



Response to Pacific Economics Group on Meyrick GDB Benchmarking Reports

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Multinet Pty Ltd

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CONTENTS

Executive Summaryii

1 Introduction..... 1

2 Methodology 2

3 Evaluation Criteria 3

4 Australia/New Zealand Data Issues 5

5 US Data Issues 7

6 Partial Indicators 9

7 Conclusions..... 10

References..... 13

EXECUTIVE SUMMARY

In this report we respond to the criticisms made in PEG (2007a) of the three Meyrick benchmarking reports prepared for Multinet and comparing Multinet's efficiency with a range of Australian, New Zealand and US gas distribution businesses (GDBs) (Meyrick 2007a,b,c). The criticisms cover methodology, evaluation criteria, Australia/New Zealand data issues, US gas costs and the use of partial indicators. We reject the criticisms made in PEG (2007a). Specifically, we make the following points:

- there is a sound theoretical basis for all the approaches used in the three Meyrick benchmarking reports and PEG (2007a) does not appear to realise that if the same overall results emerge from using a range of different, soundly-based methods and data sets then one can have more confidence in the results than using just the one cost function approach using US data;
- the PEG (2007a, p.11) contention that the opex requirements analysis cannot 'support any conclusion other than that Multinet is an average cost performer' is based on a misunderstanding of confidence intervals derived from the model and is incorrect;
- other than the obvious observation that not all firms can be expected to be operating on the efficiency frontier, the 'competitive market standard' information presented by PEG is of no practical relevance to assessing GDB efficiency studies and is not operationalised by PEG;
- it is invalid for PEG (2007a, p.13) to argue that the Meyrick ANZ database is 'flawed' because it uses regulator allowed opex costs where no actual cost data are available – the cost data regulators allow in their regulatory reviews are the best estimates available of GDB costs and PEG (2007b) has itself used the Meyrick (2007a,b) ANZ database;
- Meyrick (2007a,b,c) uses the depreciated optimised replacement cost data approved by regulators for Australian and New Zealand GDBs – a similar approach to that adopted by PEG in previous studies – and we adjust the US data in Meyrick (2007c) to be as close to the depreciated replacement cost basis as possible making the PEG (2007a) criticism of the capital data also invalid;
- to ensure like-with-like comparisons with available US GDB data (which includes the cost of gas bundled with GDB opex), Meyrick (2007c) included a notional cost of gas purchased in the Multinet cost data based on the volumes it actually delivered but priced at a weighted average of the city gate gas prices for the included US GDBs. PEG (2007a) claims that the city gate gas price is not a good proxy. However, a closer examination of the data on gas costs and the claimed deviations presented in PEG (2007a) and the corresponding bundled gas cost and opex data in Platts Energy Advantage reveals that the

way PEG has presented this information exaggerates the perceived differences. PEG's figure of a 15.9 per cent difference on average relates to the *absolute values* of the differences. It takes no account of the signs of the reported deviations. When the corresponding average of the signed deviations is taken, the difference reduces to a mere 2 per cent. Because we apply the proxy price to Multinet's gas volume (rather than deducting a proxied gas cost from each US GDB's bundled data), it is the overall average gas price across all US GDBs that has to be a close proxy rather than the state city gate price being a close proxy for each individual US GDB. Thus, instead of being a poor proxy as intimated by PEG, the Meyrick (2007a) average city gate price is actually a very good proxy.

- PEG (2007a) chose not to refer to the earlier PEG (2001) study comparing Multinet with US GDBs which found the same result as Meyrick (2007c). In 2002 actual opex costs for Multinet were 69 per cent of what the Meyrick (2007c) model predicted using a sample of 60 US GDBs. PEG (2001) found that Multinet's actual 1999 opex costs were around 50 per cent of that predicted by their cost function model estimated for a total of 43 US GDBs. Between 1999 and 2002 Multinet exhibited strong opex partial productivity growth of 7.5 per cent per annum whereas the US GDBs in the PEG database exhibited opex partial productivity growth of only 1.2 per cent per annum on average. The Meyrick result is conservative compared to the PEG (2001) result. This provides further support for the Meyrick (2007c) finding that Multinet is a much better than average performer.
- PEG (2007a) argues that an operating environment variable for the proportion of cast iron mains should be included in comparisons with US GDBs. PEG claims that a higher proportion of cast iron pipes is likely to lead to higher opex costs, all else equal, as GDBs have to attend to more leaks, etc. We note that PEG (2001, p.28) indicated that Multinet had 20 per cent of its mains made up of cast iron pipes while the PEG US sample of GDBs had only 9 per cent of mains made up of cast iron pipes. This indicates that not including the proportion of cast iron pipes would actually *disadvantage* Multinet on average in comparisons with the US GDBs in PEG's sample. We, therefore, reject the PEG (2007a, p.23) criticism that not including the proportion of cast iron pipes as an operating environment variable is a 'fundamental deficiency'.
- Multinet performs very well in the partial indicator comparisons presented in Meyrick (2007a) across all the key cost components of opex, capital stock and capital expenditure normalised by the major cost drivers of throughput and customer numbers. This indicates that 'trade-offs' do not appear to be a factor explaining Multinet's good performance in any of these dimensions. We, thus, reject the PEG (2007a, p.26) contention that the comparisons do not provide 'persuasive evidence that Multinet is a superior cost performer'.

