appropriate, to reflect changes in costs since the KPMG costs were compiled.

83. For several important cost categories, KPMG relied on data from a cross-section of listed companies. This applies to:

- total payments to non-Executive directors;
- CEO remuneration; and
- external audit fees.

84. This data used by KPMG is reproduced as Attachment E to this report.

85. Although I have followed closely the approach adopted by KPMG, I have not relied on data for the set of companies used by KPMG. As can be seen from Attachment E, none of the companies included in the KPMG data set has a revenue approaching the expected revenue for DBCT. Given the relationship between revenue and corporate costs established in the high-level benchmarking, this is likely to bias the analysis.

86. Additionally, the KPMG database includes companies from a very wide range of sectors, ranging from listed investment companies through to providers of gaming machines and information technology companies. It is arguable that the remuneration that is typical for the Board and CEO of (say) a listed investment company would be very different from the level of remuneration that would be typical for the manager of an infrastructure asset.

87. For these reasons, I have developed a new data set of twenty listed companies for the analysis of this report. These companies are all small- to mid-cap listed companies with revenues ranging from $22 million to $2,127 million: that is, from very roughly one-tenth of the expected revenue of DBCT to a little short of ten times that revenue. DBCT therefore sits well within the financial scale spanned by this data set.

88. Ideally, the data set would have focused exclusively on infrastructure companies. However, I was unable to locate suitable data on enough infrastructure companies operating at the appropriate scale. I have therefore included data from three sectors that are, in my view, reasonably reflective of the corporate space within which DBCT is located. The three sectors are:

- industrial companies that provide services to the mining sector;
- infrastructure companies; and
- energy companies

89. A full list of these companies, together with a brief description of their principal activity, is provided in Attachment F.

90. From the 2014 published Annual Reports of the each of these companies, I have extracted data on:

- Total payments to non-Executive directors;
- CEO remuneration; and
- Audit fees.

91. This information is summarised in Attachment G.

4.4 Analysis

4.4.1 Board of Directors

92. This category includes the salaries and on-costs of the Board of Directors as well as the cost of providing office accommodation for the Board.

Remuneration of non-executive directors

93. Figure 4 plots the board remuneration received by non-executive directors of each of the 20 companies in the data set against total company revenue. The total ranges from a minimum of $166,000 to a maximum of over $1,400,000[17]. However, this is the result of a few outliers at each end of the range. The inter-

[17] As Attachment A shows, while most of these companies report in Australian dollars, some report in US dollars and some in New Zealand dollars. I have converted amounts reported in foreign currency to Australian dollars using the following exchange rates: AUD1.000 = USD0.915; and AUD1.000 = NZD 1.103. These exchange rates are averages, over the period 1 July 2013 to 30 June 2014, of the monthly exchange rates for each of these to currencies, as downloaded from the website of the Reserve Bank of Australia, www.rba.gov.au on 5th August 2015.

quartile range is much smaller — from $333,000 to $683,000. The median value of total board remuneration in the sample is $534,000.[18]

Figure 4: Remuneration of non-executive board members and revenue

Note: Data points for industrial companies are show as blue dots; for energy companies, as orange squares; and for utilities, as green triangles. The red dot shows the revenue and estimated remuneration of non-executive directors for a Brisbane-based listed entity with DBCT as its sole asset in 2017.

94. Figure 4 shows a clear tendency for board remuneration to rise with corporate revenue at the lower end of the range. However, this relationship appears to break down beyond a certain scale: remuneration for the three companies with revenues in excess of $1billion pay similar levels of board fees to those in the $0.5billion to $1billion range.

95. In fitting a statistical relationship to estimate an appropriate level of board costs for a listed company with DBCT as its only asset, I therefore excluded companies with revenues in excess of $1 billion. Regressing board remuneration against revenue for the remaining companies yielded the relationship:

Board remuneration = $0.202 million + $967 per $1million of revenue

[18] Throughout this and the following chapter I have adopted the practice of rounding all estimates to the nearest one thousand dollars.

96. Applying this relationship to revenue for DBCT in 2016–17 of $260 million provides an estimate for board remuneration $453,000. This estimate is shown as the red dot in Figure 4.

97. Although the clear change in the relationship between board remuneration and revenue beyond a certain scale of operations makes exclusion of the largest companies from the estimation of this relationship appropriate, there is a significant element of subjectivity involved in deciding precisely where the cut-off should be. Although my judgement, based on inspection of Figure 4, is that the level of $1 billion is appropriate, I was aware that adopting this cut-off would mean that the exceptionally high Board remuneration paid by Boart Longyear ($1.4 million) would be included in the analysis. I had some concern that this could artificially inflate my estimate of appropriate board costs for DBCT.

98. By way of a sensitivity test, I therefore repeated the analysis including only companies with revenues of less than $0.5 billion, and re-calculated the appropriate level of board remuneration for DBCT on the basis of the revised equation. This yielded a value of $463,000. Given the inevitable uncertainty that surrounds such estimates, I do not regard this as materially different from the original estimate.

99. As a second sensitivity test, I repeated the analysis including all companies. The statistical fit was much poorer. But re-calculating the level of board remuneration for DBCT on the basis of the revised equation yielded a value of $482,000.

100. Given the inevitable uncertainty that surrounds such estimates, I do not regard either of these results as materially different from the original estimate.

101. Details of these statistical analyses for both are included as Attachment H.

102. I have developed high and low estimates for board remuneration by estimating the upper and lower bounds of the interval within which there is a 50% chance that board remuneration will fall. This procedure, which is set out in detail in Attachment H8, yields and a low estimate of $327,000 and an upper estimate of $579,000.

Office accommodation

103. In its benchmarking study, KPMG assumed the provision of one enclosed office space for the use of non-executive Board members. Drawing on Queensland government office accommodation guidelines (the details of which are provided in Attachment I), it assumed floor space of 15 square metres for this office. . I

regard these allowances as reasonable, and have adopted them without variation.

104. However, in computing accommodation costs, KPMG applies the gross face rental value for prime office space. This makes no allowance for the impact of incentives on the effective cost of office leases. Oversupply in the Brisbane office market in recent years has led to a marked increase in the use of such incentives, and their impact is now material. Using gross face rental values will therefore tend to overstate accommodation costs. I have therefore used effective net rental rates, which take into account the impact of these incentives.

105. According to Knight Frank, gross prime rental rates in the Brisbane CBD increased by 2.2% in the twelve months to May 2015 to $696 per square metre. However, leasing incentives have risen to an average of 36%, which have driven effective rental rates down by 1.6% over the same period to $445 per square metre.

106. Knight Frank's view is that rentals have now stabilised, and that modest increases can be expected in coming months: 'rental levels are expected to remain largely stable to April 2016 (up 1.5%) with modest growth of 3.1% forecast for the year to April 2017'.[19]

107. Taking this forecast into account, I have assumed rental costs for 2016–17 of 4% above present levels, or $463 per square metre. This figure, which I have adopted for the cost of office space throughout this report, leads to an estimate of accommodation costs for non-executive board members of $11,000 per annum.

Summary of costs for Board of Directors

108. The resulting estimate for Board of Directors costs is summarised in Table 5 below.

Table 5: Estimate of Board of Directors costs

Item	Lower bound	Central Estimate	Upper bound
Directors fees and on-costs	$327,000	$453,000	$579,000
Accommodation for directors	$11,000	$11,000	$11,000
Total	**$338,000**	**$466,000**	**$590,000**

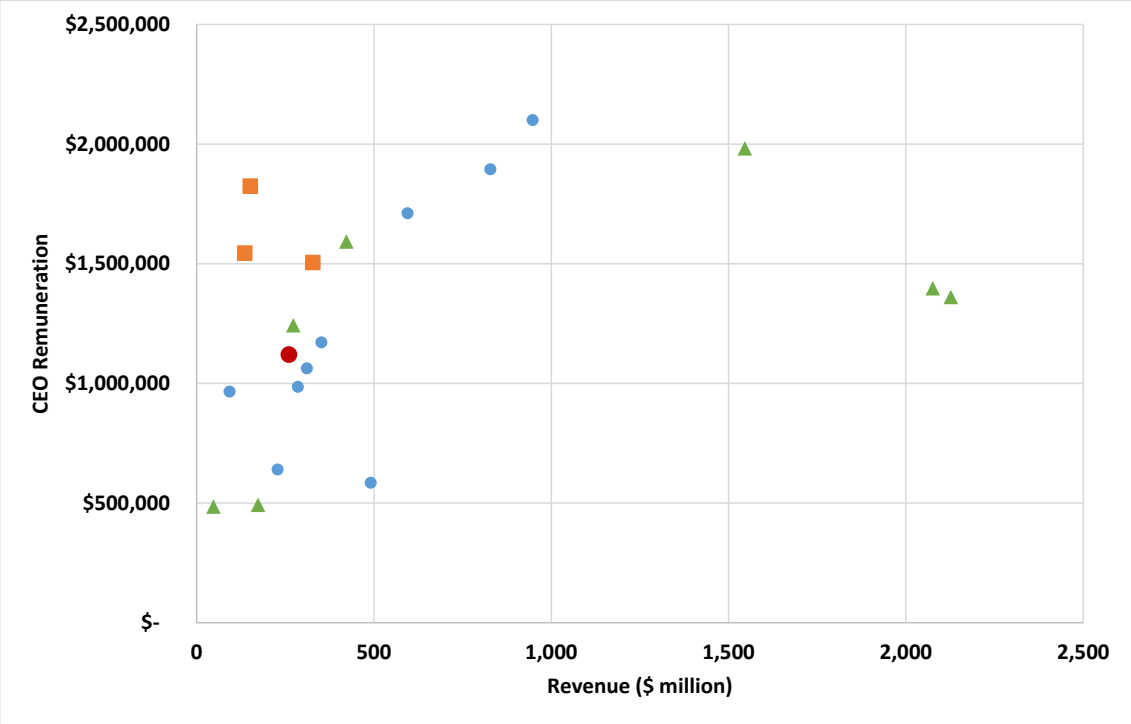
[19] Knight Frank 2015, *Brisbane CBD Office Market Overview*, April, p5.

4.4.2 Office of the Chief Executive

CEO Remuneration

109. Attachment G to this report shows the data on CEO remuneration for the sample of companies discussed in the previous section. The data in the attachment shows that the range of CEO remuneration over the nineteen companies[20] for which valid data was available ranged from a minimum of $485,000 to a maximum of $2,100,000. However, as with Board remuneration, the inter-quartile range was much smaller — from $966,000 to $1,711,000. The median value of CEO remuneration in the sample was $1,360,000.

Figure 5: CEO remuneration and corporate revenue



Note: Data points for industrial companies are show as blue dots; for energy companies, as orange squares; and for utilities, as green triangles. The red dot shows the revenue and estimated CEO remuneration for a Brisbane-based listed entity with DBCT as its sole asset in 2017.

110. Figure 5 shows a tendency for CEO remuneration to rise with corporate revenue at the lower end of the range. This relationship is less well-defined than the relationship between board remuneration and revenue. However, as with board remuneration, this relationship appears to break down beyond a certain scale.

[20] One of the companies in the dataset outsources all management activities, and does not employ a CEO (Ethane Pipeline).

Remuneration for the CEOs of three companies with revenues in excess of $1billion is, on average, slightly lower than remuneration for companies in the $0.5billion to $1billion range, and approximately the same as the average of the dataset as whole.

111. In fitting a statistical relationship to estimate an appropriate level of CEO remuneration for a listed company with DBCT as its only asset, I have therefore once again excluded companies with revenues in excess of $1 billion. The statistical analysis, details of which are provided in Attachment H, indicates the relationship between CEO remuneration and corporate revenue was statistically significant over this range.

112. Regressing CEO remuneration against revenue for the remaining companies yielded the relationship:

CEO remuneration = $0.794 million + $1,252 per $ million of revenue

113. Applying this relationship to the estimated revenue for DBCT of $260 million provides an estimate for CEO remuneration $1.12 million. This estimate is shown as the red dot in Figure 5. I note that this value is below both the median value ($1.35 million) and the average value ($1.29 million) for the dataset as a whole.

114. As with board remuneration, I have developed high and low estimates for CEO salary by estimating the upper and lower bounds of the interval within which there is a 50% chance that CEO salary-related costs would fall. This procedure, the details of which are presented in Attachment H, yields a lower estimate of $811,000 and an upper estimate of $1,428,000.

115. By way of a sensitivity testing, I undertook two supplementary analyses. I repeated the regression analysis:

- using only those firms with revenues of less than $0.5 billion;
- using all firms in the data set (including those with revenues of in excess of $1 billion).

116. The results of these supplementary analyses are also presented in Attachment H. In both cases, the statistical fit of the relationship was substantially inferior to that of the original analysis.

117. Applying the relationships produced by each of these analyses to expected DBCT revenue in 2016–17 produced estimates of CEO remuneration of $1.18 million and $1.09 million respectively. Once again, given the inevitable uncertainty involved in making estimates of this type, I do not regard either of these values as materially different from the original estimate.

118. Moreover, neither of these supplementary analyses provides persuasive evidence of a systematic relationship between CEO salary and revenue. In that case, it is at least arguable that the appropriate approach would be to abandon the attempt to define a systematic relationship between CEO salary and revenue, and simply use either the median or the mean of CEO salaries in the sample as the best available estimate of the appropriate salary for the CEO of a stand-alone entity managing DBCT[21]. This in turn would lead to an estimate of around $1.29 million, which is somewhat higher than my preferred estimate.

Executive Assistant to CEO

119. In its assessment of costs associated with the Office of CEO, KPMG also made allowance for the salary and on-costs for an executive assistant to the CEO. KPMG stated that the estimate was based on survey data from the AIM National Salary Survey for the employment category of Executive Assistant to CEO. This is in my opinion an appropriate and authoritative source. The estimated cost range for this item in the KPMG report was $72,513 to $91,473, with a median value of $80,691.

120. To update this figure to 2016–17 values, I have increased them by 16.2% (Attachment I provides details of how I arrived as this figure).

121. Updating the AIM National Survey Values to reflect this increase produces a median value of $94,000, with a range of from $84,000 to $106,000.

Consulting Expenses

122. Miscellaneous consulting costs are also included in this category. KPMG allowed for 30-50 days of consulting input at an average rate of $4,000 per day for this item. This is a particularly difficult item for which to provide an estimate for a hypothetical entity, and I concur with the view expressed by Ernst & Young in its report for Prime Infrastructure concerning the DBCT that 'it is difficult, if not impossible, to benchmark these costs across enterprises given their entity specific nature'[22].

[21] Technically, the coefficient in the regression equation is not significant at the 95% confidence level. (Full details of the relevant statistics are presented in Attachment 8). Under these circumstances, we would normally accept the null hypothesis that no persuasive evidence of a systematic relationship between CEO salary and corporate revenue. In the absence of such evidence, it does not make sense to try to use an equation that includes corporate revenue to estimate the appropriate salary for the CEO of DBCT: we should simply use a measure of the central tendency of the sample.

[22] Ernst & Young 2004, p29.

123. For this cost category, I have therefore relied on historical and expected expenditure on consultancy services at DBCT as the best available guide to the likely level of expenditure on such services.

The 2005 Decision

124. Ernst & Young's analysis of the consultancy costs actually incurred by Prime Infrastructure in 2003–04 for work related to DBCT identified a total of $345,000 in costs. The breakdown of this total is shown in Table 6 below.

Table 6: Consultancy expenses incurred by Prime Infrastructure in relation to DBCT

Item	Amount
Consultancy in respect of Beneficial Ownership Analysis Report, Investor and Market Intelligence Report, Broker Consensus Analysis and Register Searches	$37,000
Consultancy on IFRS project	$12,000
Consultancy on DBCT Master Plan Project Review	$239,000
Others	$57,000
Total	**$345,000**

Source: Ernst & Young 2004, p29.

125. I have considered each of the four items in turn and comment as follows:

(a) Ernst & Young commented that 'it is common for listed entities to commission a review of their share register' and that it would not be unusual for this to be performed once a year'.[23] However, it acknowledged that 'it could be argued that such costs would be avoidable if DBCT were the only asset owned by the listed entity'.[24] It is therefore debatable whether the hypothetical entity would incur this cost. I have taken the more conservative approach and excluded it from my estimation of consultancy costs.

(b) The expenditure on assistance with the IFRS project appears to have been a response to specific changes to accounting standards that was taking place at that time. I have excluded it from my estimation of consultancy costs as it is not apparent that the hypothetical entity will incur such costs.

(c) I would expect that consultancy services connected with optimisation of the terminal and planning for its development, including terminal master planning, would be an ongoing requirement. I have therefore included this item in my estimate of consultancy costs. This is by far the largest item of expenditure.

