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By email
vanessa.sutcliffe@nt.gov.au

4 December 2013

Vanessa Sutcliffe
Director Utilities Commission
Utilities Commission of the Northern Territory

Dear Vanessa

Review of Power and Water Corporation - further analysis of benchmarking

The Commission has requested that Parsons Brinckerhoff undertake further analysis of the benchmarking that was included in our report entitled "Review of Power and Water Corporation's regulatory proposal for the 2014-2019 regulatory period". This letter sets out the results of that further review.

Initial benchmarking

Parsons Brinckerhoff's report included benchmarks that provided a view of the relative efficiency of Power Networks' opex:

- Opex per km of line versus Customer density
- Opex per km of line versus RAB per km of line.

The benchmarks for opex are normalised by km of line to account for differences in the volume of assets being managed. The benchmarks are displayed against factors that show the impact of the network size – customers per km of line (customer density) and regulated asset base (RAB) per km of line.

As a result of its analysis, Parsons Brinckerhoff concluded that:

"The analysis of total opex has found that Power Networks appears to require a high level of opex compared to its peers on a per unit basis, approximately three times the cost of the DNSPs with similar customer densities." (p.27)

"The sensitivity analysis showed that the uplift and economies of scale may account for a significant portion of the deviation from the trend line. While the adjusted value remains above the trend line, it lies within the range of peer businesses in the benchmarking sensitivity test, and therefore we do not recommend any global adjustments be made to the opex based on potential inefficiency identified through benchmarking." (p.116)

Parsons Brinckerhoff then undertook a review of opex within the opex categories provided for review and recommended a reduction in opex of 6 percent. The Commission has now asked Parsons Brinckerhoff to

determine the relative efficiency of the Power Networks proposed opex so as to provide further information for use by the Commission in its review.

Approach

The methodology adopted is to:

- examine the businesses that are furthest from the average trend line; assess possible reasons for the variance and remove from the benchmark group or adjust as appropriate
- calculate the percentage difference of each business from the trend line
- calculate the reduction in opex that Power Networks would need to achieve to reach the trend line.

Analysis

Parsons Brinckerhoff found that the company shown as J on the charts has a network supplying a mostly CBD area. Its ability to achieve economies of scale is significantly greater than the benchmark group. Parsons Brinckerhoff is of the view that normalising the data by customer density or km of line will not properly account for this difference. The impact of leaving company J in the benchmarking group is to lower the trend line, making Power Network appear less efficient. Hence, company J has been removed from the opex benchmarking.

Parsons Brinckerhoff found that all other businesses within the benchmarking group were appropriate.