1 INTRODUCTION

As part of its submission to the Essential Service Commission's (ESC's) Gas Access Arrangement Review (GAAR) for 2008–2012, Multinet commissioned Meyrick and Associates to undertake a series of benchmarking and econometric modeling studies of the operating expenditure and capital efficiency of Australian, New Zealand and United States gas distribution businesses taking operating environment differences into account.

Meyrick (2007a) discusses the efficiency performance of Multinet's gas distribution business (GDB) over the period 1998–2006 compared to 10 of Australia's other GDBs and 4 New Zealand GDBs. The report presents a range of partial productivity performance indicators including real operating expenditure (opex), capital stock and capital expenditure per unit of throughput, per customer and per kilometre.

In Meyrick (2007b) we developed and estimated three separate econometric models of the Australian and New Zealand GDBs' performance to examine Multinet's relative total cost and opex efficiency taking differences in scale, energy and customer density, and production technologies into account. The models developed were a translog cost function model, an opex requirements function model and a second stage regression model of productivity performance.

In Meyrick (2007c) we estimated an econometric cost function model based on pooled data for 69 United States GDBs and Multinet allowing for key operating environment differences including scale, customer composition and energy density. The US data spans the period 1996 to 2005 and the Multinet data spans the period 1998 to 2006. The efficiency measure used in this study is the ratio of Multinet's actual costs to those predicted by the estimated cost function model for both total cost and opex. The costs predicted by the model are those applying to the firm of average efficiency in the sample, given Multinet's characteristics.

The conclusion of the three benchmarking studies is that Multinet is clearly more efficient in terms of both total costs and opex compared to the average of a large sample of Australian, New Zealand and US GDBs if those firms faced the same operating environment conditions as Multinet. This result is consistent with the earlier cost function study by Pacific Economics Group (PEG 2001) which found that Multinet's actual 1999 opex costs were around 50 per cent of that predicted by their cost function model estimated for a total of 43 US GDBs. The US and Multinet databases used in the Meyrick studies were constructed independently of those used by PEG but our analysis came to a similar conclusion, reinforcing the robustness of the findings.

The ESC subsequently engaged PEG to review the Meyrick reports on GDB benchmarking (PEG 2007a). This report responds to the PEG (2007a) report.

In the following sections of the report we respond to the criticisms PEG (2007a) makes of the Meyrick benchmarking reports covering methodology, evaluation criteria, Australia/New Zealand data issues, US gas costs and the use of partial indicators. We then draw conclusions in section 7.

2 METHODOLOGY

PEG (2007a, p.2) criticises the Meyrick benchmarking reports for using methods for evaluating efficiency and good performance that are ‘both unconventional and variable from analysis to analysis’. However, there is a sound theoretical basis for all the approaches used in the three Meyrick benchmarking reports and the fact that we use a range of methods is, in fact, a strength of our approach. PEG (2007a) does not appear to realise that if the same overall results emerge from using a range of different soundly-based methods and data sets then one can have more confidence in the results than using just the one cost function approach using US data.

The partial indicators included in Meyrick (2007a) have been used widely in Australia to provide initial efficiency comparisons and to set the scene for subsequent econometric analyses – see, for example, Meyrick and PEG (2004a,b) and Tasman Asia Pacific and PEG (2000). It would, thus, be reasonable to describe this approach as conventional and certainly one that PEG is well familiar with.