[23] Ernst & Young 2004, p29

[24] Ernst & Young 2004, p30

(d) In my opinion it is reasonable to make some allowance in corporate costs for *ad hoc* consultancies commissioned in response to unpredictable emergent needs. The expenditure by Prime Infrastructure on 'other' consultancies is a reasonable basis for estimating an appropriate allowance for such expenditure. I have therefore included this item in my estimate of consultancy costs.

126. The precise composition of consulting expenditure will vary from year to year. For example, notwithstanding the comment made by Ernst & Young[25] in its report, it may be that the level of expenditure on Master Planning shown in Table 6 above may reflect an exceptional level of activity in this particular area at the time. However, in other years there are likely to be different *ad hoc* consultancy needs, the specific nature of which cannot be known in advance, for which no corresponding costs were incurred in 2004.

127. I have no reason to believe that the combined level of expenditure on 'master planning' and 'other consultancies' in 2004 is atypically high or atypically low. I have therefore not attempted to adjust either consultancy expenses for 'terminal master planning' or 'other consultancies' in estimating consultancy costs for the hypothetical enterprise.

128. My resulting central estimate for an appropriate provision for general consulting expenditure is therefore $296,000 in 2004 dollar terms. To allow for increases in the price of such services, I have inflated this figure by 52% to arrive at an equivalent figure for 2016–17 of $450,000 per year. (See Attachment I for the derivation of the inflation factor).

DBCTM Budgeted Consulting Expenditure, 2016–17

129. Table 7 shows DBCTM's budgeted consultancy expenditure for 2016–17. Consultancy expenses directly related to economic regulation and expenditure on legal services, both of which are included under other components in this report, have been excluded from this table.

130. Table 7 shows budgeted consultancy expenditure for technical and general corporate consulting totals $295,000. This is somewhat lower than the figure obtained by updating the value of general consultancy services included in corporate revenue in the 2005 decision.

[25] Ernst & Young 2004, p30, comments that 'Master plan development is a recurring annual obligation for DBCT and to date has been dynamic. It is reasonable to assume that a similar expenditure would be incurred in future years'.

Table 7: DBCTM budgeted consulting expenditure

Nature of consulting contracts:	Amount ($000)
General	75
Operations	100
Human Resources	25
Media and PR	50
DBCT Holdings Costs	25
ILC Costs	20
Total	295

Source: DBCTM, personal communication 10 August 2015.

131. I have place greater weight on this prospective estimate, and allowed a value of $300,000 per year for technical and general consulting expenses.

132. Consistent with the assumptions made by KPMG, I have assumed lower and upper bounds for the likely level of expenditure 25% above and below this figure.[26]

Office Accommodation

133. Using the approach detailed in Attachment I, I have estimated of office space requirements for the CEO and Executive Assistant at 31 square metres. Applying the unit rate of $463 per square metre derived in paragraph 107 above yields an estimated annual rental cost of $14,000.

Miscellaneous office costs

134. Finally, I have included an allowance of $6,000 per FTE for miscellaneous office costs, including consumables and stationery, telecommunications costs, non-specialist staff training and miscellaneous minor items.

135. The resulting estimate of miscellaneous office costs for the CEO and Executive Assistant is $12,000 per annum.

Total cost of Office CEO

136. The estimated cost for the Office of CEO is summarised in Table 8 below.

[26] KPMG 2011, p17.

Table 8: Estimate of costs for Office of CEO

Item	Lower bound	Central Estimate	Upper bound
CEO remuneration and on-costs	$811,000	$1,202,000	$1,428,000
EA remuneration and on-costs	$84,000	$94,000	$108,000
Accommodation	$14,000	$14,000	$14,000
Office overheads	$12,000	$12,000	$12,000
Consultancy	$225,000	$300,000	$375,000
Total	**$1,146,000**	**$1,622,000**	**$1,937,000**

4.4.3 Economic Regulatory Management

137. Corporate costs estimated in the KPMG report include the cost of maintaining a specialist unit dedicated to Economic Regulatory Management.

138. The outcomes of regulatory processes are clearly critical to the business success of an enterprise whose revenue and/or prices are subject to regulatory controls. It is therefore reasonable to expect that a prudent stand-alone entity whose sole business was the management of a regulated business would secure and maintain the capacity to contribute meaningfully to these processes, and to manage the risks associated with them.

139. The range of activities related to economic regulation that such a firm would need to undertake include:

- the development of overall corporate strategy relating to the development and implementation of access agreements;
- participation in the public debate on regulation of access to infrastructure industries;
- preparation of documentation for, and presentations to, regulatory reviews and, if necessary, appeals;
- ensuring the maintenance of the financial data required to meet the requirements of the regulator, and to provide the foundations for inputs to the regulatory process;
- ensuring compliance with the requirements of the access undertaking;
- responding to regulatory information requests; and
- managing day-to-day relations with the regulator.

Salary and on-costs

140. KPMG draws on its 'specialist experience in advising on economic regulatory matters' to estimate that a regulatory affairs team of three people would be

adequate to properly discharge these and other minor functions related to economic regulation. It then makes use of data from two authoritative surveys of professional and administrative salaries to estimate appropriate salary levels for each of the three positions.

141. The procedure adopted by KPMG is appropriate, and the outcomes of the application of these procedures consistent with my own judgement on the likely level of regulatory costs. I have therefore adopted without adjustment the KPMG estimates for 2010–11. I have then estimated the likely value of these staff costs in 2016–17 by inflating these values by 16.2% (the base for the use of this percentage is provided in Attachment I).

Office costs

142. In estimating cost of office accommodation for the Economic Regulation group, I have assumed one closed office and two workstations. Applying the space requirements detailed in Attachment I yields a total office space requirement for this group of 38 square metres. At $\$463/m^2$/year, the cost of leasing this space is $18,000 per year.

143. Office overheads were estimated by applying the cost per FTE set out in Attachment I.

Consultancy

144. Benchmarking the consultancy costs that are likely to be incurred as part of economic regulatory management activities is particularly difficult. Consultancy effort is likely to be particularly intense in the period during which an Access Undertaking is being prepared, and during the process in which the Undertaking is being reviewed by the regulator. Much will depend on the extent to which any particular regulatory decision is contended. In the case of DBCT for example, it is likely that the consultancy costs incurred in connection with the contended 2005 undertaking were much higher than those incurred in connection with the 2010 undertaking, which was supported by all parties.

145. Partly for this reason, KPMG includes a broad range of consultancy effort in its estimate for this component of regulatory costs: between 50 and 133 days of consultancy services per year. KPMG claims that this estimate reflects its experience 'as a global provider of professional consultancy and advisory services'[27].

[27] KPMG 20112001, p8.

146. Due to the nature of the regulatory process, and the substantial sums involved, most of this consulting input will be at a senior level. Based on my knowledge of and experience in the provision of consulting services in this market, I have assumed an average fee level of $3,200 per day.

147. Combining KPMG's estimate of consulting inputs with this daily rate produces a range of consultancy costs (for work related to economic regulatory matters) of between $160,000 and $426,000, with a central estimate of $293,000.

Total Costs

148. The estimated total cost for economic regulatory management that a stand-alone regulated entity would incur is summarised in Table 9 below.

Table 9: Estimate of costs for Economic Regulatory Management

Position	Lower	Medium	Upper
Salary and Wages			
Manager Economic regulation	$214,000	$273,000	$350,000
Regulatory economist and accountant	$97,000	$107,000	$132,000
Senior regulatory accountant	$97,000	$107,000	$132,000
Consulting	$160,000	$293,000	$426,000
Office costs			
Accommodation	$18,000	$18,000	$18,000
Office overheads	$16,000	$16,000	$16,000
Total costs	**$602,000**	**$814,000**	**$1,074,000**

Cross-checks

149. KPMG reports the result of a survey that it undertook in 2005 into the regulatory costs incurred by Australian regulated business found that regulatory costs fall in the range $1.1 million to $1.7 million per annum. Writing in 2011, it noted that 'our experience in dealing with regulatory departments since that time has not altered this view'[28]. KPMG notes that this cost includes staff and consulting costs, but not accommodation and other overheads.

150. In its 2013 report on the National Access Regime, the Productivity Commission noted reports by wheat exporters that each of the access regimes for wheat

[28] KPMG 2011, p18.

export terminals cost approximately $1 million to establish, and then approximately $500,000 per year thereafter[29].

151. The Productivity Commission also reported that CBH incurred direct compliance costs of between $2.3 million and $2.7 million between 2009 and 2012.

152. Comparison of the costs presented in Table 9 with the range identified in the KPMG survey suggest that Table 9 may understate regulatory costs. But the numbers quoted by the Productivity Commission for port terminal operators in the grain industry also fall below this range, and are broadly compatible with the values presented in Table 9. This may indicate that regulatory compliance costs for this particular type of facility tend to be somewhat lower than for the general run of regulated infrastructure.

153. On balance, these cross-checks tend to confirm that the estimates presented in Table 9 are reasonable.

4.4.4 External Relations

154. This function, as defined by KPMG, covers activities such as:

- market assessment and forecasting;
- business development, including identification and pursuit of new business opportunities;
- management of contractual issues, including contract renegotiations;
- general customer relations;
- monitoring and response to development in government policy; and
- strategic business planning[30].

155. External Relations does not include day-to-day liaison with customers over operational matters concerning the terminal, which I understand would be undertaken by the operating entity.

156. While all of the listed functions would be undertaken by the provider of any infrastructure services, the level of activity will to some extent be determined by the specifics of the business and the regulatory environment.

[29] Productivity Commission 2013, National Access Regime, Inquiry Report no. 66, Canberra, p205.

[30] It is not obvious that 'strategic business planning' fits comfortably within the category 'external relations'. However, to allow me to make the fullest possible use of the benchmarks contained in the KPMG 2011, I have throughout this chapter followed the categorisation of costs adopted in that report.

157. The resources required to perform these functions for a mature gas distribution business was assessed by KPMG in its report as 1.5 FTEs. KPMG assumes that one of these position is shared by an 'operational department cost centre, and so allocated only 50% of the relevant salary and on-costs to corporate costs'.[31].

158. In the case of a truly stand-alone entity, where operational and ownership functions are strictly separated, there will be no scope for sharing of a position with an 'operational department cost' centre.

159. A critical role of the external regulations function in the case of DBCTM is the management of the relationship with the operating entity. DBCTM has indicated that the value of this contract is approximately $180million per year.

160. I considered estimating the efficient cost of supervising this contract as a percentage of contract value, with the percentage to be used estimated from data the costs of supervising facilities management contracts. However, determining an appropriate benchmark percentage of managing the DBCT contract is difficult. The services provided by the operating company include specialised operational services as well as facilities maintenance, and it is not clear that a general market benchmark would be appropriate.

161. I have therefore estimated the reasonable level of resourcing for this role, and built up the likely costs on this basis. I have allowed for contractor administrator supported by an assistant contract administrator.

162. As these specific roles were not required in the gas industry entity that was the focus of the KPMG study, I have not been able to rely on that study for an estimate of appropriate salary levels. I have relied instead on information on salaries for engineering professionals[32].

163. A second major role of external relations is to manage customer relations (which is considered within the band of external relations). The customer base of DBCT is small, and the scope for active business development relatively limited. I have therefore assumed that this function could be undertaken by a single relatively senior employee — possibly with support, in the forecasting and government policy areas, from the economic regulatory management team.

[31] KPMG 2011, Table 4-5. 'FTE' means full time equivalent (employees).

[32] Information were drawn for two sources. .I used www.engineeringjobs.com.au to obtain an average salary for a senior engineer involved in a management role for the salary of the contract administrator. I used the website www.payscale.comt to obtain an estimate for the salary for a mid-career, Brisbane-based mechanical engineer to estimate an appropriate salary for the assistant contract administrator.

164. For the salary level of the 'Manager, Commercial', I have adopted KPMG's estimated for the appropriate salary level for the senior external relations position, but have updated the salary to the equivalent 2016–2017 level using the factor discussed in paragraph 120.

165. I have then added in cost for office accommodation and office overheads as estimated in Attachment I.

166. My estimate for total external relations costs are summarised in Table 10 below.

Table 10: Estimate of External Relations costs

Position	Lower	Medium	Upper
Salary and Wages			
Contract administrator	$130,000	$150,000	$165,000
Assistant Contract Administrator	$75,000	$88,000	$120,000
Manager Commercial	$133,000	$154,000	$170,000
Office costs			
Accommodation	$9,000	$9,000	$9,000
Office overheads	$15,000	$15,000	$15,000
Total costs	**$362,000**	**$416,000**	**$479,000**

4.4.5 Finance

167. The Finance group includes all costs associated with:

- accounts payable and accounts receivable;
- financial accounting;
- management accounting;
- statutory financial reporting and tax compliance;
- financial planning and budgeting;
- treasury;
- internal audit;
- external audit;
- payroll.

168. The Information Technology function includes:

- administration and maintenance of customer management, finance and accounting systems;
- data storage and management;
- general telecommunication systems, both hardware and software;

- computer support for project management;
- computer system security.

169. KPMG's estimates for the internal cost of performing the Finance functions were based on benchmarks provided by an external report, the 2008 CFO Executive Board Report[33].

170. The benchmarks cited by KPMG place the internal costs of the Finance function at between 1.16% and 2.16% of business revenue, with a median value of 1.37%.[34] These totals included a component for IT costs.

171. The benchmarks used by KPMG are specific to Energy and Utilities, which is the industry sector to which the gas pipeline business with which they were concerned belongs. In my view, DBCT also belongs in this sector, and it could be argued that these same benchmarks should be applied to DBCT.

172. However, DBCT has few customers who deliver their coal to the port in relatively large shipments. It is likely to have a much lower volume of transactions than many companies in this sector—especially those with a retail customer base. This is likely to significantly affect finance costs. In my view, adopting the industry-wide median would over-estimate the cost of undertaking the financing and IT functions at DBCT.

173. My preferred approach would be to adopt a benchmark corresponding to a lower percentile in the range of companies surveyed. However, the CFO Executive Board survey includes only a small number of companies (five) from the Energy and Utilities sector. This is too few to be able to locate with any confidence the inter-quartile range.

174. The information presented in the CFO Executive Board Report suggests that the median value of finance costs—expressed as a percentage of revenue— for firms in the Energy and Utilities industry (1.37%) is slightly higher than, but not greatly different from, the median for all industries (1.15%).

175. I have therefore elected to use the lower quartile value for all industries (0.76%), rather than a value specific to the Energy and Utilities industry to develop my central estimate of finance and IT costs. This is a somewhat conservative approach, both because I use the lower quartile rather than the median, and because the 'all industries' median is itself slightly lower than the median for the

[33] CFO Executive Board, 2008 Finance Function Benchmarks,.

[34] KPMG 2011, Table 4-6.

Energy and Utilities industry. Nevertheless, it is in my opinion likely to provide a better estimate of the finance and IT costs for an entity whose sole asset is the DBCT.

176. The low estimate developed by KPMG is 85% of its central estimate; the higher estimate is 154%. I have retained these ratios in developing my upper and lower limits.

177. In addition to these internal costs, the Finance function includes external audit and ASIC and ASX fees.

178. I have estimated external audit costs using data for the sample of listed companies described earlier in this report. The external audit costs for each of these is presented in Attachment G.

179. The data in Attachment G shows that the range of external audit costs over the 19 companies for which valid data was available is broad, with a minimum of $84,000 and a maximum of $2,600,000. The inter-quartile range is much narrower: from $230,000 to $770,000, with a median value of $496,000.

180. As in other cases in which I have considered using the data to develop an estimate for the hypothetical entity, I have checked for any evidence of a systematic relationship between external audit costs and company revenue. The relevant data is presented graphically in Figure 6 below. Visual inspections suggests that, although the data points are widely scattered, there is a systematic relationship between external audit costs and revenue, at least for firms with revenues of up to $1 billion. Formal statistical testing confirmed this observation.

