

12th April, 2012

Mr Brian Parmenter
Chairman
Queensland Competition Authority
GPO Box 2257
Brisbane, Qld, 4001

By Email: electricity@qca.org.au

Dear Brian,

Regarding : Submission in response to the Draft Determination of Regulated Electricity Prices 2012-13.

Power-Choice is Queensland's largest independent electricity broker serving the contestable contract market. We serve over 750 small and medium businesses, protecting and acting in their interest to improve their operational efficiency. We are in daily contact with our customers, providing them with customer service, issue resolution, works management, data analysis and dispute resolution mediation. We act as an agent for our customers and serve the vested interests of no industry player other than our customers: members of the Queensland public.

We support the Queensland Completion Authority (QCA), it's staff and the role it plays in providing services to the Queensland public. Your organisation's functions are mostly low profile; they are virtuous tasks that benefit all Queenslanders in balancing price control and industry viability across a range of factors.

In providing a response to the draft termination, we were bounded by the very limited amount of time provided, and our main area of interest being large market customers.

A summary of our key points are:

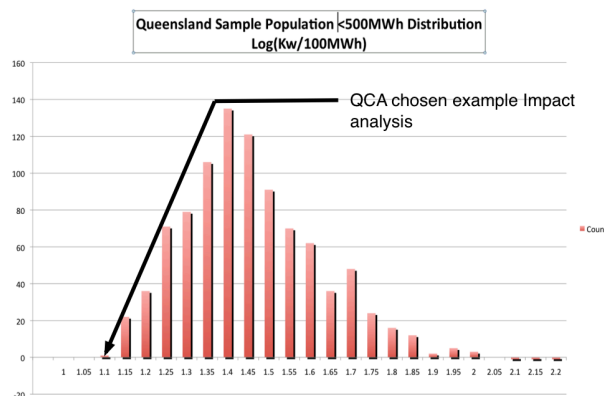
1. **Support of "N" Ergon Pricing:** We support the use of Ergon network average cost basis for large market tariffs if the Government policy for forced conversion of non-residential customers in Energex's area using over 100Mwh pa to market contracts proceeds.
2. **Insufficient Time for Review and Submissions:** The time provided for review of the QCA's draft determination of 8 business days, is not sufficient for a thorough review of the draft determination and construction of a public submission. It is reasonable given the Authority's assertion on the importance of such submissions, that more time for a review and response of the Draft Determination be provided.
3. **Omission of the impact on retail market customers forced conversion to market contracts.** The QCA has made no assessment of the forced conversion of non-residential customers using 100Mwh in Energex's area from the regulated tariff market to contestable market contracts. This omission does not provide the public with information to assess the impact on government policy, nor by

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inference the draft determination as it is dependant upon that policy decision. To assist the Authority, we have conducted such an assessment across a statistically significant sample set of 45 customers, which is attached as Appendix One of this report. It would be in the public interest for the QCA to provide such an impact assessment, provide full and frank advice to government and to provide businesses time to prepare for any major price shocks.

4. **Basic mathematical errors and poor understanding of demand-based tariffs in assumptions:** Some assumptions used to assess the large customer impact are mathematically illogical. The assumptions show either basic mathematical errors, expert ‘assertions’ of poor quality, or ignorance in the mechanisms of what demand measures in demand-based tariffs. The assumptions erroneously assert that the average of maximum kW Demand values must be lower than the average kW Demand values. In addition, the basis of comparison for these demand-based tariffs did not take into account the minimum chargeable Ergon demand on tariff 41 and 43 and therefore were based on a comparison with a pricing model not in existence. The comparison should be based on models in operation.

5. **Misrepresentative impact assessments:** In our examination of some of the mathematically valid assumptions of the large customer impact (the only area of the Draft Determination that time permitted), we determined that there was only one of the six assumptions in large market that was statistically responsible and non-erroneous. Based on a statistical analysis of the three of the six which were mathematically valid assumptions, two had a probability of 96% and 82% of not having a true population mean within +/- 20% of the chosen assumed values.



In other words, there is a mathematically derived high chance of the QCA’s assumptions being non-representative in their assertion as a typical impact assessment. This has resulted in a misrepresentative impact assessment on demand-based tariffs by the Authority in all except one of the examples provided. We make no opinion if any corrected assumption will show a positive or negative change in the current Draft Determination impact assessment. The point we make is that the assumed values are not likely representative.