The translog cost function method used in Meyrick (2007b,c) has a long history and has been widely applied by PEG itself (see PEG 2001, 2004). While now a somewhat dated methodology and subject to a number of limitations as discussed in Meyrick (2007d), the translog cost function approach is certainly a conventional one.

The opex requirements function approach used in Meyrick (2007b) also has a long history. The theory was developed by Diewert (1974) and one of the first applications was by PEG’s fellow Madison-based firm, Christensen and Associates, to the US postal service (see Christensen, et al 1985). The method has previously been applied in Australia and New Zealand by Zeitsch, Lawrence and Salerian (1994) and Meyrick (2002, 2003). The method is, thus, both soundly based and conventional.

Finally, the two-stage regression analysis of efficiency scores also has a long history (see, for example, Fried, Lovell and Schmidt 1993). Leading Australian efficiency academics Coelli, Rao and Battese (1998, p.171) assessed the alternative approaches available for adjusting for operating environment differences and endorsed the two-stage approach as follows:

‘We have considered a number of possible approaches to the consideration of environmental variables. We recommend the two–stage approach in most cases. It has the advantages that:

- it can accommodate more than one variable;
- it can accommodate both continuous and categorical variables;
- it does not make prior assumptions regarding the direction of the influence of the categorical variable;
- one can conduct hypothesis tests to see if the variables have a significant influence upon efficiencies;
- it is easy to calculate; and
- the method is simple and therefore transparent.’

Again, the two–stage method is both soundly–based and conventional.

We, thus, reject the PEG (2007a) criticism that the Meyrick benchmarking methodologies are ‘unconventional and variable’.

3 EVALUATION CRITERIA

PEG (2007a) puts forward two ‘evaluation criteria’ for assessing benchmarking studies. The first is ‘the idea of a superior cost performer, as established through rigorous statistical measures’ and the second is a ‘competitive market standard’. PEG argues that operationalisation of the superior cost performer criterion requires that confidence intervals be established for efficiency scores and that ‘average’ performance must lie outside this confidence interval before definitive statements can be made about performance being either superior or inferior. PEG’s discussion of its ‘competitive market standard’ criterion is confused and does not lead to any practical operationalisation other than the (obvious) observation that not all firms can be expected to lie on the efficiency frontier.

Meyrick acknowledges that confidence intervals provide one of a number of useful pieces of information emanating from econometric models. We disagree with PEG, however, that all other information emanating from econometric efficiency models is effectively irrelevant. The single key piece of information coming out of an econometric efficiency model is the point estimate of a firm’s relative efficiency. Indeed, most efficiency studies only present point estimates of relative efficiency and these are, in fact, the primary output of such studies. If information can be obtained on confidence intervals then this provides supplementary information to assess the accuracy of the model’s predictions.

PEG misinterprets the information on confidence intervals presented in Meyrick (2007b). PEG (2007a, p.10) makes the following statement regarding the Meyrick opex requirements function results:

‘the opex requirements analysis presents a confidence interval around the normalized opex input requirement indexes ... It can be seen that Mutlnet (sic) is within this confidence interval and therefore within the range where the researcher cannot reject the hypothesis that the firm in question is an average cost performer.’

This statement implies that the confidence is calculated around the average opex requirement predicted and that, because Multinet lies in this confidence interval, then it is not significantly different from the average. However, the confidence interval is calculated around Multinet’s normalised opex requirement and so Multinet obviously lies at the centre of this interval. The model does not, and cannot, make any prediction for an average of all firms. Rather, separate confidence intervals can only be calculated for each firm’s normalised opex requirement. There are 12 firms in this sample. Multinet is shown to be a significantly better opex performer (ie have a significantly lower normalised opex requirement) than 7 of the firms in the sample. Only one firm has a significantly better normalised opex performance than Multinet and three others cannot be distinguished from Multinet statistically. Since Multinet has a significantly better normalised opex performance than 58 per cent of the sample it can be concluded that Multinet is a superior opex cost performer. Furthermore, Multinet is the third best opex performer out of the sample of 12 firms. We, thus, reject the PEG (2007a, p.11) contention that the opex requirements analysis cannot ‘support any conclusion other than that Multinet is an average cost performer’ as PEG’s statement is based on a misunderstanding of confidence intervals derived from the model.