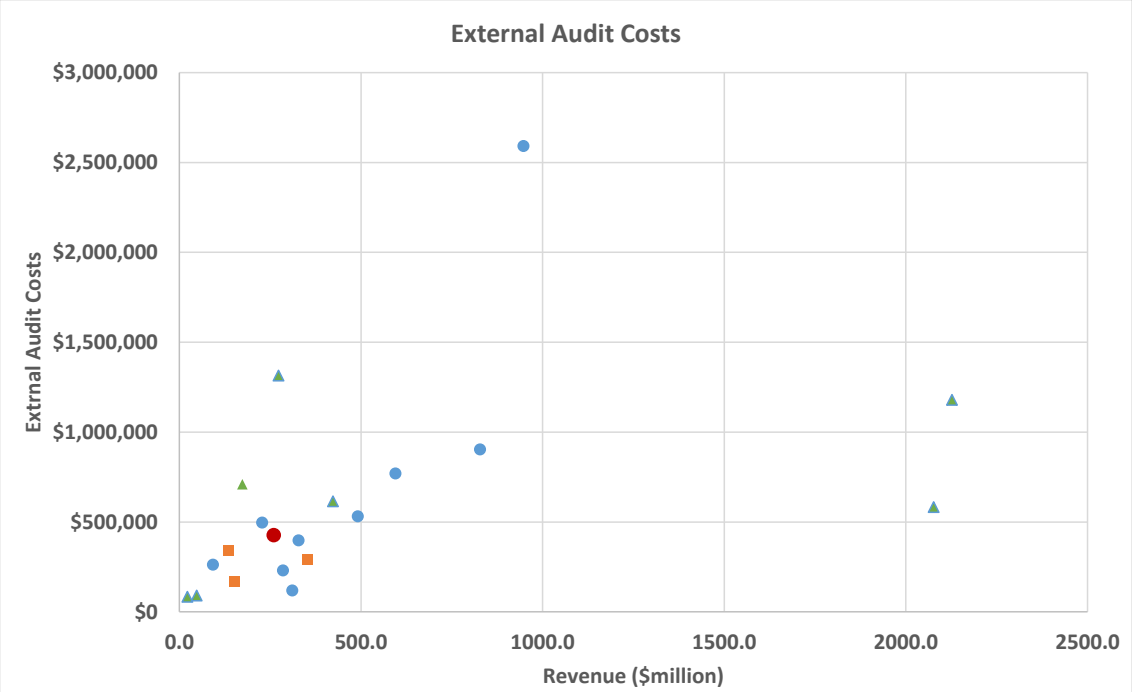
181. External audit costs for Boart Longyear, at over $2.5 million, are more than twice as high as those for any other company in the sample. Boart Longyear is the only company in the sample whose headquarters are in the US, and its Annual Report indicates that it operates a large number of subsidiaries located in many countries. These are, in my view, identifiable structural factors that are likely to reduce the relevance of its Audit Costs to the estimation of likely costs for an entity with DBCT as its sole assets. I therefore removed it from the sample before estimating the relationship used to estimate external audit costs.

182. Detailed results of the regression analysis are given in Attachment H. The estimated relationship between external audit costs and revenue was:

External audit costs = $0.198 million + $876 per $ million of revenue.

183. Applying this value to DBCT revenue of $260 million produces an estimate for DBCT external audit costs of $426,000. This is shown as a red dot in Figure 6.

Figure 6: External audit costs and corporate revenue



184. As with board remuneration and CEO salary, I have developed high and low estimates for external audit costs by estimating the upper and lower bounds of the interval within which there is a 50% chance that external audit costs will fall. This procedure, the details of which are set out in detail in Attachment H, yields a rather broad range: the lower bound of this interval is $125,000 and an upper bound is $727,000.

185. Finally, I have included an allowance for ASX and ASIC fees. As these are relatively small costs that have no material impact on the overall level of corporate costs, I have simply adopted the values from the KPMG report without adjustment. My estimate of total finance costs is presented in Table 11 below.

Table 11: Estimate of Finance costs

Item	Lower bound	Central Estimate	Upper bound
Assumed revenue 2016/17 ($ million)	260	260	260
Internal finance cost:% of revenue	0.64%	0.76%	1.20%
Internal finance cost	$1,664,000	$1,976,000	$3,115,000
External Audit Costs	$125,000	$426,000	$727,000
ASIC Fees	$5,000	$5,000	$5,000
ASX Fees	$20,000	$20,000	$20,000

Total	**$1,814,000**	**$2,427,000**	**$3,867,000**

4.4.6 Legal Counsel and Corporate Affairs

186. The Legal Counsel and Corporate Affairs function includes:

- ensuring that the entity meets its corporate regulatory and legal obligations under the Corporations Act;
- ensuring compliance with all other legislation and regulations that impact on the operations of the terminal, including environmental and native title legislation;
- providing advice to the Board on legal and compliance issues;
- handling enquiries from investors and other stakeholders;
- ensuring compliance with listing rules;
- managing formal communication with shareholders and other stakeholders, including organisation of the Annual General Meeting;
- managing contractual relationships with suppliers, including the relationship with the company operating and maintaining the terminal;
- managing media relations; and
- managing corporate citizenship and community relations.

187. Most of the functions outlined above would need to be undertaken by any listed company, and will require significant resourcing even for a relatively small company. KPMG estimated in its report that costs for legal and corporate affairs would require 4.5 FTEs, under the management of a Company Secretary[35]. However, 0.5 of an FTE is allocated to activities specific to the gas industry. In my opinion, the roles of the other 4 FTEs are generic to any listed infrastructure provider. The salary levels suggested by KPMG for these positions are based on benchmarking from the AIM National Salary Survey.[36] I consider this to be an appropriate approach that has provided realistic results.

188. I have therefore based my estimate of costs likely to be incurred for this function on a staff complement of 4 FTEs and the salary levels specified in the KPMG report (which presents lower and upper bound salaries as well as central estimates for each position)[37]. I have however adjusted the salary levels to equivalent 2016–17 levels. To do so, I have used the inflation factor of 16.2% derived in Attachment I.

[35] KPMG 2011 Table 4-8.

[36] KPMG 2011 Table 4-8.

[37] KPMG 2011 Table 4-8.

189. I have also allowed for office accommodation (one office and three work stations) and general office overheads for these positions. (The derivation of unit costs for these items is provided in Attachment I.)

190. Finally, KPMG argued in its report that some external legal advisory services would be required, as it would be inefficient to retain all necessary expertise permanently on staff[38]. I have followed KPMG in allowing for between 20 and 40 days of legal advice at a rate (in 2011) of $5,000 per day[39]. The resource level allowed for by KPMG — which I have adopted — represents the long-term average requirement for these services: the requirement will have significant peaks and troughs. I have updated the daily cost using an escalation factor 16.2% (for the derivation of this figure, see Attachment I).

191. The resulting estimated costs for Legal Counsel and Corporate Affairs for the hypothetical entity are shown in Table 12 below.

[38] KPMG 2011 p24.

[39] KPMG 2011 p24.

Table 12: Estimate of Legal Counsel and Corporate Affairs costs

	Lower bound	Central Estimate	Upper Bound
Salaries and on-costs			
Company secretary/general counsel	$194,000	$246,000	$277,000
Insurance and compliance officer	$70,000	$101,000	$127,000
Corporate affairs manager	$136,000	$157,000	$174,000
Communications coordinator	$99,000	$114,000	$120,000
Office costs			
Accommodation	$21,000	$21,000	$21,000
Office overheads	$24,000	$24,000	$24,000
Legal consultancy	$116,000	$174,000	$232,000
Total cost	**$660,000**	**$837,000**	**$975,000**

4.4.7 Office Administration and Human Resource Management

192. The Office Administration and Human Resource Management (HR) function includes:

- human resources management;
- document and records management;
- reception services;
- general office administration.

193. KPMG estimated in its report that the delivery of these services would require 2 FTEs, both of which are relatively junior positions[40]. In my opinion, this is likely to be too conservative, in view of the fact that the only other secretarial/support provided for (outside of finance) is the Executive Assistance to the CEO. I note that in discussing the legal and corporate affairs function, KPMG stated that "it is quite possible that a Legal and Corporate Affairs department of 4.5 FTEs would support the need for an assistant to improve the scheduling of work, undertaking [sic] some of the more junior tasks, and increase overall more efficient utilisation of the resources"[41]. Such a role has not been included within the Legal Counsel and Corporate Affairs function.

194. I consider that this comment applies with increased force when the corporate functions are considered collectively. I have therefore added an additional

[40] KPMG 2011, Table 4-9.

[41] KPMG 2011 p25.

position, at a junior level, to the staff complement for the general office administration function.

195. The salary levels suggested by KPMG for these positions are based on benchmarking from the AIM National Salary Survey.[42] I consider this to be an appropriate approach, but that, in the case of the Administration manager/HR manager, the required seniority of the position may have been somewhat under-estimated. However, as the effect of an adjustment to the level of seniority is unlikely to materially affect the overall outcome of the analysis, I have not pursued this matter further.

Table 13: Estimate of Office Administration and HR costs

	Lower bound	Central Estimate	Upper bound
Salaries and on costs			
Administration Manager/HR Manager	$79,000	$93,000	$103,000
Receptionist/Records Manager	$53,000	$59,000	$64,000
Office general assistant	$53,000	$59,000	$64,000
Total in-house salary and wages	**$185,000**	**$211,000**	**$231,000**
Office expenses			
Work stations	$18,000	$18,000	$18,000
Office overheads	$18,000	$18,000	$18,000
Total cost	**$221,000**	**$247,000**	**$267,000**

196. I have updated all of the salaries for the Office Administration and HR function to equivalent 2016-17 values using an escalation factor of 16.2%. I have also included an allowance for office accommodation (assuming one enclosed office and two work stations) and office overheads for each staff member.

197. The resulting estimated costs for Office Administration and HR are shown in Table 13 above.

4.4.8 Other costs

198. Apart from costs incurred in the major functional areas discussed in the previous sections, there are a number of other costs that the hypothetical entity will need to meet.

[42] KPMG 2011 Table 4-8. KPMG provides lower and upper bounds for the salary for each position, as well as a central estimate.

199. One of these is insurance. As noted previously, the largest insurance costs associated with the operation of the Dalrymple Bay Coal Terminal are currently paid by the operating entity and passed through to Users. I have therefore taken the position that, consistent with the arrangements which currently apply to the terminal, the hypothetical entity would not incur these corporate costs. However, some insurance requirements would still need to be met by facility owner.

200. Insurance costs are very specific to the asset owned by the entity, and the operating environment within which that asset is operated[43]. In estimating this cost, I have therefore relied on information on the actual insurance costs incurred by DBCTM, and that are not recovered by other means[44]. I have made an allowance of $100,000 for this item in 2016–17.

201. Other costs that are not accounted for under the benchmarked categories discussed above include:

- distribution expenses;
- travel expenses and entertainment;
- expenses associated with maintaining a credit rating;
- sponsorships and donations; and
- industry association fees.

202. While none of these cost items is large in itself, collectively they comprise a significant proportion of corporate costs. KPMG did not address in its report the question of the magnitude of these costs. To develop an estimate of what allowance should be made for these costs, I examined the detailed breakdown of costs for DBCT provided in 2005. These costs are set out in Attachment J to this report, and the way in which they were derived is discussed in Section 5.1 below. I reviewed each cost item, and assessed whether it had, in my opinion, been accounted for under one or more of the headings discussed above. Items were then tagged as 'included' or 'not included' according to the outcome of this assessment (these tags are also included in Attachment J). Insurance was assigned to a special category as 'separately estimated', and not considered in the calculation of the ratio. I then computed totals for the 'included' and 'not included' costs respectively, and calculated the ratio of the latter to the former. The results of this calculation are presented in Table 14 below.

[43] KPMG, in its 2010 report *Corporate costs benchmarking APA Allgas Network*, notes that insurance costs are 'specific to the nature of the risk' and therefore does not include these costs in its benchmarking (p23).

[44] DBCTM, personal communication, 7 August 2015.

Table 14: Ratio of 'not included' to 'included' costs

	Cost ($2005)
Included costs	3,458,000
Costs not included	631,000
Ratio of not included to included	**18.2%**

203. I consider that this ratio of 18.2% provides a reasonable basis for estimating the aggregate cost for those items not explicitly included in the component benchmarking. I have therefore applied it to the total of the included costs that were estimated in Sections 4.4.1 to 4.4.7 above. The results of this calculation are summarised in Table 15 below.

Table 15: Aggregate allowance for miscellaneous minor costs

	Lower bound	Central Estimate	Upper bound
Total 'included' costs	$5,158,000	$6,843,000	$9,208,000
Miscellaneous minor costs (% of 'included')	18.2%	18.2%	18.2%
Miscellaneous minor costs ($)	$939,000	$1,245,000	$1,676,000

4.5 Summary of results

204. The results for the 'component benchmarking' approach are summarised in Table 16 below.

Table 16: Estimate of total corporate costs – 'component benchmarking' method

Function	Low	Medium	High
Board of Directors	$338,000	$464,000	$590,000
Office of the Chief Executive	$1,146,000	$1,622,000	$1,937,000
Economic Regulatory Management	$607,000	$819,000	$1,080,000
External Relations	$362,000	$416,000	$479,000
Finance & IT	$1,814,000	$2,427,000	$3,867,000
Legal counsel and corporate affairs	$667,000	$845,000	$984,000
Office Admin and HR	$224,000	$250,000	$271,000
Subtotal - specifically benchmarked costs	**$5,158,000**	**$6,843,000**	**$9,208,000**
Insurance	$100,000	$100,000	$100,000
Other minor cost	$939,000	$1,245,000	$1,676,000
Total corporate costs	See note	**$8,188,000**	See note

Note: These columns have not been added because random errors of estimation for the individual line items will tend, to some degree, to cancel each other out. Adding the items in the 'lower bound' and 'upper bound' columns would exaggerate the spread of the estimated total corporate costs.

5 Method 3: Bottom-up approach

205. The third approach that I have used to estimate the corporate costs for the hypothetical entity is a 'bottom- up' approach. In this approach, I address each of the line items listed in the definition of corporate costs in Table 2 above individually, and make an assessment of the likely level of expenditure. I then sum the individual items to obtain an estimate of total corporate costs.

5.1 The 2005 DBCT determination

5.1.1 Relevance

206. I have taken the 2005 QCA determination on the DBCT Draft Access Undertaking[45] as the starting point for applying the bottom-up approach. I have done this because:

- The QCA made its decision after lengthy consideration of arguments and evidence put forward by various parties on the level of efficient corporate costs for such an entity.
- The reports developed by myself and Ernst & Young in the course of the regulatory process and made publicly available on the QCA website provide detailed information on the structure and level of corporate costs that underlay the QCA decision.
- Although the QCA has made a more recent determination on the DBCT Access Undertaking[46], this subsequent decision does not contain detailed information on the corporate cost structure of the owning entity. The information relating to the 2005 decision therefore remains the best available detailed information available to me on the structure and level of the costs that were assessed as reasonable by an independent adjudicating party.

5.1.2 The QCA's decision concerning DBCT

207. The original submission of Prime Infrastructure to the QCA claimed a total of $4 million dollars in corporate costs. This submission was subsequently revised twice: first to $9.5 million, then to $6.5 million dollars. The DBCT User Group considered that this cost was excessive, and proposed that an amount of $2

[45] QCA, 2005.

[46] QCA, *Final Decision: Dalrymple Bay Coal Terminal 2010 Draft Access Undertaking*, September 2010.

million for corporate costs was more realistic[47]. The QCA engaged my former company (Meyrick & Associates) to conduct an independent review of the proposed costs put forward by Prime Infrastructure[48].

208. I formed the view that some of the cost items proposed by Prime Infrastructure for inclusion in the corporate costs were not incurred by Prime Infrastructure by virtue of its ownership of the coal terminal, and that the amount claimed for other items was excessive[49]. I estimated the efficient level of corporate costs at $2.9 million[50]. In its Draft Decision, the QCA proposed to allow total corporate costs of $3.1 million, being the $2.9 million proposed by me plus $0.2 million for regulatory costs that were not included in the original Prime Infrastructure claim or in my review of this claim[51].

209. Prime Infrastructure did not accept this value in the QCA's Draft Decision, and engaged Ernst & Young to review my report and to make an independent estimate of efficient corporate costs. Ernst & Young assessed the total corporate costs at $5.0 million per year. The QCA asked me to review my principal report in the light of the Ernst & Young critique and the additional information contained in it. After considering this material, I revised my estimate of corporate costs upward to $3.9 million (including regulatory costs of $200,000)[52].

210. In its final decision, the QCA adopted a value of $4.6 million for total corporate costs[53].

5.1.3 Cost details in the QCA decision

211. While the consultants' reports provided detailed breakdowns of corporate costs, the final decision of the QCA provides only an aggregate figure. This figure lies between the aggregate cost proposed by Meyrick & Associates and the aggregate cost proposed by Ernst & Young. I have therefore needed to make some adjustments to the costs detailed in the consultants' reports in order to reconcile them with the final decision of the QCA.

[47] QCA 2005, p156.

[48] Meyrick 2004.

[49] Meyrick 2005, p8.

[50] Meyrick 2004, p22.

[51] QCA 2004, p201.

[52] Meyrick 2005, p16.

[53] QCA 2005 p157.

