Information Disclosure: Approaches for Understanding EDB and GPB Cost Efficiency

November 2011

1 Introduction and Summary

Electricity distribution businesses (EDBs) and gas pipeline businesses (GPBs) submit information disclosures to the Commerce Commission to enable parties to assess sector outcomes against the purpose of Part 4 of the Commerce Act—to promote outcomes consistent with competitive markets.[1] The Commission is required to publish a summary and analysis of these information disclosures to help interested parties understand the performance of regulated businesses, assess their relative performance, and monitor the changes in performance over time.[2]

The Commission has set out a proposed approach to information disclosure in the Technical Paper for Consultation and at an industry workshop where the Commission presented its emerging views.[3] The approach proposed by the Commission has merit. In particular, it allows interested parties (such as Genesis Energy) to understand the performance of individual EDBs relative to similar companies. Many of these interested parties would be unable or unwilling to put their own resources into undertaking this detailed level of analysis. The Commission's approach also draws upon substantial international experience with benchmarking the relative performance of utility businesses.

This note investigates ways to develop the Commission's approach to ensure that the analysis of information disclosures promotes better sector performance over time. We evaluate two particular issues of interest to Genesis Energy:

- **Does the proposed analysis of cost efficiency adequately account for scale effects?** Accounting for scale effects will ensure that the summary and analysis contributes to a better understanding of the minimum efficient scale for EDBs in New Zealand, and helps parties to identify opportunities for efficient (and profitable) mergers and takeovers (Section 2).
- **Does the proposed cost efficiency analysis adequately account for transactions costs?** EDBs and GPBs impose costs on other parties, for example through negotiations over the terms and conditions for accessing electricity and gas networks. Competitive markets work to ensure that the total costs of providing a service are minimised throughout the entire supply chain; however regulated markets do not naturally achieve this outcome (Section 3).

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[1] Sections 53A of the Commerce Act and 52A of the Commerce Act.

[2] Section 53B(2)(b) of the Commerce Act.

[3] Both documents are available on the Commission's website at http://www.comcom.govt.nz/part-4-review-of-electricity-information-disclosure-requirements/

These questions respond to the broader issue raised in question six of the Technical Paper: *What factors (outside management control) drive industry wide opex?* In our view, neither the scale of operations nor transactions costs is completely outside the control of EDB management. This means that the Commission's analysis of information disclosures should provide some evaluation of these drivers of sector performance.

As the Commission refines its approach to the summary and analysis of information disclosures, it would also be useful to clarify the practical uses of the analysis. The Commission is prevented from using comparative benchmarking of efficiency to set starting prices, rates of change, quality standards, or incentives to improve quality of supply.[4] For some stakeholders, the inability to use comparative benchmarking analysis will beg the question as to why the Commission bothers with summary and analysis at all.

In our view, summary and analysis can play a useful role in improving the efficiency of regulated industries, despite not being used directly in regulatory decisions. In particular, summary and analysis can help consumers and shareholders hold the management of regulated businesses accountable for performance, and can help policy-makers ensure that regulatory settings are delivering the best possible outcomes. Improved efficiency is worth pursuing in an industry such as electricity distribution, where the value of existing assets totals more than $8 billion.

2 Accounting for Scale Effects

There are currently 29 EDBs in New Zealand, with several EDBs having fewer than 10,000 customers. Although the sector has seen some consolidation (down from 44 EDBs in 1992), there is evidence that further consolidation would improve efficiency. Recent research suggests that significant cost savings have been realised through sector changes (including EDB mergers) in New Zealand from 1995 to 2010.[5]

The Commission's analysis finds some benefits of larger scale EDBs

Given the important role that scale plays in electricity distribution, it would be useful for the Commission's summary and analysis to comment directly on the impacts of scale. We think that the Commission's analysis can be interpreted to help understand scale effects. The Commission's regression analysis (summarised on page 50 of the workshop presentation) considers the impact of two scale variables:

- **GWh distributed.** A 1 percent increase in GWh distributed is associated with a 0.37 percent increase in operating expenditure, holding kilometres of circuit and customer density constant.
- **Kilometres of circuit.** A 1 percent increase in kilometres of circuit is associated with a 0.56 percent increase in operating expenditure, holding GWh distributed and customer density constant.

The model specified by the Commission therefore predicts lower costs per unit of output for larger companies (EDBs that distribute more power and have larger networks).

Although these results are interesting, using these estimates to predict an efficient level of cost may in effect give EDBs a "free pass" on the scale at which they choose to operate. Opportunities to merge are within the control of management, and consumers will be

[4] Section 53P(10) of the Commerce Act.