PEG (2007a, p.5–8) presents a discussion of a ‘competitive market standard’ which provides no operational evaluation criterion. Rather, results from a number of banking and farming sector efficiency studies are presented. Unfortunately, the relevance of this information for gas distribution is, at best, very limited. These industries are typically characterised by a large number of firms operating under competitive conditions. The spread of efficiency scores from these industries is of little, if any, relevance to what we might expect to see from a collection of natural monopolies, each operating under regulation, some of which is attempting to simulate a hypothetical competitive market. Other than the obvious observation that not all firms can be expected to be operating on the efficiency frontier, this information is of no practical relevance to assessing GDB efficiency studies and is not operationalised by PEG.

The two ‘evaluation criteria’ presented by PEG (2007a) are, thus, of little value in assessing the Meyrick benchmarking reports. PEG (2007b), on the other hand, presented a set of

evaluation criteria for assessing whether forecasts represent ‘best’ estimates as required by Section 8.2(e) of the Gas Code. While these criteria have no standing under the Gas Code, Meyrick (2007d) agreed that they provide a useful framework.

With regard to identifying best estimates, PEG (2007b) suggests the following criteria:

- accuracy of the data employed;
- data sources reflect relevant business conditions that affect GDBs;
- the use of rigorous empirical techniques;
- robustness;
- historical consistency;
- no ‘cherry picking’ of available data;
- internal consistency and no ‘double counting’ of changes; and,
- reflects long–run behaviour.

The same criteria can also be used to assess efficiency studies. We will assess the Meyrick benchmarking studies against these criteria in section 7.

4 AUSTRALIA/NEW ZEALAND DATA ISSUES

The main criticism PEG (2007a) mounts against the Meyrick (2007a,b) comparisons of Australian and New Zealand GDBs is that the Meyrick Australia/New Zealand (ANZ) database uses a combination of actual and regulator allowed data. PEG argues that the use of regulator allowed data for some non–Victorian GDBs will overstate these GDBs’ actual costs.

Meyrick rejects this criticism outright. Meyrick was asked to assess Multinet’s efficiency using publicly available data. We have used data on actual performance wherever these are available. Where these data were not available we used data from final Access Arrangement Information (AAI) filings. These filings have to be consistent with the relevant regulator’s final building blocks approval. Where final AAIs were not available we used building block data directly from the relevant regulator’s final decision. These data represent the best available data. Regulators review GDBs’ forecast costs intensively before approving final access arrangements. Most regulators employ specialised consultants to derive estimates of efficient costs for the relevant GDB. To suggest that these data are unsuitable for efficiency comparisons is to suggest that the regulators have been negligent in discharging their duties.

Meyrick asked PEG in an information request dated 4 September 2007 whether PEG was aware of superior sources of public domain information to those used by Meyrick in constructing the ANZ database. PEG’s reply dated 17 October 2007 indicated that PEG was not aware of other information sources.

PEG's argument against using regulator allowed data where no other information is available appears to be that GDBs will have an incentive to outperform regulator allowed costs and so actual costs will end up being less than the regulator allowed series. This would place those non-Victorian GDBs where regulator allowed data is used at a disadvantage relative to the other GDBs where actual data are used. PEG provides no empirical evidence of the possible magnitude or even direction of this potential bias. We note that some key recent energy network regulation decisions in NSW and Queensland have involved recognition of *higher* costs actually incurred than those allowed at the preceding regulatory review. This means that any comparisons of other businesses' actual costs with these businesses' allowed costs would have disadvantaged the businesses where actual costs were used.

While it would be desirable to have actual cost data for all GDBs, the practical constraints of carrying out an efficiency study at a particular point in time mean that it will be necessary to supplement actual cost data with regulator allowed data for some observations. We have sufficient confidence in the competence of Australian regulators to believe that the cost data they allow in their regulatory reviews are the best estimates available of GDB costs. We note that recent evidence indicates that, to the extent that actual costs do not match previously allowed costs, they often exceed rather than being less than allowed costs for the non-Victorian businesses. We also note that PEG (2007b) has used the Meyrick (2007a,b) ANZ database in estimating potential opex partial productivity growth for the Victorian GDBs. It is, thus, invalid for PEG (2007a, p.13) to argue that the Meyrick ANZ database is 'flawed'. Rather, the Meyrick ANZ database represents the best estimates of relevant GDB data prepared on a reasonable basis and is suitable for efficiency analysis.