212. The difference between the QCA's final decision and the amount proposed by me stemmed very largely from the QCA's determination of the appropriate basis of estimation. My estimate was based primarily on the prevalent model of coal terminal operations in Australia at the time, in which the coal terminal is owned by an unlisted company or joint venture operating out of a regional location. However, in its final determination, the QCA stated that:

> *"the Authority did not accept some of Meyrick's proposed adjustments [to the costs proposed in the Ernst & Young report], either in full or in part. In this regard, the Authority considered that it was reasonable to base the costs on those that would be incurred by a Brisbane based listed entity. This impacted on the allowances for a variety of costs, including salaries, board expenses, corporate communications, share registry costs, office rental and distribution costs."* [54]

213. In Table 17 below, I have adjusted the corporate costs proposed in my final report to the QCA[55] to reflect the final decision of the QCA. In making these adjustments, I have concentrated on the items identified in the quotation above. For each of the relevant cost items[56], I have estimated the final figure as a weighted average of the values proposed by Ernst & Young and by me. In computing this estimate, I have used the same weights for each cost item.

214. The weights that I have used to adjust the relevant cost items were calculated to ensure that, when the weights are applied uniformly to each of the cost items indicated by the QCA, they result in a total corporate cost of $4.6 million (the total corporate cost for DBCT determined by the QCA in its decision). While I cannot be certain that my adjusted values exactly reflect the final views of the QCA, I am confident that the procedure outlined above will ensure that my attributed values closely approximate the QCA's views, and that any residual differences will not materially affect the outcome of the analysis.

215. The costs proposed by Ernst & Young in its report to the QCA, and those proposed by me to the QCA for each item listed in Table 2, are summarised in Table 17. The table also shows the adjustments that I have made to provide a set of values for each item in order to generate a total value for corporate costs that is compatible with the QCA's final decision of $4.6 million for corporate costs.

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[54] QCA 2005 p157.

[55] Meyrick 2005.

[56] For this purpose, I have included in 'salaries' employee superannuation and payroll tax. In corporate communications, I have included the cost the Annual General Meeting, Annual Report and the costs included by Prime under the heading 'newsletter'.

Table 17: Breakdown of corporate costs for DBCT (2005)

Cost Item	Ernst & Young 2004	Meyrick 2005	Reconciled to QCA Decision
Board expenses	$217,000	$158,000	$ 202,000
External audit	See note 1	$103,000	$ 103,000
Subtotal - Governance	**$217,000**	**$261,000**	**$ 305,000**
Salaries & Wages[2]	$1,901,000	$1,364,000	$ 1,796,000
Conferences	$18,000	$18,000	$ 18,000
Fringe Benefits Tax	$37,000	$29,000	$ 29,000
Payroll Processing	$11,000	$8,000	$ 8,000
Payroll Tax	$105,000	$82,000	$ 99,000
Recruitment Costs	$83,000	$36,000	$ 36,000
Staff Amenities	$6,000	$6,000	$ 6,000
Staff Superannuation	See note 2	$120,000	See note 2
Staff Training & Seminars	$9,000	$9,000	$ 9,000
Work Cover Insurance	$8,000	$6,000	$ 6,000
Subtotal - Staff expenses	**$2,178,000**	**$1,678,000**	**$ 2,007,000**
Annual General Meeting	$106,000	$41,000	$ 90,000
Annual Report	$140,000	$51,000	$ 118,000
ASIC Fees	$2,000	$2,000	$ 2,000
ASX Fees	$64,000	$50,000	$ 50,000
Credit Rating	$40,000	$40,000	$ 40,000
Distribution Expenses	$150,000	$51,000	$ 125,000
Newsletter	$41,000	$-	$ 31,000
Share Registry Fees	$101,000	$51,000	$ 88,000
Subtotal - Investor relations	**$644,000**	**$286,000**	**$ 544,000**
Accounting and Taxation Advice[1]	$296,000	$123,000	$ 123,000
Bank Fees and charges	$4,000	$4,000	$ 4,000
Internal Audit[3]	See note 3	$51,000	$ 51,000
Subtotal - Finance	**$300,000**	**$178,000**	**$ 178,000**
Catering	$5,000	$5,000	$ 5,000

Cost Item	Ernst & Young 2004	Meyrick 2005	Reconciled to QCA Decision
Cleaning	$18,000	$18,000	$ 18,000
Computer/IT Maintenance & Software	$153,000	$153,000	$ 153,000
Consultancy Fees	$238,000	$238,000	$ 238,000
Couriers	$10,000	$10,000	$ 10,000
Depreciation	$60,000	$60,000	$ 60,000
Entertainment	$45,000	$53,000	$ 53,000
Gifts & Donations	$18,000	$18,000	$ 18,000
Insurance	$511,000	$511,000	$ 511,000
Legal Costs	$86,000	$86,000	$ 86,000
Office Rentals	$142,000	$51,000	$ 114,000
Printing Postage & Stationery	$20,000	$20,000	$ 20,000
Subscriptions	$3,000	$3,000	$ 3,000
Sundry	$1,000	$1,000	$ 1,000
Telephone/Fax/Internet	$31,000	$31,000	$ 31,000
Travel	$92,000	$45,000	$ 45,000
Subtotal - Office and general	**$1,433,000**	**$1,303,000**	**$ 1,366,000**
Regulatory	$200,000	$200,000	$ 200,000
Grand Total	**$4,972,000**	**$3,906,000**	**$4,600,000**

Notes: 1. External audit costs are included by Ernst & Young in Accounting and Taxation advice 2. Staff superannuation is included in Salaries and Wages by Ernst & Young and in the estimated QCA decision. 3. Internal audit costs are included by Ernst & Young in Accounting and Taxation advice.

5.2 Equivalent costs in 2016–17

216. The first step in updating these costs to equivalent costs in 2016–17 is to adjust them for general increases in prices over the interim period.

217. To do this, I have used three different inflation factors:

- For cost items that, in my opinion, are likely to be wholly, or very largely, driven by increases in wages and salaries, I have used a factor based on movements in hourly wage and salary rates in Queensland.
- For rental, I have used a factor based on movements in gross effective rents for prime office space in the Brisbane CBD.

- For other costs, I have used a factor based on Brisbane CPI movements.

218. Full details of the derivation of each of these factors are provided in Attachment I.

219. Table 18 shows which factor I have applied to each line item in the bottom-up benchmarking, and the magnitude of the factor in each case.

220. I have not included an allowance for the line item 'regulatory costs' in Table 18 or in subsequent tables. It is my understanding that this amount is intended to cover QCA costs, and that it is determined by QCA and then included in the ARR as an identifiable line item. It is therefore not a cost that is under the control of DBCTM, or that is determined by actions that are taken DBCTM or Brookfield. While it is appropriate that this cost be included in the ARR, there is no basis in corporate cost analysis for benchmarking this cost.

Table 18: Inflation adjustment for DBCT costs

Cost Item	Reconciled to QCA Decision	Inflation parameter	Inflation factor	Equivalent FY2017 Prices
Board expenses	$202,000	Wages	48.7%	$300,000
External audit	$103,000	Wages	48.7%	$153,000
Subtotal - Governance	**$305,000**			**$453,000**
Salaries & Wages[2]	$1,796,000	Wages	48.7%	$2,671,000
Conferences	$18,000	General	37.3%	$25,000
Fringe Benefits Tax	$29,000	Wages	48.7%	$43,000
Payroll Processing	$8,000	General	37.3%	$11,000
Payroll Tax	$99,000	Wages	48.7%	$147,000
Recruitment Costs	$36,000	Wages	48.7%	$54,000
Staff Amenities	$6,000	General	37.3%	$8,000
Staff Training & Seminars	$9,000	General	37.3%	$12,000
Work Cover Insurance	$6,000	Wages	48.7%	$9,000
Subtotal - Staff expenses	**$2,007,000**			**$2,980,000**
Annual General Meeting	$90,000	General	37.3%	$124,000
Annual Report	$118,000	General	37.3%	$162,000
ASIC Fees	$2,000	General	37.3%	$3,000
ASX Fees	$50,000	General	37.3%	$69,000
Credit Rating	$40,000	General	37.3%	$55,000
Distribution Expenses	$125,000	General	37.3%	$172,000
Newsletter	$31,000	General	37.3%	$43,000
Share Registry Fees	$88,000	General	37.3%	$121,000
Subtotal - Investor relations	**$544,000**			**$749,000**
Accounting and Taxation Advice[1]	$123,000	Wages	48.7%	$183,000
Bank Fees and charges	$4,000	General	37.3%	$5,000
Internal Audit[3]	$51,000	General	37.3%	$70,000
Subtotal - Finance	**$178,000**			**$258,000**
Catering	$5,000	General	37.3%	$7,000
Cleaning	$18,000	Wages	48.7%	$27,000
Computer/IT Maintenance & Software	$153,000	General	37.3%	$210,000
Consultancy Fees	$238,000	Wages	48.7%	$354,000
Couriers	$10,000	General	37.3%	$14,000

Cost Item	Reconciled to QCA Decision	Inflation parameter	Inflation factor	Equivalent FY2017 Prices
Depreciation	$60,000	General	37.3%	$82,000
Entertainment	$53,000	General	37.3%	$73,000
Gifts & Donations	$18,000	General	37.3%	$25,000
Insurance	$511,000	See Note 1		$100,000
Legal Costs	$86,000	Wages	48.7%	$128,000
Office Rentals	$114,000	Rental	120.5%	$251,000
Printing Postage & Stationery	$20,000	General	37.3%	$27,000
Subscriptions	$3,000	General	37.3%	$4,000
Sundry	$1,000	General	37.3%	$1,000
Telephone/Fax/Internet	$31,000	General	37.3%	$43,000
Safety (PPE and Consulting)		See Note 2		$75,000
Travel	$45,000	General	37.3%	$62,000
Subtotal - Office and general	**$1,366,000**			**$1,483,000**
Grand Total	**$4,600,000**			**$5,923,000**

Notes:

1. The 2005 QCA decision includes a significant allowance for insurance. My understanding is that the bulk of insurance costs are now borne by the operating entity, and including in 'pass through' costs. DBCTM now directly carries only a minor share of insurance costs, principally business interruption insurance. The allowance for insurance included in this table in the 'Equivalent 2017 prices' column includes only those insurance costs borne directly by DBCTM.

2. No specific allowance was made for this item in the 2005 QCA decision, and I do not believe that it was included implicitly under any other item.

5.3 Comparing DBCT in 2005 and DBCT today

221. If large differences exist between the DBCT as it stands today and the terminal as it stood at the time of the 2005 decision, it is reasonable to expect that the level of corporate costs would also be different.

222. In applying the bottom up approach, I have therefore compared the key attributes of DCBT now with those of DBCT as it was in 2005, and considered whether differences in the scale or scope of operations are likely to give rise to material differences in the corporate costs associated.

223. Corporate costs are likely to respond to several dimensions of scale and complexity. Capacity, volume, revenue, asset value and the number of customers are all characteristics that may have an impact on different elements of corporate costs.

224. A comparison of key attributes is provided in Table 19 below.

Table 19: Key characteristics of DBCT in 2005 and 2015

	DCBT in 2004-05	DBCT in 2014-15
Nameplate Capacity (mtpa)	56.0	85.0
Throughput (mtpa)	50.5	71.6
Revenue base ($m) (in 2014/15 monetary terms)	120.5	260.0
Asset Base ($m) (in 2014/15 monetary terms)	1,130	2,418
Number of Users	8	6

Sources: Data provided to me by DBCTM, personal communication 7 August 2015. The attributes that are expressed in monetary terms in Table 19 have all been expressed in equivalent 2014–15 terms. I have done this by adjusting the values relating to DBCT in accordance with the 33.4% rise in the Brisbane all-groups CPI between December, 2004 and December 2014 (ABS Cat No 6401.0 Series A2325816R).

225. Table 19 indicates that the both revenue base and the value of asset base are now more than twice as they were at the time of the 2005 decision. Nameplate capacity has increased by over 60% and throughput by over 40%. On the other hand, the number of users has declined by 25%.

226. Taken as a whole, it is clear that there has been a substantial change in DBCT operations over the period, and it is reasonable to expect that this will have some impact of corporate costs.

227. Revenue plays an important part in the estimation of corporate costs in both the 'high level' and 'component cost' benchmarking approaches. In comparing enterprises that are engaged in providing different goods or services — as is done in the 'high level' and 'component' benchmarking approaches — direct comparisons of scale and complexity are not possible, and a proxy must be used. Revenue is the proxy most commonly used.

228. It is not necessarily revenue *per se* that is the main driver of corporate costs. Although some elements of corporate costs may be directly related to revenue, for other cost elements it may be the scale and complexity of operations that is the real driver.

229. However, as a practical matter, there is no information available on the basis of which I can objectively relate particular elements to dimensions of complexity other than revenue. The 'component benchmarking' approach does provide some relationships between certain types of cost and revenue that provide a consistent and objective basis for estimating the impact of increased scale on corporate costs.

230. I have used these relationships in the following way to estimate the impact of the increased scale and complexity of the DBCT on corporate costs:

- I have divided the line items in the bottom-up assessment into those that are likely to be significantly affected by increased scale and complexity, and those that will not be significantly affected.
- I have further subdivided those line items that fall into the first category into those that are:
  - Board costs
  - External audit costs
  - Salary-related costs
  - Other costs
- For each of these categories, I have used information from the component benchmarking approach to estimate the 'fixed' and 'variable' shares of the costs incurred in 2005. I have then multiplied the variable component by ratio of revenue in FY2005 to revenue in FY2017

231. Full details of this process are provided in Attachment I.

232. The outcomes from this analysis are shown in Table 20 below.

Table 20: DBCT corporate costs adjusted for inflation and expansion

Cost Item	Equivalent FY2017 Prices	Revenue sensitive	Fixed %	Revised estimate
Board expenses	$300,000	Y	63.8%	$419,000
External audit	$153,000	Y	65.7%	$210,000
Subtotal - Governance	**$453,000**			**$629,000**
Salaries & Wages[2]	$2,671,000	Y	59.9%	$3,844,000
Conferences	$25,000	N	100.0%	$25,000
Fringe Benefits Tax	$43,000	Y	59.9%	$62,000
Payroll Processing	$11,000	Y	59.9%	$16,000
Payroll Tax	$147,000	Y	59.9%	$212,000
Recruitment Costs	$54,000	Y	59.9%	$78,000
Staff Amenities	$8,000	N	100.0%	$8,000
Staff Training & Seminars	$12,000	Y	59.9%	$17,000
Work Cover Insurance	$9,000	Y	59.9%	$13,000
Subtotal - Staff expenses	**$2,980,000**			**$4,275,000**

Cost Item	Equivalent FY2017 Prices	Revenue sensitive	Fixed %	Revised estimate
Annual General Meeting	$124,000	N	100.0%	$124,000
Annual Report	$162,000	N	100.0%	$162,000
ASIC Fees	$3,000	N	100.0%	$3,000
ASX Fees	$69,000	N	100.0%	$69,000
Credit Rating	$55,000	N	100.0%	$55,000
Distribution Expenses	$172,000	N	100.0%	$172,000
Newsletter	$43,000	N	100.0%	$43,000
Share Registry Fees	$121,000	N	100.0%	$121,000
Subtotal - Investor relations	**$749,000**			**$749,000**
Accounting and Taxation Advice[1]	$183,000	N	100.0%	$183,000
Bank Fees and charges	$5,000	N	100.0%	$5,000
Internal Audit[3]	$70,000	N	100.0%	$70,000
Subtotal - Finance	**$258,000**			**$258,000**
Catering	$7,000	N	100.0%	$7,000
Cleaning	$27,000	N	100.0%	$27,000
Computer/IT Maintenance & Software	$210,000	Y	63.1%	$295,000
Consultancy Fees	$354,000	Y	63.1%	$497,000
Couriers	$14,000	N	100.0%	$14,000
Depreciation	$82,000	Y	63.1%	$115,000
Entertainment	$73,000	N	100.0%	$73,000
Gifts & Donations	$25,000	N	100.0%	$25,000
Insurance	$100,000	N	63.1%	$100,000
Legal Costs	$128,000	N	100.0%	$128,000
Office Rentals	$251,000	Y	63.1%	$352,000
Printing Postage & Stationery	$27,000	N	100.0%	$27,000
Subscriptions	$4,000	N	100.0%	$4,000
Sundry	$1,000	N	100.0%	$1,000
Telephone/Fax/Internet	$43,000	N	100.0%	$43,000
Safety (PPE and Consulting)	$75,000	N	100.0%	$75,000
Travel	$62,000	N	100.0%	$62,000
Subtotal - Office and general	**$1,483,000**			**$1,845,000**

Cost Item	Equivalent FY2017 Prices	Revenue sensitive	Fixed %	Revised estimate
Grand Total	**$5,923,000**			**$7,756,000**

5.4 Cross-checks

233. The estimated corporate costs for the expanded DBCT are, in real terms, 31% higher than equivalent costs for a terminal of the size and complexity of DBCT as it stood in FY2005.