[5] Nillesen, P and Pollitt, M (2011) *"Ownership Unbundling in Electricity Distribution: Empirical Evidence from New Zealand* Review of Industrial Organisation (2011) 38: 61-93.

better off where regulated businesses complete efficient mergers. Because firms can alter the scale of their business, the literature on cost benchmarking suggests that the size of utilities should **not** be included when comparing cost efficiency.[6]

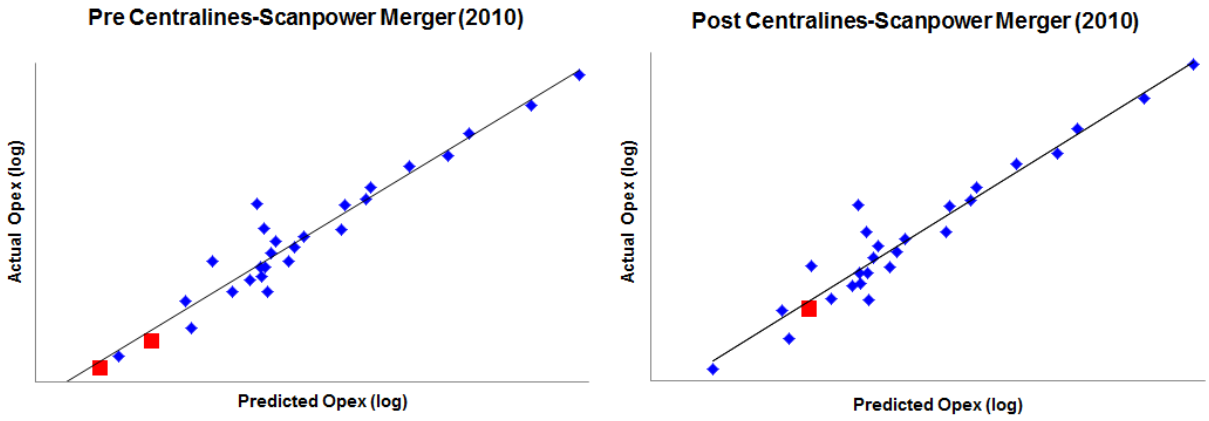
Scale effects can be tested with plausible merger scenarios

To test the importance of scale effects in the Commission's analysis, we consider the impacts of possible mergers between neighbouring EDBs. We would expect such mergers to improve efficiency by lowering operating costs while providing the same outputs. Although mergers will always need to be assessed on a case-by-case basis, this analysis considers whether the Commission's analysis could help to identify companies operating below an efficient scale.

To evaluate how the economic model specified by the Commission responds to mergers, we compare the total operating costs of two EDBs against predictions from the model using the characteristics of a new merged EDB (GWh distributed, kilometres of circuit, and customer density). This allows us to test what operating cost savings the merger would need to achieve to maintain the same assessment of relative efficiency as the companies receive in the Commission's analysis operating separately. This analysis effectively asks whether EDBs would be likely to enter into a merger based on their ability to perform well in the Commission's analysis.[7] Our analysis also helps to understand whether the Commission's analysis inadvertently punishes EDBs that have already achieved scale economies.

In Figure 2., we consider how the results of the Commission's model would change following a merger between Scanpower and Centralines in the central Hawkes Bay (shown with red squares). These EDBs are among the smallest in New Zealand—Scanpower has slightly less than 7,000 customers and Centralines has around 8,000 customers. As shown in the left hand graph of Figure 2., both of these EDBs are considered to be relatively efficient under the current model specification (they are positioned below the predicted level of opex, given their observable characteristics).