6. **Commentary on large market tariffs:** Power-Choice believes that the Authority has taken a very narrow definition of ‘costs’ in the Draft Determination, and has not sufficiently differentiated between average ‘price’ and actual ‘cost’.

Power-Choice believes that the Authority has not sufficiently considered actual costs of making, producing or supplying the “N” component of the N+R pricing scheme.

We do not believe that the AER pricing models of Ergon and Energex reflect actual costs (including average and marginal costs) but rather a price of average costs.

Therefore, we do believe that the QCA is not able to take these pricing models created by another regulator with varying goals and objectives and assume that these will also meet the Authority’s objectives and responsibilities under the act as a simple act as a ‘pass through’ of those pricing models without considering actual costs and market aspects.

However, we are of the opinion that AER prices should be used as an average cost basis for each individual price model/tariff. Furthermore, every individual pricing model/tariff should derive outcomes on average equivalent to the AER approved pricing models, with a goal of nil impact on the ‘representative retailer’.

7. **Suggested alternative pricing structure for large market tariffs:** We would suggest that the QCA examine the actual costs of both N and R on a TOU (Time of Use) basis and suggest an alternative pricing model for demand-based tariffs.

With no technical metering restrictions we would suggest a TOU based element in all demand-based tariffs based on monthly demand measurements within Energex’s TOU suggested peak, off peak and shoulder block time periods (Appendix 2 of Draft Determination).

The prices of demand for peak, off peak and shoulder time periods should be priced in such a way to allow the expected result for the representative retailer to be the AER average Ergon cost.

Similar reasoning can be applied to derive energy cost prices more reflective of actual energy costs which match the TOU time periods, and derive expected average outcomes for the representative retailer to the current Draft Determination outcome.

Queensland’s recent state legislature election was a clear determination that the Queensland public demand more from its governments, public servants and public service organisations.

Our new government has the rare support of an absolute majority of the Queensland voting public and it’s public service policy for a return to independent, open, frank and fearless true servants of the public. We are grateful for the QCA’s approach to such matters, and would ask the QCA to strengthen it’s position of information provision, independence and openness; which is part of the reason we think QCA has a role in providing proposed policy pricing outcome information for the public and Government’s benefit.

I think that the Queensland public does not desire perfection from its servants, nor, in honesty, can anyone expect that, even of themself.

As a public we should welcome and praise public service executives who quickly admit shortcomings and errors with associated news of speedy responsive corrective actions. Administrative review panels and court cases makes 'fools' of all who participate, but reasonable men and women of virtue resolve their differences quietly and quickly.

We think we have identified some significant issues in only one small area we have examined of QCA's Draft Determination in the time permitted. The severity of which is like 'beauty': somewhat in the eye of the beholder. We believe many can be solved with a simple review and the appropriate application of a 'side rule' or equivalent.

However, we have also asked some harder questions, which will require the Authority to recall the virtues of it's calling: independence, professionalism and the highest of all callings - service to the Queensland Public.

Sir, all we can ask of you as a true servant of the Queensland public, to honestly, independently, openly and thoughtfully consider our submission and its impact on QCA's Draft Determination.

Regards,

Alan B. Jones, BAppSc,BSc(Hons),MInfoSys,MBA,DipFinSrv
Chief Executive Officer
Power-Choice Energy

Submission for QCA Draft Determination of Regulated Electricity Prices 2012-13

1. Support for N costing based on Ergon AER pricing

Power-Choice supports the rationale and reasoning of the Queensland Competition Authority (QCA/Authority) in choosing to use Ergon's AER as the average cost basis for large customer tariffs, based on the assumption that the new Queensland Government continues with the policy of the forced movement of non-residential Energex consumers who use more than 100MWh p.a. from regulated pricing schemes to market contracts. We agree with the Authority that this outcome is dependant upon that occurring, and further outcomes would be required if that forced conversion of supply arrangements is not undertaken.

2. Insufficient time to review Draft Determination

The Authority has provided 8 working days to thoroughly review and to construct response submissions. This time is insufficient for any reasonable thorough review of the Draft Determination. This time period allotted is incongruent with the Authorities first sentence of its Draft Determination; such a short time period limits public involvement and scrutiny of the Authority's work. We would suggest that perhaps 15 business days would be a reasonable time period.