234. Given the magnitude of the changes that have taken place over that period, this difference appears reasonable. I have, however, cross-checked this increase using both the high level benchmarking approach and the component benchmarking approach.

235. The high level benchmarking approach is wholly independent of the bottom-up process documented in this chapter. I have used the equation derived in the high level benchmarking approach. For ease of reference, that equation is repeated below.

    Corporate cost = $3.0 million + 3.3% of revenue.

236. Applying this relationship to the revenue for DBCT as it was in FY2005 (expressed in equivalent FY2014 dollar terms) and as it is now provides an estimate for corporate costs of $6.9 million and $11.2 million respectively. The increase is 62%.

237. Largely because information from the component benchmarking approach was used in deriving the bottom up estimates, these two approaches are not wholly independent. But they are sufficiently distinct to allow the component benchmarking approach to be useful as one way of cross-checking the bottom-up estimate of the impact of changes in scale and complexity.

238. Applying the component benchmarking approach to the revenue for DBCT as it was in FY2005 (expressed in equivalent FY2014 dollar terms) provides an estimates for corporate costs of $7.2 million. Applying the component benchmarking approach to the revenue for DBCT as it is now provides an estimates for corporate costs of $9.2 million. The difference is 28%.

239. In my opinion, these results support the reasonableness of the adjustment for increased complexity made in Table 20.

6 Comparison and final estimate

240. In the preceding chapters, I have adopted three largely independent approaches to the estimation of the corporate costs for the hypothetical entity. Each of these approaches has its individual strengths and weaknesses.

241. The results of the three estimates obtained using each of these approaches are summarised in Table 21 below.

242. As all three of the estimates have some claim to validity, it is appropriate to take all three into account in some way when settling on a preferred value. This implies adopting some measure of central tendency — either an (weighted or unweighted) average of the results, or the median. Consistent with the approach adopted elsewhere in this report, I have adopted the median as the preferred measure of central tendency. I have done so primarily because in my view this approach minimises the risk that the estimate will be significantly distorted by aberrations in the information on which the estimates are founded.

243. I have, however, included the unweighted average of the three results for the sake of comparison. It can be seen that using the mean as the measure of central tendency provides a higher value.

Table 21: Summary of results

Method	Estimated corporate costs
High level benchmarking	$11.6million
Component benchmarking	$8.2million
Bottom up approach	$7.8million
Median	$8.2million
Average	$9.2million

244. In my opinion, based on the analysis documented in this report, the best available estimate for the corporate costs that would be incurred in 2016-17 by a Brisbane-based listed entity with DBCT as its sole asset is $8.2 million. This figure does not include the QCA levy.

A Enterprises included in high level benchmarking

ID	Infrastructure	Owner/Lessee	Relevant regulatory judgement
1	Aurizon Network	Aurizon Network is the infrastructure owner and manager of the Central Queensland Coal Network (CQCN). It have four rail systems that service three port precincts on the Queensland coast. It currently rails in excess of 200 million tonnes per annum of primarily metallurgical coal.	Queensland Competition Authority decision on the Aurizon Network 2013 Draft Access Undertaking.
2	ATCO Gas	ATCO Gas serves as the distribution company for natural gas to domestic customers in Western Australia. Their domestic supply network covers the following areas; Perth greater metropolitan area, Albany, Brunswick Junction, Bunbury, Busselton, Capel, Geraldton, Harvey, Kalgoorlie, and Pinjarra. They also provide gas service to industrial customers.	Economic Regulation Authority of Western Australia, Final Decision on Proposed Revisions to the Access Arrangement for the Mid-West and South-West Gas Distribution Systems 2015
3	Dalrymple Bay Coal Terminal (DBCT)	Dalrymple Bay Coal Terminal is now managed by Brookfield Infrastructure. However, at the time of the 2005 regulatory judgement from which the data used in the benchmarking study is drawn, it was managed by Prime Infrastructure though its subsidiary DBCT Management Pty Ltd. Prime Infrastructure was a Brisbane-based listed company with a portfolio of infrastructure interests. (The DBCT was the first asset acquired by Prime, but was, by the date at which the regulatory judgement was made, no longer its sole asset).	Queensland Competition Authority decision on the Dalrymple Bay Coal Terminal Draft Access Undertaking. (2005), & Queensland Competition Authority decision on the Dalrymple Bay Coal Terminal Draft Access Undertaking 2010.

ID	Infrastructure	Owner/Lessee	Relevant regulatory judgement
4	Western Australian Southwest Freight Rail network	At the time of the regulatory determination from which the data used in the benchmarking study was drawn, Westnet Rail Pty Ltd, a subsidiary of Babcock and Brown, was the lessee and manager of the southwest rail freight network in Western Australia. The network is used for the shipment of a range of minerals and grains. Babcock and Brown was a Brisbane based listed company with a portfolio of infrastructure assets.	Economic Regulatory Authority (ERA) determination on Westnet Rail's Proposed 2009-10 Floor and Ceiling Costs (2009).
5	Northwest rail infrastructure: Christmas Creek to Port Hedland	The Pilbara Infrastructure Pty Ltd (TPI), a wholly-owned subsidiary of Fortescue Metals Group (FMG) is the owner of a rail line linking FMG's mine at Christmas Creek in the eastern Pilbara to its port facilities in Port Hedland. FMG is a publicly listed mining company based in Perth. The rail line owned by TPI is subject to the Western Australian Rail Access regime. It is used exclusively for the transport of iron ore.	Economic Regulatory Authority determination on TPI's costing principles (2010).
6	Hunter Valley Rail network	The Hunter Valley network is primarily used for the transport of coal to coal loading facilities in the port of Newcastle. It is leased to Australian Rail Track Corporation (ARTC), and operations are conducted by a division of ARTC headed by the Executive General Manager, Hunter Valley, based in Newcastle. Corporate support services are provided by ARTC's headquarters in Adelaide. ARTC is a government business enterprise that manages a number of discrete rail networks.	Australian Competition and Consumer Commission annual review of the compliance of ARTC with the Hunter Valley Access Undertaking (2012).

ID	Infrastructure	Owner/Lessee	Relevant regulatory judgement
7	Queensland electricity transmission network	Queensland's high voltage electricity transmission network, which transports electricity in bulk from power generators to the regional distribution networks, is owned and managed by Powerlink. Powerlink is a corporatised entity owned by the Queensland Government. It is based in Queensland, and the Queensland transmission system is its sole asset.	Australian Energy Regulator decision on the Powerlink Transmission determination for 2012-13 to 2016-17 (2012).
8	Tasmanian electricity transmission network	Transend is the owner and operator of the electricity transmission system in Tasmania. Transend is a corporatised government business enterprise of the Tasmanian government. It is based in Hobart, and the Tasmanian transmission system is its sole asset.	Australian Energy Regulator decision on the Transend Transmission determination for 2009-10 to 2013-14 (2009).
9	Dawson Valley Pipeline	The Dawson Valley Pipeline (DVP) transports gas 47 km from gas fields in the Dawson Valley in central Queensland to the Wallumbilla to Gladstone via Rockhampton Pipeline (Queensland Gas Pipeline). The pipeline is owned by the Dawson Joint Venture, a joint venture between Anglo Coal (Dawson) Limited and Mitsui Moura Investment Pty Ltd (Mitsui), who are also co-owners of the coal seam methane fields and were, at time of the regulatory determination, the sole user of the pipeline.	Australian Consumer and Competition Commission, Access arrangement for the Dawson Valley Pipeline (2007).
10	RTB Pipeline	The Roma to Brisbane (RTB) pipeline is owned and managed by APT Petroleum Pipelines Pty Ltd, a subsidiary of the listed Sydney-based APA Group, which owns a portfolio of energy infrastructure assets. The RTB pipeline carries gas from a number of sources to power stations, gas distributors and major industrial customers.	Australian Energy Regulator decision on APT Petroleum Pipeline Pty Ltd: Access arrangement final decision Roma to Brisbane Pipeline 2012–13 to 2016–17 (2012).

ID	Infrastructure	Owner/Lessee	Relevant regulatory judgement
11	Natural gas distribution network in northern Brisbane and major regional centres in Queensland	The network of gas distribution pipelines that supply natural gas to customers in and around Brisbane (north of the river) and a number of regional centres in Queensland, including Ipswich, Rockhampton and Gladstone, is owned by Envestra. Envestra owns about 22,200 kilometres of natural gas distribution networks and 1,120 kilometres of transmission pipelines in South Australia, Victoria, Queensland, New South Wales and the Northern Territory.[57] Envestra is a listed company based in South Australia. Since 2007, it has outsourced the operations and management of its networks to APA Group.	Australian Energy Regulator decision on Envestra Ltd: Access arrangement proposal for the Qld gas network 1 July 2011 – 30 June 2016. Data is taken from AER final decision and Envestra Queensland Access Undertaking.
12	Natural gas distribution network in southern Brisbane, Toowoomba, Gold coast and northern NSW	The network of gas distribution pipelines that supply natural gas to customers in and around Brisbane (south of the river), a number of other population centres in Queensland — including Toowoomba and the Gold Coast — and northern NSW, is owned and operated by APT Allgas. APT Allgas is in turned wholly owned by APT Pipelines Limited, part of the publicly listed APA Group. APA Group is based in Sydney.	Australian Energy Regulator Decision on APT Allgas: Access arrangement proposal for the Qld gas network, 1 July 2011 – 30 June 2016 (2011).

[57] Envestra 2013, *About Envestra*, viewed on the Envestra website, http://www.envestra.com.au, 5 January 2013.

ID	Infrastructure	Owner/Lessee	Relevant regulatory judgement
13	Victorian Gas Transmission System	The Victorian Gas Transmission System comprises 45 licensed pipelines totalling 1993 km in length (and associated facilities) supplying the Melbourne metropolitan area, country Victoria, New South Wales and South Australia. It is operated by APA Gasnet, which in turn is wholly owned by Sydney-based listed entity, APA Group.	Australian Energy Regulator draft decision on Access arrangement for APA GasNet Australia (Operations) Pty Ltd 2013–17 (2012).
14	Linkwater	LinkWater is a Statutory Authority, owned by the State Government and governed by an independent Board. It provides water transport services to the Southeast Queensland Water Grid Manager involving the transfer of water from dams and other water resources through bulk pipeline networks to Council owned water distributor-retailers. Linkwater manages the bulk water transport facilities and pipelines previously owned by various local councils in SEQ, and a collection of drought assets forming part of the State Government Water Strategy Program.	Queensland Competition Authority Final Report on SEQ Grid Services Charges 2011-12 (2011).

B Qualitative characteristics of comparators

ID	Company	Infrastructure Type	Ownership	Sector	Location		Sole Asset?
					Assets	Corporate	
1	Aurizon Network	Coal freight network	Private	Transport	QLD	QLD	Yes
2	ATCO Gas Australia	Gas distribution	Private	Gas	WA	WA	Yes
3	Prime Infrastructure/Brookfield	Coal export terminal	Private	Transport	Qld	Qld	No
4	Westnet Rail	Freight rail network	Private	Transport	WA	Qld	No
5	ARTC (Hunter Valley)	Freight rail network	Public	Transport	NSW	SA	No
6	TPI (Pilbara rail infrastructure)	Freight rail network	Private	Transport	WA	WA	Yes
7	Powerlink	Electricity transmission	Public	Energy	Qld	Qld	Yes
8	Transend	Electricity transmission	Public	Energy	Tas	Tas	Yes
9	Dawson Joint Venture	Gas transmission	Private	Gas	Qld	Qld*	No
10	APT Petroleum Pipelines (RTB)	Gas transmission	Private	Gas	Qld	NSW	No
11	Envestra	Gas distribution	Private	Gas	Qld	SA	No
12	APT Allgas (Qld network)	Gas distribution	Private	Gas	Qld	NSW	No
13	APA Gasnet	Gas transmission	Private	Gas	Vic	NSW	No
14	Linkwater	Bulk water transport	Public	Water	Qld	Qld	Yes

* Location of Anglo American Coal Head Office (Anglo American is the Joint Venture Partner that has been active in developing submissions to regulatory authorities. It appears to be the party that actually provides corporate support for the joint venture, but I have not verified this.

C Sources and derivation of financial information

ID	Company	Item	Origin/Derivation
1	Aurizon Network	Corporate Costs	QCA (2014) Draft Decision on Maximum Allowable Revenue. Corporate overheads have been estimated separately from the rest of operating expenses. The QCA adjusted numbers have been used. These are contained in Table 34 on pp. 78.
1	Aurizon Network	Asset value	QCA (2014) Draft Decision on Maximum Allowable Revenue. Asset values have been calculated using the opening asset value for the regulatory period found in Table 67 on pp. 153 and has been rolled forward using the capital indicator (Table 68, pp. 159), forecast inflation (Table 7, pp.24) and depreciation amounts (Table 79, pp. 183). The asset base includes both electric and non-electric assets.
1	Aurizon Network	Revenue	QCA (2014) Draft Decision on Maximum Allowable Revenue. Revenuw is the unsmoothed annual revenue requirements as decided by the QCA in the decision.
2	ATCO Gas Australia	Corporate Costs	ERAWA (2015), Final Decision on Proposed Revisions to the Access Arrangement for the Mid-West and South-West Gas Distribution Systems. Taken from Table 37 on pp. 110. It is the sum of the corportate operating expenditure and the IT Operating Expenditure lines of the table. The Unaccounted for Gas allowance has been excluded as it is passed through to the UAFG tender holder.
2	ATCO Gas Australia	Asset value	ERAWA (2015), Final Decision on Proposed Revisions to the Access Arrangement for the Mid-West and South-West Gas Distribution Systems. Asset values have been taken from the asset roll-forward in Table 72, pp. 184, they include capital forecast amounts rolled into the asset base.
2	ATCO Gas Australia	Revenue	ERAWA (2015), Final Decision on Proposed Revisions to the Access Arrangement for the Mid-West and South-West Gas Distribution Systems. Revenues are as they are found in Table 8, pp. 27. It represents the approved revenues for the regulatory period.

ID	Company	Item	Origin/Derivation
3	Prime Infrastructure (DBCT) 2005	Corporate Costs	QCA, *Final Decision: Dalrymple Bay Coal Terminal Draft Access Undertaking*, April 2005, p157, less insurance of $0.5 million on insurance costs (see Ernst & Young 2004 p23). Corporate costs include $0.2 million allowance for ongoing regulatory costs.
3	Prime Infrastructure (DBCT) 2005	Asset value	Average of opening and closing asset values for FY 2004/5, as presented in Table 10.1 of QCA, *Final Decision: Dalrymple Bay Coal Terminal Draft Access Undertaking*, April 2005, p155.
3	Prime Infrastructure (DBCT) 2005	Revenue	Smoothed revenue requirement for FY 2004/5, as presented in Table 10.2 of QCA, *Final Decision: Dalrymple Bay Coal Terminal Draft Access Undertaking*, April 2005, p165.

ID	Company	Item	Origin/Derivation
4	Westnet Rail (now Brookfield)	Corporate Costs	Overhead costs are presented in Appendix 3 of the ERA's Final Determination on *WestNet Rail's Proposed Floor and Ceiling Costs for 2009-10*, June 2009. WestNet Rail (WNR) divides overhead costs into three categories (see Paras 188-202 of the ERA report). From this description it is clear that WNR Corporate Support Services and WNR's Group Overheads (totalling $4.9 million) all fall within the definition of corporate costs provided in Table 2. However, the 'Operating and Overheads' sheet of the Westnet Rail - Rail Network Pricing Model (downloaded from the ERA website, http:/www.era.wa.gov.au) makes it clear that the third grouping — WNR Overheads and Insurance — includes a large provision for insurance. Although no details are provided of the type of insurance covered by this provision, it is in my opinion likely that the large majority of this cost relates to forms of insurance that are, in the case of Abbot Point, borne by the terminal operator and passed directly through to customers. The insurance cost of $4.4 million dollars has therefore been excluded from corporate costs for the purposes of this comparison. It is possible that some other included costs such as WNR Overheads and Insurance also lie outside this definition, and could be considered as part of operating costs. The items WestNet 'IT (sic) equipment and software, WestNet Road motor vehicles, Communications Equipment, and Signalling Equipment in particular may include cost elements that are more properly considered operating costs. The total value for these items is given as $1.8 million. No identifiable allowance is made for the costs of meeting economic regulatory requirements, but these may be included in the 'compliance' element of WNR Corporate Support Services.
4	Westnet Rail (now Brookfield)	Asset value	Taken from Appendix 3 of the ERA's Final Determination on *WestNet Rail's Proposed Floor and Ceiling Costs for 2009-10*, June 2009. It should be noted that the basis on which asset values are reported by ERA differs from that used by most regulators. The ERA approach will lead to higher stated asset values.
4	Westnet Rail (now Brookfield)	Revenue	Assumed equal to the total ceiling cost estimates as defined in Appendix 3 of the ERA's Final Determination on *WestNet Rail's Proposed Floor and Ceiling Costs for 2009-10*, June 2009.