Figure 2.: Impact of Merger between Scanpower and Centralines



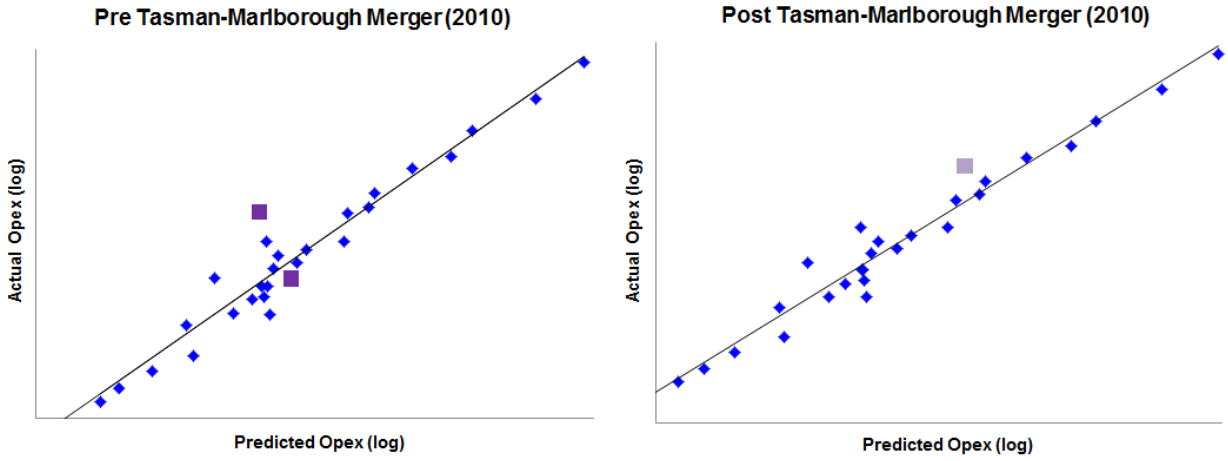
[6] See Filippini, M (2000) *Regional Differences in Electricity Distribution Costs and their Consequences for Yardstick Regualtion of Access Prices* CCPC, May 2000. Available online at: http://www.cepe.ethz.ch/publications/Filippini_lugano.pdf

[7] Clearly such an assumption is not likely, but illustrates whether the way the Commission analysis information disclosures is likely to provide useful information on efficient industry structure.

A merger between Centralines and Scanpower will achieve greater scale. To maintain the same level of efficiency under the current model specification, costs must be reduced. This is shown in the graph by the square in the right hand graph moving closer to the trend line. Before the merger, the operating costs incurred by Scanpower and Centralines were $309,000 less than the costs predicted by the model. After the merger (assuming that operating costs remain the same), the merged entity would incur $217,000 less than predicted. To achieve the same level of relative cost efficiency, the post-merger EDB would therefore need to reduce its operating costs by $92,000 per year (equivalent to 2.1 percent of pre-merger operating costs).

In Figure 2., we consider how the results of the Commission's model would change with a merger between Network Tasman and Marlborough Lines. These EDBs are medium-sized utilities located at the top of the South Island. The rationale for this merger would be to take advantage of the differences in relative efficiency (identified in the Commission's model)—either because the more efficient firm wants to leverage its abilities, or because the less efficient firm wants to acquire a more efficient EDB.[8]

Figure 2. Impact of Merger between Tasman and Marlborough Lines



Under the current model specification, the post-merger EDB would have operating costs above the model's predicted level. This is shown by the square in the right hand graph lying above the trend line. Before the merger the costs incurred separately by Network Tasman and Marlborough Lines were around $7.5 million higher than predicted by the model. After the merger (assuming that operating costs remain the same), this difference grows to $8.1 million because the port-merger EDB has characteristics that suggest it should be more efficient than the separate EDBs before the merger. To achieve the same level of relative cost efficiency, the post-merger EDB would need to reduce operating costs by $626,000 per year (equivalent to 2.8 percent of pre-merger operating costs).

All cost reductions are good for consumers

This analysis helps to shed light on how the effects of scale have been captured in the model specified by the Commission. We find that the Commission's model does "penalise" EDBs for achieving scale to some extent—larger EDBs are expected to have

[8] A recent study on electricity distribution mergers in the United States suggests that experience in that sector is not consistent with the theory of efficient mergers. Rather, mergers have instead been prompted by managerial incentives, restructuring errors, and defensive strategies. See Kwoka, J and Politt, M *Industry Restructuring, Mergers and Efficiency: Evidence from Electric Power,* April 2007. Available online at http://www.eprg.group.cam.ac.uk/wp-content/uploads/2008/11/eprg07081.pdf

lower costs. However, the expected reduction in operating costs required for a merger to improve relative efficiency is reasonable (at less than 3 percent).

In fact, all decisions that reduce total costs while maintaining quality should be encouraged. The Commission's summary and analysis could help to highlight opportunities to improve the efficiency of EDBs by achieving scale (for example through mergers). This would help to achieve the purpose of Part 4 of the Commerce Act—to promote outcomes consistent with those observed in competitive markets.[9] In competitive markets, suppliers that operate at an inefficient scale lose market share and are eventually forced to close or sell their business to more efficient suppliers. Alternatively, such businesses can merge with others to achieve an efficient scale.

The working group should give specific consideration to ways to model the effects of scale, and encourage the industry to arrive at the most efficient structure over time.