Accordingly, we've been unable to review many areas of the Draft Determination, and have confined ourselves to an examination of the impact on large market customers. We can only draw inferences on outcome of the Draft Determination from the sections we have examined.

3. No impact analysis on non-residential large customers in Energex's network area on movement to market contracts.

We were disappointed that the Authority did not provide an impact assessment for the benefit of the Queensland public on the proposed Government policy of removal of non-residential Energex area customers who use more than 100MWhs of Electricity (and from the ombudsman) protected regulated market and forcibly require them to enter into commercial supply arrangements through contestable market contracts.

The public is always served better when it's servants provide information. We understand that as part of the pricing determination, there was no legal obligation for the Authority to provide impact analysis for those customers, who are leaving its

regulatory domain. However, there is a clear obligation of the Authority to consider any matter the Authority considers relevant.

We note that Authority states multiple times, that it does not have individual consumption data. However this information is readily available if there is a will to access it, (as the Draft Determination demonstrates with Ergon prepaid cards), as Network Providers/Metering Providers have access to sample information upon which statistical inferences can be assessed.

The authority indicated that there are approximately 530 large customers who may be affected.

This does not seem to ring true with our understanding of the market place. We would expect that there would be many more than that number effected. We are aware there are non-residential customers who use more than 100Mwh/pa who are not marked in industry computer systems as large market network users. Perhaps this is a source of potential impact scope variations. Our unsubstantiated estimations, (without any basis other than our opinion we may add), are perhaps double that number as a minimum.

In order to address this impact we have constructed a brief report into the impact of a statistically significant sample set of 45 customers, which either of 530, or a larger number of effected customers provide an interesting sample set to consider.

The impact on these businesses based on our assessment is substantial. It would be in their and we would argue the public interest for them to be properly informed prior to any impact on their organisation imposed by Government, if nothing else but to allow them to prepare for any such impact, and minimise potential job losses. This is particular true for the not-for-profit sector, which cannot easily raise more money to offset additional cost impacts.

As a matter of public interest we believe that if the independent Authority does not inform government and the public in a fearless and frank manner regarding policy decisions which effect directly or indirectly the Queensland public in the area's under its remit, then which other organisation has that role in our society?

Shouldn't the Queensland public be fully informed and served?

We have attached our analysis as Appendix One of this submission for your perusal, and would ask you to consider such a simple analysis for the benefit of the Queensland public and in the public interest.

4. Mathematical errors or mathematically impossible assumptions and incorrect understanding of current tariffs

We refer you to Appendix G, *Table G.3 Large business assumptions* of the Draft Determination, and our Table 4.1 below. We have found that of the Table G.3 only 2 of the 6 assumptions are entirely mathematically valid. Demand is a measure of the maximum kW measured in any half hour period. In all cases the average work performed (consumption) over a year must be lower than this maximum. In the

cases examined, only the example of tariff 42, and tariff 53 are completely mathematically valid, conforming to this simple mathematical constraint.

The Tariff 44 example is valid over all the year on average, but the peak volume average is excess of the average demand. Indicating that demand number is not representative of the proposed peak/off peak split.

In addition, the QCA has failed to take into account the current minimum demand rates of Ergon (75kW for Tariff 41 and 400 for Tariff 43), as these new tariffs would only be used in the Ergon network area.

On the assumption that the Tariff 42 comparison in Figure 7.3 of the Draft Determination is made against the current Tariff 41, the comparison of a QCA demand of 65kW is below the current minimum demand charge, and therefore is erroneous.

In addition, on Tariff 43 rates, Ergon's minimum demand charge is 400 and so the comparison of the mathematical invalid demand number of 207 as a basis of comparison is further incorrect.

Table G.3 is also internally inconsistent. Consider the demand assumption of tariffs 43 and 53. One being a low voltage demand the other being a high voltage. The latter measuring demand prior to a transformer, the former after transformation to lower voltages has occurred. Assuming these customers are likely from the same cohort of consumers (or we rely on the central limit theorem), then how does the addition or subtraction of a transformer more than double the maximum rate of work used by users in the same population? Transformer may increase energy usage, through the addition of energy loss factors and the relative point of measurement but they would not increase maximum Demand by a factor of 250%.