The second data concern PEG (2007a) raises regarding the Meyrick ANZ database is the quality of capital stock estimates in Australia and New Zealand. PEG quote earlier Meyrick (2005a,b) concerns regarding the use of deflated asset value data as a proxy for capital input quantities in the PEG (2004) Australian electricity distribution total factor productivity (TFP) study. However, Meyrick's main concern regarding the use of deflated asset values as a proxy for capital input quantities in TFP studies relates to the fact that, even if the asset value data are completely accurate, it will tend to overstate the decline in the capital input quantity and, hence, overstate the increase in TFP.

Meyrick (2007a,b,c) uses the depreciated optimised replacement cost data approved by regulators for Australian and New Zealand GDBs. It is, thus, the best data currently available and has been prepared by the regulators on a reasonable basis. Furthermore, we have adjusted the US data used in Meyrick (2007c) to be as close to the depreciated replacement cost basis as possible. A similar approach was used by PEG (2004). More generally, the approach we have adopted and the data sources we have used are the same as those used by PEG in its

previous cost function studies (see, for example, PEG 2001, 2004). Combined with the fact that PEG (2007b) uses the Meyrick ANZ database without adjustment, PEG's criticism of the Meyrick ANZ database's capital stock data, thus, has to be rejected.

5 US DATA ISSUES

PEG (2007a) makes two criticisms of the cost function analysis reported in Meyrick (2007c) where Multinet is compared to a large sample of US GDBs. The principal criticism relates to the treatment of the cost of gas supplies in the US database. A secondary criticism relates to Meyrick (2007c) not including the proportion of cast iron pipes as an operating environment variable.

The US component of the Meyrick GDB database is based on data from Platts (2007) Energy Advantage service. Platts is a division of the McGraw–Hill group of companies which specialises in supplying energy industry data and associated services. The Platts data on individual gas businesses are assembled from a range of official sources including Federal Energy Regulatory Commission (FERC) Form 2 filings, Energy Information Administration (EIA) Form 176 filings and Annual Reports to the individual state Public Utility Commissions.

The Platts Energy Advantage US data include the cost of gas purchased for subsequent distribution bundled with opex. To ensure like–with–like comparisons, Meyrick (2007c) included a notional cost of gas purchased in the Multinet cost data based on the volumes it actually delivered but priced at a weighted average of the city gate gas prices for the included US GDBs. The weights were based on the volumes delivered by the included US firms and the city gate prices were obtained from EIA (2007).

PEG (2007a, p.15) confirms that the cost of gas purchases is not separately reported in the Platts Energy Advantage service. PEG indicated that the cost of gas purchases can be sourced from an alternative Platts product, GasDat. PEG went on to note that the Meyrick solution to the problem of the cost of gas being bundled with opex has 'intuitive appeal'. But PEG then claimed that the state average city gate prices were not a good proxy for the GDB–specific prices of gas. PEG (2007a, p.16) claims that the Meyrick proxy understates the gas purchase costs by 15.9 per cent on average. This was claimed to have a magnified effect on the implied US GDB opex costs of in the order of 60 per cent.

A closer examination of the data on gas costs and the claimed deviations presented in PEG (2007a) and the corresponding bundled gas cost and opex data in Platts Energy Advantage reveals, however, that the way PEG presents this information significantly exaggerates the perceived differences. PEG's figure of a 15.9 per cent difference on average relates to the *absolute values* of the differences. It takes no account of the signs of the reported deviations.

When the corresponding average of the signed deviations is taken, the difference reduces to a mere 2 per cent. Thus, instead of being a poor proxy as intimated by PEG, the Meyrick (2007a) average city gate price is actually a very good proxy. Because we apply the proxy price to Multinet's gas volume (rather than deducting a proxied gas cost from each US GDB's bundled data), it is the overall average gas price across all US GDBs that has to be a close proxy rather than the state city gate price being a close proxy for each individual US GDB. Thus, the information contained in PEG (2007a) on actual US GDB gas purchase costs actually supports the use of the Meyrick (2007a) proxy. We, therefore, reject PEG's criticism that the use of the gas cost proxy is 'sufficient to cast Meyrick's entire US analysis in doubt'.