3 Accounting for Transaction Costs

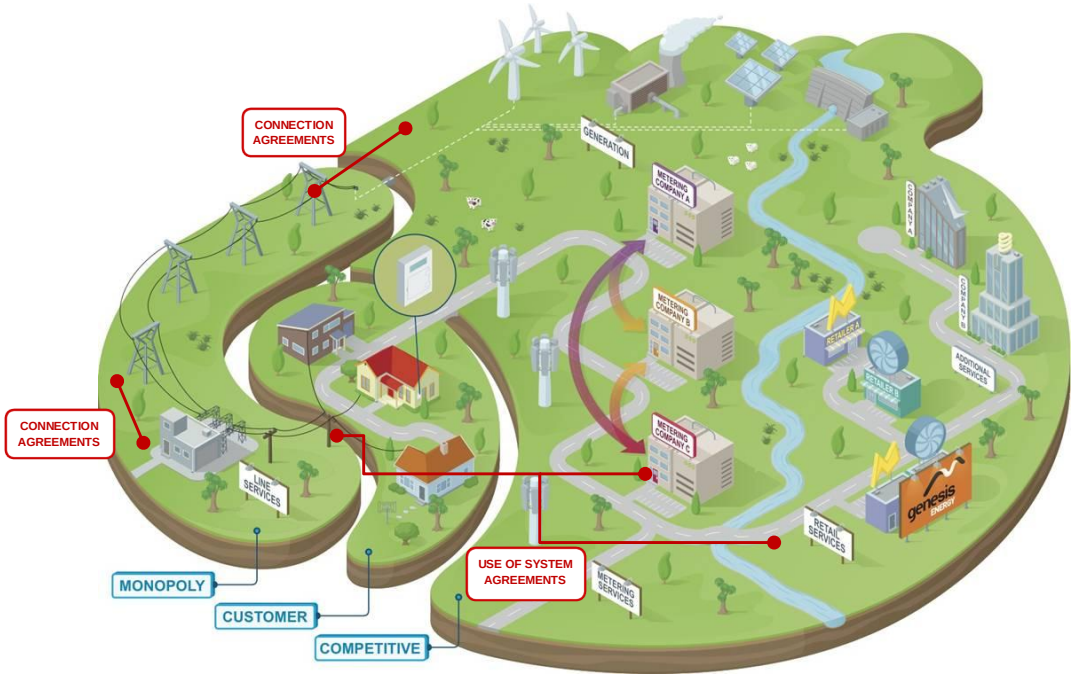
An important feature of workably competitive markets is that they help to minimise transaction costs in delivering a product from the source, through any required intermediaries, to consumers. This outcome is not guaranteed in regulated industries. Neither the current information disclosures nor the summary and analysis take transaction costs into account. This largely reflects the Commission's central role of ensuring that costs are no higher than they should be in the natural monopoly parts of the supply chain.

Transaction costs arise through negotiations between regulated businesses and other industry participants

Transpower and EDBs regularly interact with other participants in the electricity supply chain that are subject to competition. These interactions give rise to the transactions costs shown in Figure 3.. Generators and consumers that are connected directly to the transmission network negotiate connection agreements with Transpower, while retailers and metering companies negotiate with EDBs for access to network infrastructure.

[9] Section 52A of the Commerce Act.

Figure 3.: Transaction Costs in Electricity Supply Chain



Source: Genesis Energy

The transaction costs borne by regulated businesses may be listed in information disclosures as a component of operating costs. These transaction costs are passed through into lines charges to retailers and other customers. However, the portion of transaction costs that fall on other industry participants are not contained in information disclosures. These costs are also not analysed as part of any other regulatory processes. Although these transaction costs are borne by all participants, and are therefore largely competitively neutral, ignoring these costs may mean that they are higher than necessary.

Workably competitive markets provide discipline to manage transaction costs

The lack of attention given to transaction costs in contracting with regulated businesses is quite different from how workably competitive markets function. For example, there has been considerable interest in the past year about how arrangements for metering services in New Zealand work to minimise the costs of advanced meter roll-outs.[10] Because the market for metering is workably competitive, suppliers have strong incentives to ensure that services are delivered in a way that minimises transaction costs. This is true even for advanced meters that could provide value to more than one party (retailers and networks).