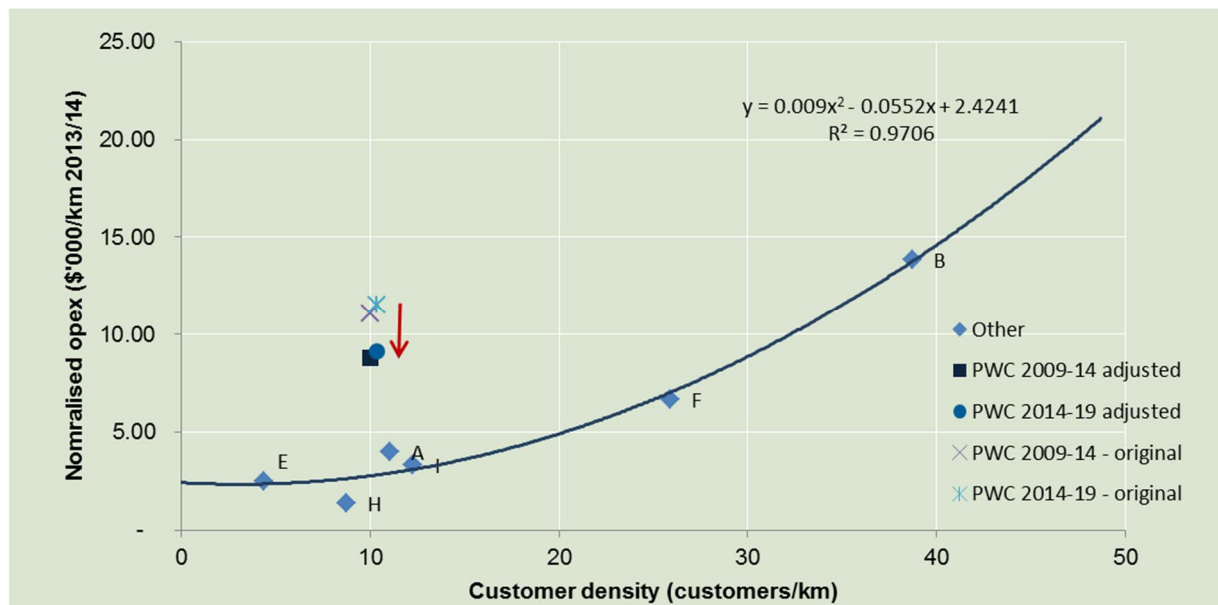


Figure 1 Normalised total opex vs. customer density

Figure 1 shows the benchmarking chart for Opex per km of line versus Customer density. The original chart omitted company J, so the chart is the same as originally provided. The proposed Power Networks opex was adjusted for regional uplift by applying a 30% adjustment to the assumed variable cost, which was

determined as the total opex less \$10m.¹ A polynomial trend line provides the greatest correlation to the data and intuitively is appropriate at lower customer densities where economies of scale are more difficult to achieve.

Table 1 shows the variance from the trend line for each company. Power Networks has the greatest variance (+224%), with the next largest positive variance being +38%.

Table 1 Variance from trend – normalised opex vs customer density

Company	Variance from trend line
PWC 1419 adjusted	224%
A	38%
I	8%
E	6%
B	1%
F	-5%
H	-48%

Figure 2 shows the benchmarking chart for Opex per km of line versus RAB per km of line, with company J removed.