Further evidence in support of our approach can be obtained by comparing the results of the Meyrick (2007a) report with those of PEG (2001). Meyrick (2007a) found that Multinet is clearly more efficient in terms of both total costs and opex compared to the average of the sample of US GDBs if those firms faced the same operating environment conditions as Multinet. Multinet ranked second most efficient in terms of total cost in the overall sample of 60 GDBs for the representative year, 2002, and eighth most efficient in terms of opex. In 2002 actual opex costs for Multinet were 69 per cent of what the model predicted. PEG (2001) found that Multinet's actual 1999 opex costs were around 50 per cent of that predicted by their cost function model estimated for a total of 43 US GDBs. Between 1999 and 2002 Multinet exhibited strong opex partial productivity growth of 7.5 per cent per annum (derived from Meyrick 2007f) whereas the US GDBs in the PEG database exhibited opex partial productivity growth of only 1.2 per cent per annum on average (derived from Lowry 2007b). The Meyrick (2007c) result is thus conservative compared to the PEG (2001) result. This provides further support for the Meyrick (2007c) finding. We note that PEG (2007a) chose not to refer to the earlier PEG (2001) study which found the same result as Meyrick (2007c).

The second criticism PEG (2007a) makes of Meyrick (2007c) is that no operating environment variable for the proportion of mains not made of cast iron is included in the analysis. The Platts Energy Advantage database does not include this information. Earlier Meyrick studies have indicated that the most important operating environment variables to include in energy network efficiency studies are energy density and customer density. These important aspects of operating environment differences are captured by the two operating environment variables included in the study – the proportion of throughput that is not industrial (where industrial includes supplies to electricity generators) and total residential consumption per residential customer.

PEG (2007a) has not provided any empirical evidence of the likely importance of allowing for differences in the proportion of cast iron pipes or of what those differences are between Multinet and US GDBs. PEG claims that a higher proportion of cast iron pipes is likely to

lead to higher opex costs, all else equal, as GDBs have to attend to more leaks, etc. We note that PEG (2001, p.28) indicated that Multinet had 20.3 per cent of its mains made up of cast iron pipes while the PEG US sample of GDBs had only 9.4 per cent of mains made up of cast iron pipes. This indicates that not including the proportion of cast iron pipes would actually *disadvantage* Multinet on average in comparisons with the US GDBs in PEG's sample. We, therefore, reject the PEG (2007a, p.23) criticism that not including the proportion of cast iron pipes as an operating environment variable is a 'fundamental deficiency'.

6 PARTIAL INDICATORS

PEG (2007a) criticises the Meyrick (2007a) partial indicator comparison of Australian and New Zealand GDBs on two grounds. First, it argues the use of regulator allowed cost data for some observations in the Meyrick ANZ database is 'problematic'. And, secondly, it argues that partial indicator comparisons do not provide a way of allowing for opex/capex trade-offs that GDBs might choose to make.

We have addressed the veracity of the Meyrick ANZ database in section 4. While it would be desirable to have actual data for all GDBs, the practical constraints of carrying out an efficiency study at a particular point in time mean that it will be necessary to supplement actual cost data with regulator allowed data for some observations. We have sufficient confidence in the competence of Australian regulators to believe that the cost data they allow in their regulatory reviews are the best estimates available of GDB costs. We note that recent evidence indicates that, to the extent that actual costs do not match previously allowed costs, they often exceed rather than being less than allowed costs for the non-Victorian businesses. We also note that PEG (2007b) has used the Meyrick (2007a,b) ANZ database in estimating potential opex partial productivity growth for the Victorian GDBs. It is, thus, invalid for PEG (2007a, p.25) to argue that the Meyrick ANZ database is 'fundamentally distorted'. Rather, the Meyrick ANZ database represents the best estimates of relevant GDB data prepared on a reasonable basis and is, thus, certainly suitable for efficiency analysis.

With regard to PEG's second criticism, a suite of performance indicators will always provide more information than looking at one indicator in isolation. Just as examining total factor productivity performance gives a more holistic picture of overall performance than just looking at, say, opex partial productivity, then looking at partial indicators of capital stock and capital expenditure performance as well as opex partial productivity will also give a more holistic picture of performance. For instance, one firm may be achieving exceptionally high levels of opex partial productivity because it has invested heavily in new capital and automation. Looking at capital stock and capex partial indicators as well as the opex indicator will reveal this to be the case because the firm will have relatively poor performance on these

indicators. Conversely, another firm may have low levels of opex partial productivity because it has chosen to extend the life of an older capital stock. This will show up as good performance on the capital stock and capex indicators. Without looking at the suite of indicators and considering the trade-offs involved, the risk is that a regulator could ‘cherry pick’ by requiring the first firm to achieve the capital stock and capex performance of the second firm and the second firm to achieve the opex performance of the first firm. Clearly this would be an unsustainable outcome for both firms.