The resultant of these very basic mathematical errors or errors in QCA understanding of what demand measures and how it is calculated is quite concerning.

Therefore the associated impact assessment made by the QCA to inform the public of its Draft Determination is erroneous in those effected cases.

Table 4.1: Review of Table G.3 Large Business Assumptions Mathematical Validity

Retail Tariff	QCA Assumed Demand (Maximum Monthly kW)	Peak Annual Volume (kWh)	Annual Off Peak Hours	Average Off Peak kW	Peak Annual Volume (kWh)	Annual Peak Hours	Average Peak kW	Volume Annual (kWh)	Yearly Hours (365x24)	Average Annual kW	Mathematically Valid Assumption
Tariff 42*	65**							500,000	8760	57.1	✓
Tariff 43	207**							2,000,000	8760	228.3	✗
Tariff 44	458	1,575,000	4728	333	1,925,000	3528	477	3,500,000	8760	399.5	Partial
Tariff 53	514	800,000	4728	169	1,200,000	3528	298	2,000,000	8760	228.3	✓
Tariff 54	500	3,000,000	4728	635	7,000,000	3528	1736	10,000,000	8760	1141.6	✗
Tariff 55	500	13,500,000	4728	2855	31,500,000	3528	7813	45,000,000	8760	5137.0	✗

Assume 16 hours peak time per day (M-F) and 8 days Public Holidays

*We assume QCA are using the current Tariff 41 for comparison purposes with the new Tariff 42

** Ergon currently has a minimum chargeable demand charge of 75 on Tariff 41, and 400 on Tariff 43.

5. Statistically improbable example representative assumption values

Power-Choice holds a large database of current Queensland consumption data of non-residential customers, totalling over 1250 individual Queensland customer profiles. This represents approximately 5.7% of the Queensland large market. From this database we are able to generate statistically accurate assessments of price change and models. We have used this database to examine the veracity from a mathematical and statistical viewpoint of the assumptions used by the QCA in their impact assessment to determine the likelihood of assumption used being representative of the true mean of each.

To perform this analysis, we generated a +/- 20% variance around the sample values used and tested the hypothesis that the mean of the sample was within this range.

In layman's terms we were looking for the mathematical probability that the values used by the Authority were reasonable.

Summary:

Of the 3 assumptions examined, only one was statistically demonstrated to have a high probability of accurately representing the typical mean outcomes asserted by the Draft Determination, that is tariff 53 example in Table G.3. The tariff 42 assumed value had a probability of being 4% accurate, and the tariff 44 assumed value had a 19% of the true population mean being in the values assumed.

Therefore, assumptions other than tariff 53 are likely to be unrepresentative of the current Queensland market and be misleading.

We make no opinion as if any corrected assumption will show a positive or negative change in current circumstances. The point we are making is that the assumed values are not likely representative.

We have included the details below, for those mathematically inclined to follow our workings. Others are encouraged to skip to the next section.

Detailed statistical approach taken

To determine if the values were representative, Power-Choice's large market database as divided into three sets, representing below 500MWh, between 500MWh and 2GWh, and then between 2GWh-3.5 GWh. No analysis was performed above the 3.5GWh level, as the numbers of samples inside the Power-Choice database were not large enough to draw any statistical inferences.

The statistic chosen to examine was the ratio of Demand to 100MWh of consumption used, or in other words it shows given a level of usage what would be a statistically likely level of demand.

When plotted, this statistic was highly skewed with the resultant distribution being highly non-normal as shown in Figure 5.1. A simple LOG normalising transformation of the data set was taken, this reduced skew to allow for a statistical ‘normal’ distribution. However, time prevented us from using our preferred Box-Cox normalising transformation as it would have provided lower levels of skew. However, in two of the three cases our sample sets are reasonably high and we therefore can rely on the central limit theorem to overcome any non-normal distributions in our analysis.

The danger of taking simple means in these populations, with non-linear pricing models, is that the mean likely outcome could vary significantly from the outcome of the mean consumer.