ID	Company	Item	Origin/Derivation
5	ARTC (Hunter Valley)	Corporate Costs	Based on data for corporate overheads presented in Table 7 of the ARTC Submission to ACCC Review of compliance with the Hunter Valley Access Undertaking for period July to Dec 2011. I have estimated annual costs simply by doubling the cost for the six month period. The definition of corporate overheads presented in Section 7.3.3. of the ARTC submission is broadly consistent with the definition of Table 1 of this report, with the exception that this definition does not include insurance costs.
5	ARTC (Hunter Valley)	Asset value	Based on data for average asset base presented in Table 7 of the ARTC Submission to ACCC Review of compliance with the Hunter Valley Access Undertaking for period July to Dec 2011.
5	ARTC (Hunter Valley)	Revenue	Based on data for revenue presented in Table 7 of the ARTC Submission to ACCC Review of compliance with the Hunter Valley Access Undertaking for period July to Dec 2011. I have estimated annual costs simply by doubling the cost for the six month period.
6	TPI (Pilbara rail infrastructure)	Corporate Costs	Taken from TPI 3rd Party Access model downloaded from ERA website (http:/www.era.wa.gov.au). The model includes four categories of operating costs: Rail Track Maintenance; Rail Signals Maintenance; Support; Overheads. The first two categories are clearly direct operating costs rather than corporate costs. However, neither the model nor the review of it by PwC/AECOM (Review of Floor and Ceiling Cost Proposal of the Pilbara Infrastructure Pty Ltd, 2011) provide any further detail on precisely what is contained in each of these categories. I have assumed that the 'Overheads' category ($9.2 million) aligns broadly with the corporate costs as defined in Table 2, but the 'Support' category ($7.9 million) relates to on-costs that are more directly associated with operations and that would normally be borne by an operating entity rather than a listed asset owner. Insurance costs are not explicitly identified, and it is unclear which (if either) of the two categories includes these costs. Applying the rate of 0.2% of asset value derived from Westnet data to the TPI assets provides an estimate of $2.1 million for these costs. This provides a value of $7.1 million for corporate overheads net of insurance costs.

ID	Company	Item	Origin/Derivation
6	TPI (Pilbara rail infrastructure)	Asset value	Taken from PwC/AECOM Review of Floor and Ceiling Cost Proposal of the Pilbara Infrastructure Pty Ltd, 2011, Table 14. It should be noted that the basis on which asset values are reported by ERA differs from that used by most regulators. The ERA approach will lead to higher stated asset values. In the case of the TPI infrastructure, which is very new by railway standards, I do not expect that this methodological difference will have a material effect on the valuation.
6	TPI (Pilbara rail infrastructure)	Revenue	Assumed equal to the total ceiling cost of service, as presented in Table 18 of PwC/AECOM Review of Floor and Ceiling Cost Proposal of the Pilbara Infrastructure Pty Ltd, 2011
7	Powerlink	Corporate Costs	'Corporate support' costs as determined in the AER Final decision on Powerlink Transmission determination 2012–13 to 2016–17 and presented in Table 7.1.
7	Powerlink	Asset value	Regulatory Asset Base as determined in the AER Final decision on Powerlink Transmission determination 2012–13 to 2016–17 and presented in Table 3.2.
7	Powerlink	Revenue	Unsmoothed revenue requirement as determined in the AER Final decision on Powerlink Transmission determination 2012–13 to 2016–17 and presented in Table 1.2.
8	Transend	Corporate Costs	Corporate costs as determined in the AER Draft decision *on Transend Transmission determination 2009–10 to 2013–14* and presented in Table 6.29. (The Final Decision does not clearly identify corporate costs, but there is no indication that the AER's judgment in its final decision departs from that in the draft on this issue). Corporate costs include external insurance costs but not self-insurance. Neither the Draft nor the Final Decision provide an explicit breakdown of corporate costs that allows insurance costs to be directly identified. However, Table 6 of the Draft Determination identifies self-insurance costs at $0.8 million in 2009-2010. Table 7.1 of the report provides a figure of $1.7 million for 'insurance and self-insurance' in the same year. Actual insurance payments can therefore be estimated as $0.9 million. Deducting this figure from the $9.6 million of 'corporate costs' provided in Table 6.29 provides an estimate for corporate costs, excluding insurance, of $8.7 million.

ID	Company	Item	Origin/Derivation
8	Transend	Asset value	Regulatory asset base as determined in the AER Final decision on Transend Transmission determination 2009–10 to 2013–14 and presented in Table 9.4.
8	Transend	Revenue	Unsmoothed revenue requirement as determined in the AER Final decision on Transend Transmission determination 2009–10 to 2013–14 and presented in Table 9.7.
9	Dawson Joint Venture	Corporate Costs	Estimated from information in ACCC Final Decision on Access arrangement for the Dawson Valley Pipeline (2007). I have estimated the value for corporate costs as the difference between the total non-capital costs $378,441 (p17) and the allowance of $163,000 allowed for direct operating costs (p16). This approach is in my view justified by the discussion documented in pp16-17 of the Final Decision. The source document is silent on whether this total includes insurance.
9	Dawson Joint Venture	Asset value	Taken from ACCC Final Decision on Access arrangement for the Dawson Valley Pipeline (2007), p vi.
9	Dawson Joint Venture	Revenue	This is the unsmoothed total revenue taken from ACCC Final Decision on Access arrangement for the Dawson Valley Pipeline (2007), Table 5.1.
10	APT Petroleum Pipelines (RTB)	Corporate Costs	Based on AER Final Decision on APT Petroleum Pipeline Pty Ltd Access arrangement final decision Roma to Brisbane Pipeline 2012–13 to 2016–17 (2012), Table 3.1. Insurance is not included in corporate costs in this table, but is instead included in a separate item 'licences and insurance'. I have reviewed the description of corporate costs presented in the AER Draft Decision (Section 9.4.4) and am satisfied that, apart from the exclusion of insurance, it is broadly consistent with the definition given in Table 2.
10	APT Petroleum Pipelines (RTB)	Asset value	Taken from AER Final Decision on APT Petroleum Pipeline Pty Ltd Access arrangement final decision Roma to Brisbane Pipeline 2012–13 to 2016–17 (2012), Table 4.3. I have taken the mean of the open and closing values for 2012-13.
10	APT Petroleum Pipelines (RTB)	Revenue	Unsmoothed revenue requirement for 2012-13 taken from AER Final Decision on APT Petroleum Pipeline Pty Ltd Access arrangement final decision Roma to Brisbane Pipeline 2012–13 to 2016–17 (2012), Table 1.1.

ID	Company	Item	Origin/Derivation
11	Envestra	Corporate Costs	Based on AER Final Decision on Access arrangement proposal for the Qld gas network 1 July 2011 to 30 June 2016 (2011), Table 8.1. I have included only the cost item 'Admin & General' from this table. The AER did not accept the total operating costs proposed by Envestra and presented in Table 8.1 of the Final Decision, reducing the total by approximately $1 million dollars. In presenting this reduction, AER does not specify how much relates to the Administration and General item. While the AER's objections did not relate specifically to the 'Administration and General' item, two-thirds of the adjustment required by the AER relates to the choice of input cost escalator; this will affect the Administration and General category as well as the other categories. I have therefore made a pro rata adjustment to the value proposed for this item in Table 8.1. The effect is to reduce the estimated corporate costs from $3.3 million to $3.2 million. I have reviewed the description of costs falling within this group presented in Envestra's Queensland Access Arrangement Information (Public version), dated 1 October 2010, and am satisfied that it is broadly consistent with the definition contained in Table 2. However, some of the costs included in Network Development and Marketing appear also to fall within this definition. Insufficient information was available to allow me to confidently split costs in this category (which totalled $1 million) between corporate costs and direct operating costs. I have taken the conservative approach and not included any costs from this category in corporate costs. Envestra's initial proposal (*Envestra, Queensland Access Information* 1 October 2010) makes it clear that insurance costs are included in 'Administration and General' costs (p75).
11	Envestra	Asset value	Taken from AER Final Decision on Access arrangement proposal for the Qld gas network 1 July 2011 to 30 June 2016 (2011), Table 3.13. I have taken the mean of the open and closing values for 2011-12.
11	Envestra	Revenue	Unsmoothed revenue requirement taken from AER Final Decision on Access arrangement proposal for the Qld gas network 1 July 2011 to 30 June 2016 (2011), Table 9.2.

ID	Company	Item	Origin/Derivation
12	APT Allgas (Qld network)	Corporate Costs	Based on AER APT Allgas Access arrangement proposal for the Qld gas network 1 July 2011 to 30 June 2016 (2011), Table 7.1. This table sets out APT Allgas's proposed allowance for operating expenditure, which was accepted without change by AER (p xi). I have added together three line items from the operating expenditure proposal that, in my view, fall within the definition of corporate costs set out in Table 2. These are corporate costs ($1.4 million); admin and strategic planning ($0.8 million); and marketing ($1.1 million). It is not completely clear from the source documentation whether insurance costs are included in the 'corporate costs' element, but the magnitude of the costs included in this category suggest that they are not, and I have not been able to locate any suggestion in either the APT Allgas proposal or the AER Draft and Final decisions to suggest that they are. Moreover, a report from KPMG benchmarking corporate costs that was provided to AER by APT Allgas makes it clear that insurance costs were excluded from the benchmarking exercise (KPMG 2010, Corporate Cost Benchmarking - APA Allgas network, p23).
12	APT Allgas (Qld network)	Asset value	Based on AER APT Allgas Access arrangement proposal for the Qld gas network 1 July 2011 to 30 June 2016 (2011), Table 3.8. I have taken the mean of the open and closing values for 2011-12.
12	APT Allgas (Qld network)	Revenue	Unsmoothed revenue requirement for 2011-12 as presented in AER APT Allgas Access arrangement proposal for the Qld gas network 1 July 2011 to 30 June 2016 (2011), Table 8.2.

ID	Company	Item	Origin/Derivation
13	APA Gasnet	Corporate Costs	APA GasNet Australia (Operations) Pty Ltd *Access Arrangement Submission 1 January 2013 to 31 December 2017* (2012) forecasts corporate costs of $10.0 million in 2013 (Table 9.6) and total operating costs of $32.6 million. I have reviewed the description of corporate costs contained in the APA Gasnet submission (p 156) and consider that these costs all fall within the definition of corporate costs provided in Table 2. However, Gasnet's costs include an 'other' category ($6.8 million)), which also includes some of the costs that are included in Table 2: notably, travel, communications, training, insurance, and consultants/legal (p 155). In the absence of sufficient information to partition 'other' costs between those that should and those that should not be included in corporate costs, I have taken a conservative approach and included as corporate costs only those explicitly designated as such in the APA Gasnet submission. The AER in *Access arrangement draft decision APA GasNet Australia (Operations) Pty Ltd 2013–17* (2012) does not accept this estimate, and proposes a total operating expenditure $27.0 million. The AER does not break this total down into the cost categories used by APA Gasnet in its submission. In the absence of more detailed information I have applied the reduction proposed by AER proportionately to each item.
13	APA Gasnet	Asset value	Taken from AER *Access arrangement draft decision APA GasNet Australia (Operations) Pty Ltd 2013–17* (2012), Part1, Table 5.2. I have used the average of the opening and closing values for 2013.
13	APA Gasnet	Revenue	Unsmoothed revenue requirement for 2013 taken from AER Access arrangement draft decision APA GasNet Australia (Operations) Pty Ltd 2013–17 (2012), Part1, Table 3.1.

ID	Company	Item	Origin/Derivation
14	Linkwater	Corporate Costs	My estimate of corporate costs for Linkwater are based primarily on QCA *Final Report SEQ Grid Service Charges 2011-12* (2011), Table 6.13. This presents a breakdown of Linkwater's corporate costs, as proposed by Linkwater and accepted by the QCA. I have reviewed this table and the related commentary on page 177 of the report, and am satisfied that, with the exception of one item, the items in the table reflect costs that are broadly consistent with the definition of corporate costs contained in Table 1. The exception is the item 'Property Leasing', which accounts for $1.4 million of the total $14.2 million of corporate costs. This is not an item that was considered when drawing up the definition of corporate costs, as property leasing cost are not likely to be an item in the corporate costs of a coal terminal owner/manager. It could be argued that, when such costs are incurred by an infrastructure operator, they are likely to be borne at the corporate level, and that they therefore constitute a legitimate corporate costs. In this line of reasoning it would be accepted that, as the comparator set consists of companies operating different sorts of infrastructure, the corporate costs of each company will contain some costs that are specific to that type of infrastructure operation. The appropriate approach in high level benchmarking is therefore to take this as it comes, and not exclude corporate costs just because they are of a nature not likely to be incurred by the hypothetical company. To do so introduces a bias in the benchmarking, since it is quite possible that the hypothetical company incurs corporate costs of a type that the comparator company in question does not.. While recognising that this is a defensible approach, I have adopted a more conservative course, and excluded property leasing costs from corporate costs for benchmarking purposes. Excluding property leasing expenses provides a value for corporate costs falling within the definition provided by Table 2 (excluding insurance) of $12.8 million.
14	Linkwater	Asset value	Based on Table 6.9 of QCA *Final Report SEQ Grid Service Charges 2011-12* (2011). I have used the average of opening and closing asset values for the fiscal year 2011-2012.

ID	Company	Item	Origin/Derivation
14	Linkwater	Revenue	Based on Total GSC - Maximum Allowable Revenue in Table 6.27 of QCA *Final Report SEQ Grid Service Charges 2011-12* (2011)

D Statistical analysis

D.1 High level benchmarking

In order to verify more formally the apparent relationship between corporate costs and scale that appears evident in Figure 1 and Figure 2, the statistical analysis outlined below was undertaken using the statistical analysis facilities in the MS Excel Data Analysis Toolpack.

A simple bivariate linear regression was undertaken on the untransformed data.

The results of that analysis are set out below.

(a) Corporate costs regressed against revenue

Regression Statistics	
Multiple R	0.789
R Square	0.622
Adjusted R Square	0.590
Standard Error	7.235
Observations	14

ANOVA	
F Value	19.730
Significance level	0.00083

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	2.997	2.619	1.144	0.275
Co-efficient	0.033	0.007	4.442	0.001

(b) Corporate costs regressed against asset values

Regression Statistics	
Multiple R	0.615
R Square	0.379
Adjusted R Square	0.327
Standard Error	9.274
Observations	14

ANOVA	
F Value	7.31
Significance level	0.01917

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	4.853	3.325	1.460	0.170
Co-efficient	0.004	0.001	2.704	0.019

My conclusions on the basis of this analysis and visual inspection of the data are that:

- There is a significant statistical relationship between scale and corporate costs, irrespective of whether scale was expressed in terms of revenue or asset values.
- The use of an absolute value benchmark is therefore not appropriate.
- The value of the intercept is positive in both the relationship between corporate costs and revenue and the relationship between corporate costs and asset value, and the value of the co-efficient was, in both cases, positive. Corporate costs therefore increase with enterprise scale (however measured) but less than proportionately.
- The relationship of corporate costs with revenue is stronger and better defined than the relationship of corporate costs with asset values. It is therefore preferable to use this relationship to estimate corporate costs for DBCT.
- In the regression of corporate costs against revenue, the value of the intercept is not statistically significant. The analysis does not therefore rule out the possibility that corporate costs are simply proportional to revenue.
- However, in view of the likelihood that there would be a material level of corporate costs associated with even a very small listed entity, it is in my view more appropriate to use a 'hybrid' relationship to benchmark these costs (that is, a benchmark that includes both a fixed value component and a ratio component).
- Based on the statistical analysis documented above, the 'best fit' relationship for a hybrid benchmark is:

  Corporate cost = $3 million + 3.3% of revenue,

  $3 million being taken from the intercept estimated in the analysis documented in item (a) above, and 3.3% (= 0.033) being the coefficient obtained in that analysis.