In some industries (such as electricity distribution) it is also important to consider opex and capital performance in the context of reliability and service quality performance because apparently good efficiency performance might be being achieved by running down the system leading to falls in reliability and service quality. Without considering reliability and service quality indicators within the suite being examined, unsustainable outcomes may again result in that instance. Given that reliability and service quality are generally very high in gas supply and safety requirements usually mandate this outcome, including reliability and service quality indicators in the suite being considered is not as critical for gas supply.

As noted in section 2, the partial indicators included in Meyrick (2007a) have been used widely in Australia to provide initial efficiency comparisons and to set the scene for subsequent econometric analyses – see, for example, Meyrick and PEG (2004a,b) and Tasman Asia Pacific and PEG (2000).

Multinet performs very well in the comparisons presented in Meyrick (2007a) across all the key cost components of opex, capital stock and capital expenditure normalised by the major cost drivers of throughput and customer numbers. This indicates that ‘trade-offs’ do not appear to be a factor explaining Multinet’s good performance in any of these dimensions. We, thus, reject the PEG (2007a, p.26) contention that the comparisons do not provide ‘persuasive evidence that Multinet is a superior cost performer’.

7 CONCLUSIONS

In this report we have responded to the criticisms made in PEG (2007a) of the three Meyrick (2007a,b,c) benchmarking reports prepared for Multinet and comparing Multinet’s efficiency with a range of Australian, New Zealand and US GDBs. The criticisms cover methodology, evaluation criteria, Australia/New Zealand data issues, US gas costs and the use of partial indicators. We reject the criticisms made in PEG (2007a).

PEG (2007a) proposed two evaluation criteria for efficiency studies but did not fully operationalise these criteria. As noted in section 3, the evaluation criteria PEG (2007b) proposed in the context of forecasts to be used in regulatory proceedings are superior and can

also be applied to efficiency studies. We now assess the three Meyrick benchmarking reports against these criteria.

- accuracy of the data employed

We have demonstrated in section 4 that the data used in constructing the Meyrick GDB databases are the best information currently available. Actual data on GDB costs and outputs are used wherever these are available. For those observations where actual data are not publicly available we have used regulator approved final decision building blocks data – regulators can be expected to use the best estimates available when forming the building blocks. PEG has indicated to Meyrick that it does not know of any better sources of information available in the public domain.

- data sources reflect relevant business conditions that affect GDBs

The principal operating environment variables of customer and energy density which affect GDB costs are included in the Meyrick studies. PEG (2007a) argues that the proportion of cast iron pipes should also be included but, based on the information available, exclusion of this variable will disadvantage, rather than advantage, Multinet relative to the average US GDB. All output and input variables used in the studies reflect local conditions.

- the use of rigorous empirical techniques

Each of the Meyrick benchmarking reports use rigorous economic methods which have been developed over the past 30 years and previously applied in Australia, New Zealand and the US.

- robustness

Despite using a range of soundly-based empirical methods and different data sets, the three Meyrick benchmarking reports all find that Multinet is a superior cost performer. This is in turn consistent with the earlier study by PEG (2001) indicating the robustness of the findings.

- historical consistency

Each of the Meyrick models contains data for several years and the results are consistent with the findings of earlier studies such as PEG (2001).

- no ‘cherry picking’ of available data;

There is no cherry picking of either data or results in the Meyrick models. The partial indicator comparisons indicate that Multinet performs well across opex, capital stock and capital expenditure comparisons. Consequently, there are no ‘trade-offs’ or potential cherry picking of results reflecting, say, selective reporting of opex relative to capital performance.

- internal consistency and no ‘double counting’ of changes

The Meyrick models and databases are all internally consistent. The major outputs and inputs are included and key consistency criteria such as price times quantity equals value are all satisfied.

- reflects long–run behaviour

Each of the models include data covering several years and results are effectively averaged over the time period. Short–run fluctuations and one–off impacts, thus, do not unduly influence the results.

The Meyrick (2007a,b,c) benchmarking models, thus, satisfy all 8 of the criteria advanced by PEG (2007b) required for ‘best’ estimates. After reviewing the criticisms contained in PEG (2007a) and further assessing our results, we find no reason to alter our conclusion that Multinet’s total cost and opex efficiencies are better than that of most of the other GDBs included in the Meyrick ANZ and US GDB databases.

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