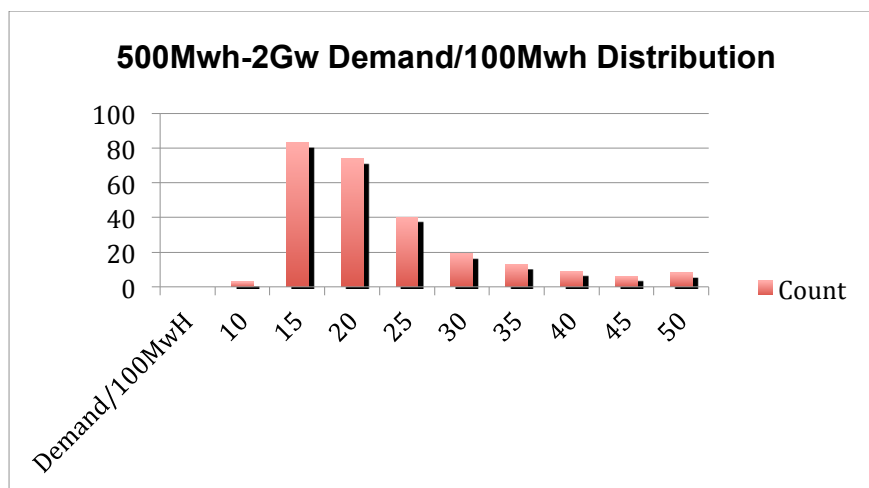


Figure 5.1: Skewed Distribution Example

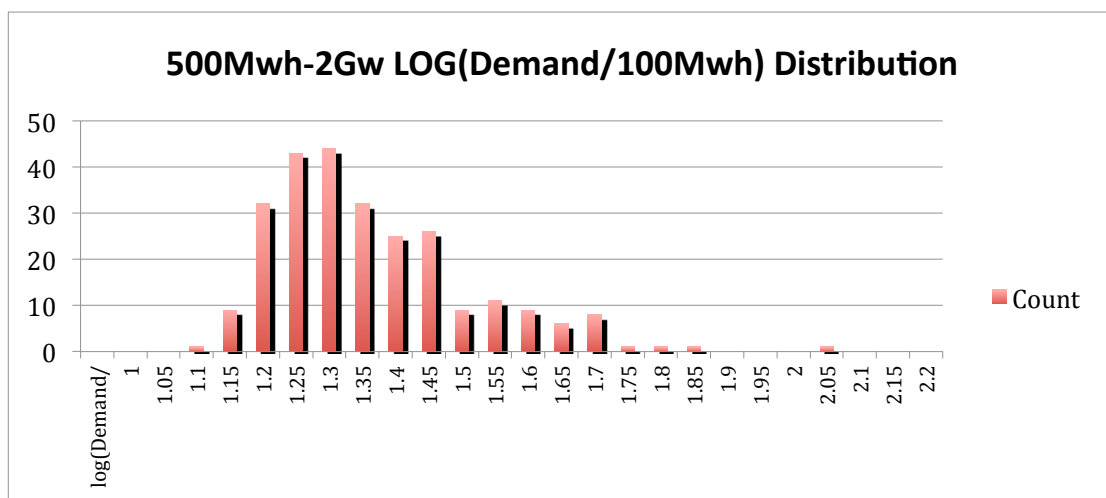


Figure 5.2: Log Distribution after transformation Example

Analysis of Tariff 42 QCA assumed values

This assumption was tested against a large sample size, numbering at almost 1000. The LOG distribution normalised the population well with a low Skew statistic. Based on the analysis, the assumed value for 65kW +/- 20% for 500Mwh, would have a 4% probability of actually containing the true value of the mean. The alternative view point is that there is a 96% probability that true representative value of demand and usage, is not with a 40% variance around the values chosen by the Authority.