E Database used in KPMG study

	Revenue	Total board	CEO Remuneration	Audit
Centrebet	$72,367,000	$292,785	$661,678	$461,000
Waterco	$71,473,000	$155,613	$423,267	$196,000
Biota	$71,465,000	$456,088	$497,578	$173,000
Payce Consolidated	$71,439,000		$451,855	$522,000
Ainsworth	$70,274,000	$254,085	$238,863	$180,000
Euroz	$70,144,000		$746,559	$171,000
Charter Hall	$66,453,000		$828,074	$902,000
HFA Holdings	$65,577,000	$335,901		$531,000
CTI Logistics	$60,866,000	$116,736	$495,819	$102,000
RP Data	$57,950,000	$382,235	$650,902	$648,000
The Trust Company	$57,131,000	$548,508	$461,166	
SDI	$54,023,000	$182,880	$494,696	$286,000
Altium	$53,018,000	$274,892	$269,403	$696,000
Infomedia	$50,623,000	$321,260	$422,659	$228,000
Lemarne	$49,538,000	$228,476	$917,676	$150,000
Pan Pacific	$45,630,000	$294,320	$861,181	$304,000
LinQ	$45,436,000	$254,440	$934,682	$166,000
Amadeus	$44,282,000	$454,632	$824,888	$176,000
Intrepid	$42,132,000	$440,620	$1,040,915	$142,000
Hunter Hall	$39,054,000	$758,328		$155,000
Bremer Park	$37,780,000	$108,672	$254,304	$99,000
Trinity	$36,399,000	$764,975	$487,283	$159,000
Djerriwarrh	$35,092,000	$545,230	$155,780	$159,000
Petsec	$32,132,000	$329,616	$719,923	$139,000
Adcorp	$31,118,000	$126,784	$428,344	$246,000
RCG	$30,502,000	$378,963	$451,101	$202,000
Nexus	$30,346,000			$187,000
Hutchison	$22,243,000	$832,748	$767,997	$114,000
Centro	$12,252,000	$1,170,060		$769,000
Consolidated Media	$13,232,000	$346,060		$769,000

	Revenue	Total board	CEO Remuneration	Audit
Median	$47,584,000	$332,759	$495,819	$187,000
1st Quartile		$254,174	$428,344	$159,000
3rd Quartile		$455,724	$767,997	$461,000
Min		$108,672	$155,780	$99,000
Max		$1,170,060	$1,040,915	$902,000

F Companies used: component benchmarking

No	Code	Company Name	Sector	Business Description
1	TOX	Tox Free Solutions	Industrial	Tox Free Solutions Limited (TOX) is an integrated waste management and industrial service providers. The company caters primarily to the resource sector and conduct services activities only in Australia. TOX operates in three divisions namely: Waste Services, Industrial Services and Technical & Environment Services (previously Hazardous Waste Services).
2	ASL	Ausdrill	Industrial	Ausdrill's key focus is providing a broad range of services to mining clients. In Australia the services offered include drill and blast, grade control, water well drilling and equipment sales, hire and parts. In Africa, the Group offers load and haul and crusher feed services in addition to all the production-related services that the Group provides in Australia. These service offerings are complemented by significant in-house manufacturing capabilities that produce drilling rigs, light weight dump truck trays, parts and consumables, as well as supply and logistics that provide mining supplies and logistical services, both of which are used in Ausdrill's core services, and sold to external customers. In addition to the above services, the Group offers mineral analytics and exploration drilling services.
3	MRM	MMA Offshore	Industrial	With its head office located in Fremantle, Western Australia, Mermaid Marine Australia Limited ("MMA") has grown substantially since listing on the Australian Stock Exchange in 1999 and is now one of the largest marine services providers in the Asia Pacific region. MMA's key areas of operation for its vessel fleet include Australia, South East Asia, the Middle East and East and West Africa. MMA's international operating entity, Mermaid Marine Asia Pte Ltd ("MMAS"), is responsible for managing the international vessel fleet including the newly acquired Jaya fleet.

No	Code	Company Name	Sector	Business Description
4	BLY	Boart Longyear	Industrial	Boart Longyear is headquartered in Salt Lake City, Utah, USA, and listed on the Australian Securities Exchange (ASX). It is a leading provider of drilling services, drilling equipment, and performance tooling for mining and drilling companies globally. It also has a substantial presence in aftermarket parts and service, energy, mine de-watering, oil sands exploration, and production drilling.
5	SWL	Seymour Whyte	Industrial	Seymour Whyte (ASX:SWL) is an Australian infrastructure, engineering and construction company delivering major essential infrastructure projects nationally. Founded in 1987 by John Seymour and Garry Whyte, the company has grown exponentially since this time, involved in more than $5 billion of complex infrastructure.
6	MXI	Maxitrans Industries	Industrial	MaxiTRANS is a leading supplier of road transport equipment for the general freight, temperature controlled freight and bulk transport market sectors, providing providing tailored solutions for almost every sector of the road transport industry. MaxiTRANS is also a leader in repair and service support to the Australasian transport industry through its network of Company owned and operated repair and service divisions and its franchised dealer networks.
7	BSA	BSA Limited	Industrial	BSA is an Australian communications and technical services company. It is focused on the delivery of infrastructure projects, services and equipment to the building services industry. BSA is also one of the leading communications and technical services companies in Australia, providing installation and maintenance solutions to the broadcast and telecommunications industries.
8	AJL	AJ Lucas Group	Industrial	Lucas is a provider of specialist infrastructure works to the energy, resources and utility sectors. Lucas has always been a niche operator and plans to continue as such. These niche skills are often key features in large scale major projects where Lucas' specialist knowledge is of particular value. Lucas' strategy is to enter into joint ventures with others to execute such projects. This is a deliberate strategy intended to deliver higher returns on investment with reduced risk. We rely on innovation and proprietary knowledge to give an advantage and deliver superior solutions for our clients.

No	Code	Company Name	Sector	Business Description
9	CMI	CMI Limited	Industrial	Established in 1991, and listed on the ASX in 1993, CMI is an Australian-based company whose operations centre around the manufacture and distribution of electrical cables and components for industrial and mining applications through CMI Electrical. CMI's head office is based in Brisbane.
10	EPW	ERM Power Limited	Utilities	With more than 30 years in the energy industry, ERM Power is a generator of electricity and, since 2007, a specialist electricity retailer to large commercial and industrial customers.
11	IFN	Infigen Energy	Utilities	Infigen Energy is a developer, owner and operator of renewable generation with interests in 24 wind farms (1,646 MW equity interest) across Australia and the US. Infigen Energy generates enough power across its portfolio to meet the needs of over 500,000 homes.
12	PEA	Pacific Energy	Utilities	Pacific Energy Limited (ASX: PEA) is an ASX-listed energy supply business. It delivers low-cost 'off-grid' power supply to the Australian resource sector and 'grid-connected' renewable hydro power. PEA owns and operates 21 power stations with a total power generation capacity approaching 225MW. These power stations utilise either gas, diesel, dual fuel or water to generate electricity for its long-term customers. The Company's core business division Kalgoorlie Power Systems (KPS) has been delivering its resource sector clients, including some of the world's biggest mining companies, 'off-grid' power supply solutions for in excess of 25 years
13	EPX	Ethane Pipeline	Utilities	The Fund owns the Moomba to Sydney Ethane Pipeline that supplies ethane from the Cooper Basin production facility at Moomba, South Australia (Moomba Facility) to the ethylene plant at Botany (Botany Plant) owned by the Fund's sole customer Qenos Pty Limited (Qenos). The pipeline was purpose-built to transport ethane gas from the Cooper Basin gas fields to Qenos, and was later sold with the current, long term Product Transportation Agreement (PTA), agreed with Qenos in 2000, in place.

No	Code	Company Name	Sector	Business Description
14	EWC	Energy World	Utilities	Energy World Corporation Limited (EWC) is an integrated energy company based in Hong Kong and listed in Australia and on the OTCQX in the U.S. EWC is an independent, integrated energy company primarily engaged in the production and sale of power and natural gas. In power generation, it owns and operates two gas-fired power plants that are located in Sengkang, South Sulawesi, Indonesia and in Alice Springs. EWC gas interests comprise interests in the Sengkang Contract Area in South Sulawesi, Indonesia and also interests in various gas fields in Queensland.
15	ENE	Energy Developments	Utilities	Energy Developments Limited (ENE) is an international provider of greenhouse gas emissions energy and remote energy solutions. ENE currently manages an international portfolio of over 900MW of power generation facilities in Australia, the United States and Europe, utilising a range of fuel sources operating in four main areas: remote energy, natural gas (NG, CNG & LNG) and diesel, landfill gas and waste coal mine gas.
16	IFZ	Infratil	Utilities	Investment is principally in transport and energy which are sectors where Infratil's management have considerable experience. Within those sectors the priority is for companies that have an opportunity to grow so that if they are well managed they will be able to invest additional capital to improve earnings and valuations.
17	MYT	Mighty River Power	Utilities	Mighty River Power generates about 17% of New Zealand's electricity. The Company It operates the nine hydro stations on the Waikato River, five geothermal power stations in the Central North Island and a multi-unit gas-fired station in Auckland. More than 90% of its electricity production is from renewable sources. Mighty River Power sells electricity through multiple channels and retail brands to commercial and private customers.
18	HZN	Horizon Oil	Energy	Horizon Oil Limited ('Horizon Oil') is an oil and gas exploration, development and production company, incorporated and domiciled in Australia. Horizon Oil's portfolio is comprised of petroleum interests in China, New Zealand and PNG and includes producing assets in the Beibu Gulf of China and the Maari/Manaia fields in New Zealand.

No	Code	Company Name	Sector	Business Description
19	AWE	AWE Limited	Energy	AWE is an Australian energy company focused on upstream oil and gas exploration and production, listed on the Australian Stock Exchange (ASX:AWE). The company was formed in 1997 to appraise oil and gas discoveries in its initial asset portfolio and to build a significant international petroleum exploration and development entity through further international asset acquisitions. AWE's focus is on exploration and appraisal-type assets, in regions of proven prospectivity and where there is a high chance of commercial success.
20	NMS	Neptune Marine	Energy	Neptune is a provider of integrated inspection, repair and maintenance solutions to the oil and gas, marine and renewable energy industries. Headquartered in Perth, Western Australia, Neptune's has operational centres located throughout Australia in Perth, Darwin, Darwin, Melbourne and Gladstone and the UK and Asia.

G Key data: component benchmarking

Code	Sector	Revenue	Fixed Assets	CEO Remuneration		Board (non-executive members only)		Audit costs ($)
		$ million	$million	Cash inc super ($)	Rights and Options	Number	Total remuneration	
TOX	Industrial	285.5	135	$881,419	$104,220	4	$435,780	231,000
GWA	Industrial	578.0	97	$1,857,365	$235,433	5	$971,788	
ASL	Industrial	827.9	777	$ 873,032	$1,021,935	5	$646,897[1]	903,156
MRM	Industrial	594.6	896	$1,278,433	$432,946	5	$721,400	770,368
BLY	Industrial	USD866.6	USD279	USD1,921.413[2]	-	5	USD1,295,435	USD2,371,000
SWL	Industrial	311.0	28	$859,967	$202,415	6	$580,000	119,000
MXI	Industrial	352.0	63	$989,679	$181,159	5	$368,904	292,400
BSA	Industrial	491.0	15	$584,548[3]	-	5	$545,042	$531,300
AJL	Industrial	227.9	80	$639,874	-	5	$496,101[4]	$495,977
CMI	Industrial	92.4	5	$310,598[5]	$655,000	2	$286,218	$261,859
EPW	Utilities	2076.5[6]	454	$1,024,332	$372,691	4	$749,043	$582,910
IFN	Utilities	273.0[10]	1,895	$856,385	$386,236	4	$542,750	$1,314,830
PEA	Utilities	47.9	129	$484,687	-[11]	3	$197,951	$91,000

Code	Sector	Revenue	Fixed Assets	CEO Remuneration		Board (non-executive members only)		Audit costs ($)
		$ million	$million	Cash inc super ($)	Rights and Options	Number	Total remuneration	
EPX	Utilities	22.2	210	n.a.[12]		3	$199,381	$83,800
EWC	Utilities	USD158.8	USD1,109[13]	USD450,000	-	5	USD151, 952	USD469,0090
ENE	Utilities	422.8	790	1,568,632	23,712	5	$675,000	$614,172
IFZ	Utilities	NZD2,345.4	NZD4,135.6[7]	NZD1,500,000[9]		6	NZD579,810[8]	NZD1,300,000
MYT	Utilities	NZD1,705	NZD5,015	NZD2,184,848[14]		7	NZD756,290	Not disclosed[17]
HZN	Energy	USD138.5	USD316,596[15]	USD1,250,231	USD418,685	4	USD410,204	USD152,876
AWE	Energy	328.2	803,655[16]	1,200,632	304,288	6	875,404	398,151
NMS	Energy	136.1	29	1,321,563	223,100	3	321,738	341,086

Notes

1. Includes $122,497 in share options to one non-executive director
2. Includes USD833,333 in Long Term Incentives. In many companies, these are paid in the form of share allocations and options. However, in this case it was paid in cash, and so is included as cash salary.
3. Excludes termination benefits of $194,465 paid to outgoing CEO on retirement.
4. May be slightly understated because one of the non-executive directors served for some time as Acting CEO: fees during that period are not included in the disclosed fees paid to non-executive directors in the Annual Report.
5. Value for 2012–13 used because structural changes undertaken part way through the 2014–15 year make determining CEO remuneration for that year difficult
6. Include revenue from electricity sales of $1,992.4 million, which is offset by a cost of electricity sales of $1,931.7 million.
7. Includes $60 million of 'investment properties.
8. In addition, Directors were paid a total of NZD127,060, AUD 69,945 and GBP20,625 by subsidiary companies.
9. Not explicitly disclosed, but AR provides distribution of no of employees by salary level,; the top band is $1.50 to $1.55 million, and only one employee falls into this category.
10. Excludes revenue from minority interests in other companies.
11. In 2013, CEO received $452,000 in options as part of remuneration package.
12. APT (MIT) Services Pty Limited, a member of APA Group (Fund Manager), provides the Fund with fund management and administration services, and other services. With the Fund Manager providing such services, neither the Fund nor the Responsible Entity currently employs executives or other employees.
13. Includes oil and gas assets of $110 million as well as PPE.
14. This sum includes an exceptional payment of NZD500,000, which was an agreed retention payment paid to the CEO in fulfilment of an agreement to make such a payment is the CEO stayed with Mighty River to 31 August 2014.
15. Mainly comprised of oil and gas assets (USD311 million).
16. Mainly comprised of oil and gas assets ($802 million)
17. The New Zealand Auditor General is the auditor for MYT, and appointed Ernst & Young to undertake the audit. I presume that the fact that MYT has no control over who is appointed auditor allows it to circumvent the usual disclosure requirements.

H Statistical analysis – component benchmarking

H.1 Board remuneration

A simple bivariate linear regression was undertaken on the untransformed data for all companies with revenues less than $1 billion.

The results of that analysis are set out in Table 22 below.

Table 22: Results—board remuneration, companies with <$1billion revenue

Regression Statistics		ANOVA	
Multiple R	0.825	F Value	32.03
R Square	0.681	Significance level	0.000045
Adjusted R Square	0.660		
Standard Error	177132		
Observations	17		

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	201,475	71,492	2.818	0.013
Co-efficient	967	171	5.660	0.000

As a sensitivity test, the analysis was repeated on a reduced data set than included only companies with revenues less than $0.5 billion. The results of this supplementary analysis are shown in Table 23 below.

Table 23: Results—board remuneration, companies with <$0.5billion revenue

Regression Statistics		ANOVA	
Multiple R	0.722	F Value	13.10
R Square	0.522	Significance level	0.0035
Adjusted R Square	0.482		
Standard Error	144,392		
Observations	14		

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	192,970	78,033	2.473	0.029
Co-efficient	1,037	286	3.620	0.004

A further sensitivity test was conducted using all data points in the sample. The results of this analysis are shown below.

Table 24: Results—board remuneration, all companies

Regression Statistics	
Multiple R	0.446
R Square	0.199
Adjusted R Square	0.155
Standard Error	262,152
Observations	20

ANOVA	
F Value	4.472
Significance level	0.0486

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	429,724	79,791	5.386	0.000
Co-efficient	200	95	2.115	0.049

My conclusions on the basis of this analysis and visual inspection of the data are that:

- There is a statistically significant relationship between board remuneration and corporate revenue, at least for corporate revenues up to $1billion.
- The intercept in the relationship is statistically significant, providing a strong indication that there is a minimum level of board remuneration that must be provided even at very low levels of revenue.
- Based on the statistical analysis documented above, the 'best fit' relationship for a hybrid benchmark is:

  Board remuneration = $0.201 million + $967 per $1million of revenue,

  $0.201 million being taken from the intercept estimated in the analysis documented in the table above, and $967 being the coefficient obtained in that analysis.

- The alternatives of including all data points, or limiting the range to companies with a revenue of less than $0.5billion, produce inferior statistical results.
- However, in both cases the relationships estimated produce an estimate of board remuneration that is not materially different from that produced by the preferred method.