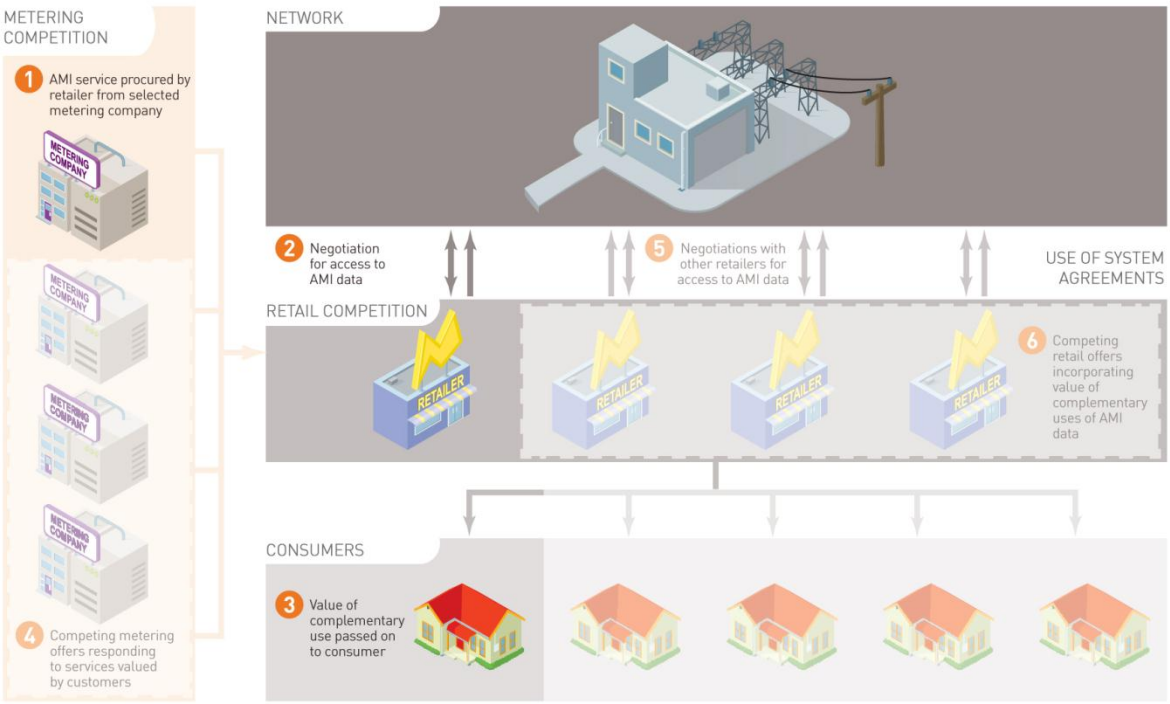
The negotiation process in the metering services supply chain is shown in Figure 3.. Once the retailer has procured a metering service that delivers advanced meter functionality (step 1), the network provider (or another party seeking access) negotiates with the retailer for access to the functionality that it values (step 2). The network provider is willing to pay an amount for functionality that reduces its overall costs of providing network services (assuming that the Commission allows such costs to be recovered through network charges). The retailer is willing to pay any access price that recovers more than the incremental cost of providing access (this price makes a

[10] See http://www.ea.govt.nz/our-work/consultations/priority-projects/AMI-nomination-MEP-data-access/

contribution towards the retailer's fixed costs). This allows the retailer to compete on the basis of a lower overall cost to serve its customers (step 3).

If the transaction costs incurred between retailers and networks are any higher than they need to be, retailers will suffer a competitive disadvantage and ultimately lose market share. This outcome is due to the important interactions that take place outside the negotiations between the network, the retailer, the metering provider, and the customer involved (shown in grey). Competing metering companies and retailers search for the lowest cost ways to deliver metering functionality to consumers, providing discipline on all costs (including the transactions costs) borne by suppliers.

Figure 3.: Access Negotiations for Complementary Use of AMI Functionality



Transaction costs should feature in information disclosures

For the electricity sector to deliver efficient prices, transaction costs need to be minimised. The information disclosures submitted by EDBs and GPBs to the Commission may be an appropriate place to examine transaction costs, and investigate whether there are ways to better manage those costs. Any assessment of transaction costs would also help to evaluate the measures being put in place by the Electricity Authority to standardise distribution agreements.[11]

4 Conclusions

The Commission has put forward some useful initial work on the summary and analysis of information disclosure. This will be developed and refined through a reference group. This note identifies two specific issues that the reference group should consider as part of its work:

[11] http://www.ea.govt.nz/our-work/programmes/market/consumer-rights-policy/model-arrangements/distribution-tariff/

- **The analysis of information disclosures should encourage regulated businesses to achieve an efficient scale of operations.** There is a risk that the approach proposed by the Commission may not identify EDBs that incur higher operating costs than they would if they merged with another EDB.
- **Current information disclosures do not factor in the transaction costs borne by unregulated industry participants that negotiate with regulated businesses.** Greater transparency around transaction costs would help to identify whether these costs are a result of lack of competition in certain parts of the supply chain, and possible remedies to any identified problems.