Mean (LOG(kW/100Mwh))	StdDev (LOG(kW/100Mwh))	Skew (LOG(kW/100Mwh))	Count	QCA Demand (Assumption, -20%, +20)	LOG (Demand/100Mwh)	Z Statistic	Non-tail Probability	+/-20% Range Likelihood
1.4824	0.1681	0.5830	947	65	1.1139	-2.1914		
			-20%	52	1.0237	-2.7284	0.00318	
			+20%	78	1.1998	-1.6810	0.04638	4%

Table 5.2 Tariff 42 Analysis

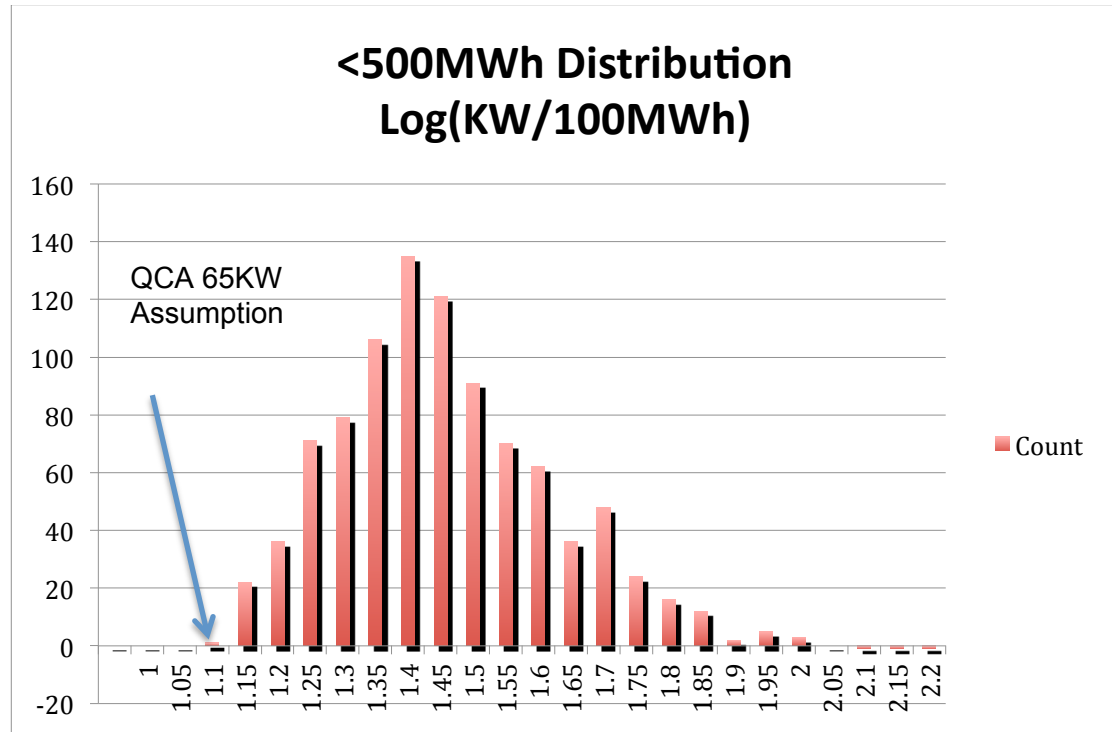


Figure 5.3 Tariff 42 Distribution Analysis

Analysis of Tariff 44 QCA Assumed Values

This assumption was tested against very small sample set within Power-Choice’s database with only 30 samples. The LOG transformation did not normalise the population well; with a significant Skew remaining in the sample distribution. Of the 30 samples taken NONE were in the range of the QCA assumed value. The issue in making such an analysis with low sample sets and a non-normal distribution, is that the central limit theorem is unlikely to apply, and any inference are likely unsure. However, given the nature of the distribution and our testing hypothesis, the resultant probability would likely be greater (due the right hand nature of skew) that would actually be the case in a non-skews distribution example, and would serve as a reasonable upper bound in any case.

Based on the analysis, the assumed value for 458kW +/- 20% for 3.5GWh, would have a 19% probability or lower of actually containing the true value of the mean. The alternative view point is that there is a 81% or higher probability that true representative value of demand and usage, is not with a 40% variance around the values chosen by the Authority.

But we note the point, that this in all likelihood overstates the probability due to right hand skewness of the sample distribution and the fact that none of the sample set lies in the range of the Authority’s assumed values.