I have also attempted to provide some idea of the likely range of this estimate. This is commonly done in statistical analysis by computing an estimation interval for the variable that is being modelled. This is done by computing upper and lower limits using the formulas:

$$\hat{y}_{upper} = \hat{y}_0 + t_{crit} S_e \; ; \hat{y}_{lower} = \hat{y}_0 - t_{crit} S_e$$

Where

$\hat{y}_0$ is the central estimate of the value of the dependent variable when the value of the independent value is x_0. $\hat{y}_0$ is calculated as $\hat{y}_0 = a + b.x_0$ where a, b are the intercept and the coefficient (respectively) of the regression equation.

$\hat{y}_{upper}, \hat{y}_{lower}$ are the upper and lower limits of the range

t_{crit} is the value of the t-statistic for the target level of probability

S_e is the prediction standard error.

The prediction standard error is calculated as:

$$S_e = S_{yx}\sqrt{1 + \left(\frac{1}{n}\right) + \frac{(x_0 - \bar{x})^2}{SS_x}}^2$$

Where

S_{yx} is the standard error of the estimate

SS_x is the sum of the squares of the deviations of the independent variable

n is the sample size

$\bar{x}$ is the mean of the independent variable.

In much statistical analysis, the focus is on defining a range within which we have a very high degree of confidence (typically 95% or 99%) the 'true' value lies. But this is not always appropriate. In many other tasks (including the present one) we must decisions based on a point estimate of the most likely value of the variable we are estimating ($\hat{y}_0$). But we are nevertheless interested in obtaining some indication of the range of values that an informed person might consider reasonable to use for that value. When dealing with raw data, this is often done—including in this report—by using the interquartile range: that is, the range within which the middle 50% of observations fall. This is preferred to using the full range of the data (that is, the range defined by the minimum and maximum observed values) partly because economic data, being non-experimental, often contains outliers that result in a very large total range, but which offer us little insight into 'typical' values.

In considering the results of regression analysis, the conceptual equivalent of using a minimum-to-maximum range is to adopt an estimation range within which we have a 95% (or even more extreme, a 99%) level of confidence that the true value lies. The

conceptual equivalent of using an inter-quartile range is to adopt an estimation range within which we have a 50% level of confidence that the true value lies. This is the interval that we have used in computing lower and higher estimates for elements of the component benchmarking analysis.

The upper and lower estimates for remuneration of non-executive board members are given, together with the key parameters used in calculating them, in Table 25.

Table 25: Range limits calculation: board remuneration

Parameter	Value	Parameter	Value
$\boldsymbol{n}$	17	S_{xy}	$177,132
$\overline{\boldsymbol{x}}$	$354million	SS_e	$182,711
$\boldsymbol{SS_x}$	$1,074,028	t_{crit}	0.6924
$\hat{\boldsymbol{y}}_{\boldsymbol{lower}}$	$327,000	$\hat{y}_{upper}$	$579,000

H.2 CEO Remuneration

A simple bivariate linear regression was undertaken on the untransformed data for all companies with revenues less than $1 billion.

The results of that analysis are set out in Table 26 below.

Table 26: Results—CEO remuneration, companies with <$1billion revenue

Regression Statistics	
Multiple R	0.608
R Square	0.370
Adjusted R Square	0.325
Standard Error	430,438
Observations	16

ANOVA	
F Value	8.216
Significance level	0.01244

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	794,403	188,369	4.217	0.0009
Co-efficient	1,252	437	2.866	0.0124

The results of a supplementary analysis including only firms in the data set with revenue of less than $0.5billion are set out in Table 27 below.

Table 27: Results—CEO remuneration, companies with <$0.5billion revenue

Regression Statistics		ANOVA	
Multiple R	0.110	F Value	0.1335
R Square	0.012	Significance level	0.7197
Adjusted R Square	-0.078		
Standard Error	465,139		
Observations	13		

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	988,272	290,701	3.400	0.006
Co-efficient	379	1,028	0.368	0.720

The results of the further supplementary analysis including all firms in the data set are set out in Table 28 below.

Table 28: Results—CEO remuneration, all companies

Regression Statistics		ANOVA	
Multiple R	0.4005	F Value	3.2483
R Square	0.1604	Significance level	0.08925
Adjusted R Square	0.1110		
Standard Error	479,475		
Observations	19		

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	1,100,112	152,931	7.1935	0.0000
Co-efficient	319	177	1.8023	0.0893

The upper and lower estimates for CEO remuneration are given, together with the key parameters used in calculating them, in Table 29.

Table 29: Range limits calculation: board remuneration

Parameter	Value	Parameter	Value
$\boldsymbol{n}$	16	S_{xy}	$430,438
$\overline{\boldsymbol{x}}$	$354million	SS_e	$445,578
$\boldsymbol{SS_x}$	$970,868	t_{crit}	0.6924
$\hat{\boldsymbol{y}}_{\boldsymbol{lower}}$	$811,000	$\hat{y}_{upper}$	$1,428,000

H.3 External Audit

A simple bivariate linear regression was undertaken on the untransformed data for all companies with revenues less than $1 billion. For the reasons outlined in the main body of the report, the data for Boart Longyear was also excluded.

The results of that analysis are set out in Table 30 below.

Table 30: Results—External audit, excluding outliers

Regression Statistics	
Multiple R	0.5466
R Square	0.2988
Adjusted R Square	0.2487
Standard Error	294,637
Observations	16

ANOVA	
F Value	5.9658
Significance level	0.02845

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	198,489	129,213	1.5361	0.1468
Co-efficient	876	359	2.4425	0.0285

The upper and lower estimates for external audit costs given, together with the key parameters used in calculating them, in Table 31.

Table 31: Range limits calculation: external audit

Parameter	Value	Parameter	Value
$\boldsymbol{n}$	16	S_{xy}	$430,438
$\bar{\boldsymbol{x}}$	$354million	SS_e	$445,578
$\boldsymbol{SS_x}$	$970,868	t_{crit}	0.6924
$\hat{\boldsymbol{y}}_{\boldsymbol{lower}}$	$811,000	$\hat{y}_{upper}$	$1,428,000

I Methodological notes

I.1 Updating salary related costs

In a number of instances, I have needed to updated values of salaries and related costs to equivalent values for 2016–17.

To do this, I have used the change in the index of hourly rates of pay for all private industries in Queensland (derived from ABS Cat No. 6345.0 Series A2704548F).

During the latest available twelve-month period March 2014 to March 2015, the index increase by 2.3%. I have assumed that this rate of increase will be maintained through to December 2016. This implies a further increase in the index of 4.0% over March 2015 levels by December 2016.

The index increased by 13.0% between Dec 2010 and March 2015. Combining this with the expected further increases of 4.0% provides, in total, an expected increase between December 2010 and December 2016 of 17.6%. I have used this factor in updating salary-related cost data from the KPMG report, which was compiled in April 2011.

Between December 2013 and March 2015, the index increased by 3.0%. Combining this with the expected further increases of 4.0% provides, in total, an expected increase between December 2013 and December 2016 of 7.2%. I have used this factor in updating salary-related cost data that is drawn from the 2013–14 financial reports that were used in the component benchmarking analysis.

Between December 2004 and June 2015, the index increased by 42.9%. Combining this with the expected further increases of 4.0% provides, in total, an expected increase between December 2004 and December 2016 of 48.7%. I have used this factor in updating salary-related costs drawn from the QCA and consulting reports related to the determination on the first access undertaking.

I.2 Updating general costs

I have used a similar approach in updating general costs. However, in this case I have used changes in the all-groups CPI for Brisbane (derived from ABS Cat No. 6401.0 Series A2325816R).

During the latest available twelve-month period June 2014 to June 2015, the index increase by 1.5%. I have assumed that this rate of increase will be maintained through to December 2016. This implies a further increase in the index of 2.3% over June 2015 levels.

The index increased by 10.3% between Dec 2010 and June 2015. Combining this with the expected further increases of 2.3% provides, in total, an expected increase between December 2010 and December 2016 of 12.8%. I have used this factor in updating general cost data from the KPMG report, which was compiled in April 2011.

Between December 2013 and June 2015, the index increased by 2.7%. Combining this with the expected further increases of 2.3% provides, in total, an expected increase between December 2013 and December 2016 of 5.0%. I have used this factor in updating general cost data that is drawn from the 2013–14 financial reports that were used in the component benchmarking analysis.

Between December 2004 and June 2015, the index increased by 34.3%. Combining this with the expected further increases of 2.3% provides, in total, an expected increase between December 2004 and December 2016 of 37.3%. I have used this factor in updating costs drawn from the QCA and consulting reports related to the determination on the first access undertaking.

I.3 Office rental costs

According to Knight Frank, effective rental rates for prime office property in the Brisbane CBD in May 2015 were $445 per square metre.

Knight Frank's view is that rentals have now stabilised, and that modest increases can be expected in coming months: 'rental levels are expected to remain largely stable to April 2016 (up 1.5%) with modest growth of 3.1% forecast for the year to April 2017'.[58]

Taking this forecast into account, I have assumed rental costs for 2016–17 of 4% above present levels, or $463 per square metre.

I have not been able to locate a time series of effective office rental prices that would allow me to adjust accommodation prices in the same way that I have adjusted salary-related and general costs. However, Cowley provides an indicative figure for effective prices (that is, prices after taking into account incentives offered to lessees) of $210 per square metre in 2004-05[59]. This implies an increase of 120% over this period. I have used this factor to update accommodation costs drawn from the QCA and consulting reports related to the determination on the first access undertaking.

[58] Knight Frank 2015, *Brisbane CBD Office Market Overview*, April, p5.

[59] Mervyn W Cowley 2007, *Property Market Forecasts and their Valuation Implications: A study of the Brisbane Central Business District office market*, Ph. D. Thesis, Queensland University of Technology.

I.4 Office accommodation requirements

KPMG provides an allowance of 31 square metres of office space for the CEO and Executive Assistant to the CEO.[60] This is based on Queensland government guidelines of 15 square metres for one enclosed office and 4.4 square metres for one workstation, plus a 60% allowance for associated circulation space, common areas and interactive space.

I consider this approach reasonable and have adopted it without adjustment.

I.5 Office overheads

This is again based on the estimates made by KPMG[61], which I have reviewed and which are, in my opinion, well-founded and reasonable. KPMG uses categories of office costs that were originally developed in 2001 in a report prepared for and accepted by the Office of Regulator General in Victoria, but updates the quantum of these costs to June 2011 values based on an internal review of movements in its own office costs. This process yields an estimated cost per full time equivalent employee of $5,300.

I have updated these costs to 2016–17 values. Between December 2011 and June 2015 the increase in the Brisbane all-groups CPI (derived from ABS Cat No. 6410.0 Series A2325816R) has been 7.7%. I have allowed for a further increase of 3% between June 2015 and December 2016. This results in an inflation factor of 11%.

I.6 Adjusting for increases in scale and complexity

In all cases, the starting point for estimating the impact of increased scale and complexity were the equations developed in the analysis of the component benchmarking section of the report (Chapter 4).

As all of these equations were derived for financial year 2013–14, before the proportion of fixed costs was calculated revenues for both FY2005 and FY2017 were converted to equivalent FY2014 dollars. This was done using the factors discussed in Section I.1 and Section I.2 above, yielding values of $118 million and $248 million for FY2005 and FY2017 revenue respectively.

I.6.1 Board expenses

Board expenses were adjusted using the equation reported in para 95 of the main report:

[60] KPMG 2011, Table A-3.

[61] KPMG 2011, Table C-2.

Board remuneration = $0.202 million + $967 per $ million of revenue

Applying this equation to the FY2005 revenue (in equivalent 2013–14 dollar terms) of $118 million provides an estimated cost of payments to non-executive board members of $0.316 million. This is the level of payment that, on the basis of the regression equation, I would expect to have been paid in FY2014 to a company with a revenue of $118 million: that is, to a company operating at the scale of DBCT in FY2005.

The fixed component of this estimate—$0.202 million—represents 63.8% of this total. The remainder—$0.114 million—varies with the scale and complexity of the operation, for which revenue serves as a proxy. The equation for adjusting remuneration of Board members for increased scale and complexity of operations thus becomes:

$$C_1 = C_0 * (63.8\% + 36.2\% * R_1/R_0)$$

Where

C_1 is the cost for the expanded enterprise

C_0 is the cost for the enterprise at its original scale and complexity

R_1 is the cost for the expended enterprise

R_0 is the cost for the enterprise at its original scale and complexity

I.6.2 External audit expenses

The process for adjusting external audit costs was essentially the same. In this case, the relevant equation it that reported in para 182 of the main report:

External audit costs = $0.198 million + $876 per $ million of revenue

Applying this equation to the FY2005 revenue (in equivalent 2013–14 dollar terms) of $118 million provides an estimated external audit cost of $0.302 million. The fixed component of this estimate—$0.198 million—represents 65.7% of this total. The remainder—$0.104 million—varies with the scale and complexity of the operation, for which revenue serves as a proxy. The equation for adjusting external audit costs for increased scale and complexity of operations thus becomes:

$$C_1 = C_0 * (65.7\% + 34.3\% * R_1/R_0)$$

I.6.3 Salary and wages costs

The process for adjusting salary and wages costs is slightly more complex, because salary and wages expenses are spread across a number of benchmarked components.

The first step was to identify the fixed components the salary-related costs across all of the components. Then, using the relationship set out in Chapter 3 of the report, the variable element of salary-related costs that would have been incurred by an enterprise operating at the scale of DBCT in FY2005 was calculated.

These are summarised in Table 32 below.

Table 32: Fixed salary-related costs, various components of corporate cost

	Fixed	Variable	Total
CEO	$794,403	$147,957	$942,360
Regulation	$492,000	$-	$492,000
Finance	$-	$1,370,642	$1,370,642
External Affairs	$154,000	$-	$154,000
Legal	$625,000	$-	$625,000
HR	$214,000	$-	$214,000
Total	**$2,279,403**	**$1,518,598**	**$3,798,001**

Note: Based on hypothetical revenue of $118 million in FY2014

In this case, the fixed component of this estimate—$2.279 million—represents 59.9% of this total. The remainder—$1.519 million—varies with the scale and complexity of the operation, for which revenue serves as a proxy. The equation for adjusting salary-related costs for increased scale and complexity of operations thus becomes:

$$C_1 = C_0 * (59.9\% + 40.1\% * R_1/R_0)$$

I.6.4 Other costs

There are other, relatively minor, costs that do not fit into any of the above categories but which are nevertheless likely to vary with scale and complexity. For these costs, the fixed component was assumed to be 63.1%. This is a simple average of the fixed components of the three cost categories discussed above.

I consider that this simple assumption is adequate because the costs are comparatively small, and the proportion of fixed costs varies little across the three categories for which this proportion is explicitly calculated. Any resulting error is therefore not likely to be material.

J Costs included in component benchmarking

Item	DBCT Determination	Included in component benchmarking
Board Expenses	$202,000	Included
External Audit Fees	$103,000	Included
Regulatory Costs	$200,000	Included
DBCT Credit Rating	$40,000	Not included
Distributions Expenses	$125,000	Not included
Annual General Meeting	$90,000	Not included
Annual Report	$118,000	Not included
ASX Fees	$50,000	Included
Newsletter	$31,000	Not included
Share Registry Fees	$88,000	Included
ASIC Fees	$2,000	Included
Accounting & Taxation Fees	$123,000	Included
Bank Fees and Charges	$4,000	Not included
Internal Audit Fees	$51,000	Included
Staff Amenities	$6,000	Included
Conferences	$18,000	Included
Fringe Benefits Tax	$29,000	Included
Payroll Tax	$99,000	Included
Payroll Processing	$8,000	Included
Work cover Ins	$6,000	Included
Recruitment Costs	$36,000	Not included
Salaries & Wages	$1,796,000	Included
Staff Training & Seminars	$9,000	Included
Catering	$5,000	Included
Cleaning	$18,000	Included
Computer/IT Maintenance & Software	$153,000	Included
Couriers	$10,000	Not included
Entertainment	$53,000	Not included
Gifts & Donations	$18,000	Not included
Insurance - General	$511,000	Separately estimated
Telephone/Fax/Internet	$31,000	Included

Item	DBCT Determination	Included in component benchmarking
Consultancy Fees	$238,000	Included
Legal Costs	$86,000	Included
Office Rentals	$114,000	Included
Printing Postage & Stationery	$20,000	Included
Subscriptions	$3,000	Included
Travel	$45,000	Not included
Sundry	$1,000	Not included
Depreciation	$60,000	Not included
Board Expenses	$202,000	Included
External Audit Fees	$103,000	Included