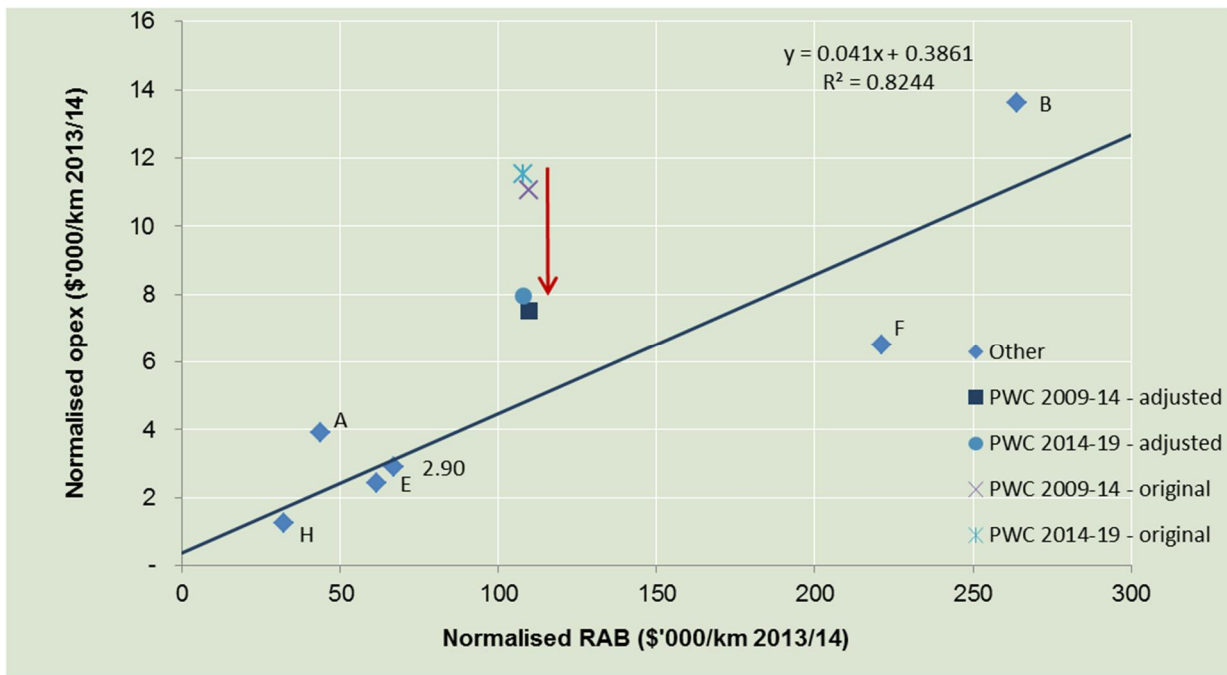


Figure 2 Normalised total opex vs. normalised RAB

As was done in the original benchmarking, Parsons Brinckerhoff adjusted the expenditure of all businesses in the sample to account for economies of scale and regional uplift, by removing an amount between \$10m

¹ Rawlinsons Australian Construction Handbook 2012 shows that the average of the regional indices that apply in Power Networks areas of operations are 30% higher than the base.

and \$20m to represent the fixed cost so that we could assess the variable component of the expenditure that benefits from economies of scale. We then reduced Power Networks by a further 30% to adjust for the Northern Territory uplift. The reduction in the deviation from the trend line when the fixed component is estimated to be \$10m is shown.

Table 2 shows the variance from the trend line for each company. Power Networks has the second largest variance (+65%), with Company A also having a significant positive variance of +79%. Both appear relatively inefficient when compared to the other businesses within the benchmarking group. Company A has a small RAB compared to line length, meaning that it may have some inability to achieve economies of scale.

Table 2 Variance from trend – normalised opex vs normalised RAB

Company	Variance from trend line
PWC 1419 adjusted	65%
A	79%
B	22%
I	-7%
E	-16%
H	-28%
F	-31%

We note that following the incident at Casuarina Zone Substation in 2008, Power Networks undertook a large asset replacement program. This program had the effect of increasing the value of the RAB by 150%. Power Networks' assets are now likely to be younger on average than its peers, and the value of the RAB correspondingly greater. In our view, the average asset age was likely to be older than its peers pre-2008 and slightly younger after the replacement program. A sensitivity analysis found that this is unlikely to materially affect the use of RAB as a normaliser in benchmarking expenditures in the period post 2009, i.e. the current and next regulatory periods.

Parsons Brinckerhoff concludes that Power Networks is relatively inefficient when compared to its peers.

Table 3 Opex reduction to achieve trend line

Benchmark	Power Networks variance from trend line	Opex reduction to achieve trend
Opex/km vs customer density	224%	55%
Opex/km vs RAB/km	65%	27%

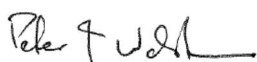
The reduction in Power Networks opex to achieve the trend line was then calculated for each of the benchmarks. Table 3 shows that based on the customer density benchmark a 55% reduction is required, however, this benchmark may not fully account for differences in the ability of the businesses to achieve economies of scale. Normally, the view provided by customer density would be expected to account for this, but when applied to Power Networks, customer density may not fully compensate for the unique topography of the Power Networks small network grouped into 4 distinct regions and separated by large distances. As customer density does normally account for economies of scale, this benchmark is not readily able to be adjusted further to improve the view provided by the benchmark.

The RAB/km benchmark on the other hand does not account for economies of scale and a suitable factor has been applied separately. Based on the RAB/km benchmark adjusted for economies of scale and

regional uplift, a 27% reduction would be required for Power Network to achieve the average of its peers. We note that this benchmark appears to indicate that Company A is either inefficient or the adjustment methodology has not appropriately adjusted its opex to account for its ability to achieve economies of scale. Nevertheless, in Parsons Brinckerhoff's view, the benchmark provides a reasonable indication of the relative efficiency of Power Network against its peers.

Parsons Brinckerhoff concludes that after allowing for a loss of ability to achieve economies of scale and for regional uplift, Power Networks would need to reduce its opex by approximately 27% to achieve the average of its peers.

Yours sincerely



Peter Walshe
Principal Consultant
Parsons Brinckerhoff