Mean (LOG(kW/100Mwh))	StdDev (LOG(kW/100MWH))	Skew (LOG(kW/100Mwh))	Count	QCA Demand (Assumption, -20%,+20)	LOG (Demand/100MWH)	Z Statistic	Non-tail Probability	Range Likelihood
1.2799	0.0948	1.2466	30	458	1.1168	-1.7201		
			-20%	366.4	1.0199	-2.7423	0.0031	
			+20%	549.6	1.1960	-0.8850	0.1881	19%

Table 5.4 Tariff 44 Analysis

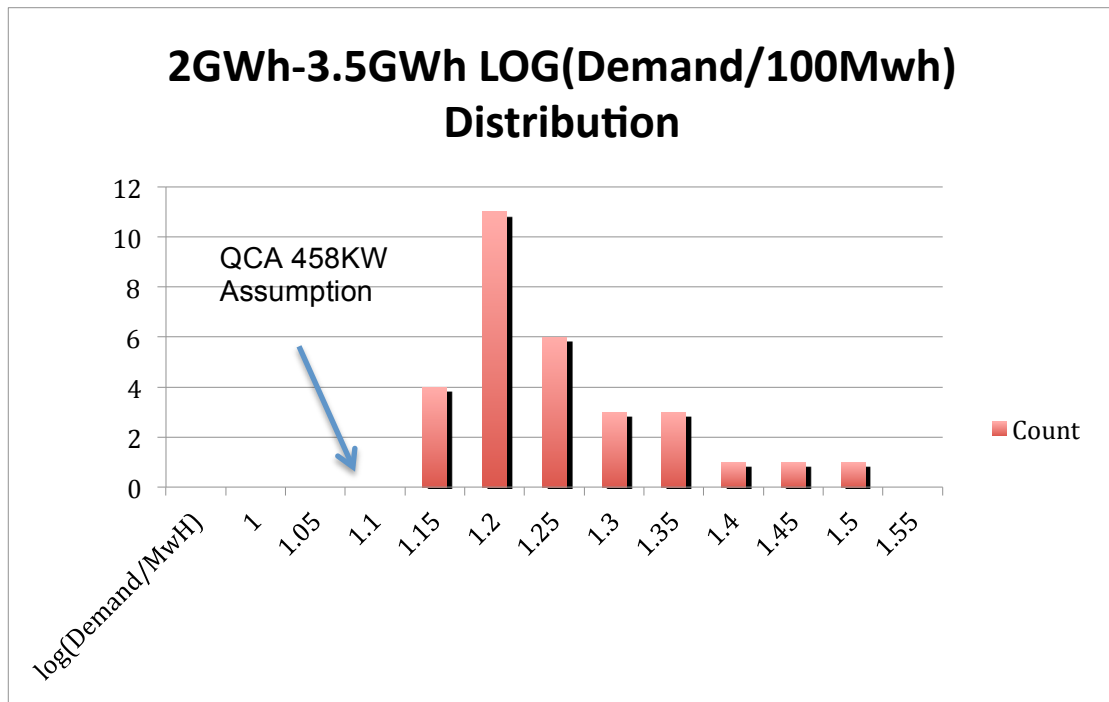


Figure 5.5 Tariff 44 Sample Distribution

Analysis of Tariff 53 QCA assumed values

This assumption was tested against a large set of samples, totally 259. The result sample population mean was almost exactly the Authorities assumed value for this tariff and usage rates. Skewness was still a minor issue in the distribution, but the sample set was sufficient to allow for a central limit theorem (CLT) based outcome. Due to the right hand nature of the skew, and the QCA value on the right hand side of the mean, and significant issue would like underestimate the probability, if it were not for the reliance on the CLT.

The +/- 20% variance showed a 44% probability of the true mean residing in the range of the variable. This is quite high considering the 40% variance range. To validate this outcome, a further test was conducted at a 60% variance range with a resultant probability increase to 60%.

This would confirm that for the Tariff 53 example the Authority’s assumed values appear robust and have a high likelihood to be representative of the true population mean.

Mean (LOG(kW/100Mwh))	StdDev (LOG(kW/100MWH))	Skew (kW/100 Mwh)	Count	QCA Demand (Assumption, -20%, +20%)	(Demand)/100MW H)	Z Statistic	Non-tail Probability	Likelihood
1.3875	0.1487	1.1451	259	514	1.4099	0.1506		
			-20%	411.2	1.3130	-0.5010	0.1918	
			+20%	616.8	1.4891	0.6829	0.2527	44%
			-30%	359.8	1.2550	-0.8909	0.3135	
			+30%	668.2	1.5239	0.9167	0.3203	63%

Table 5.6: Tariff 53 Analysis

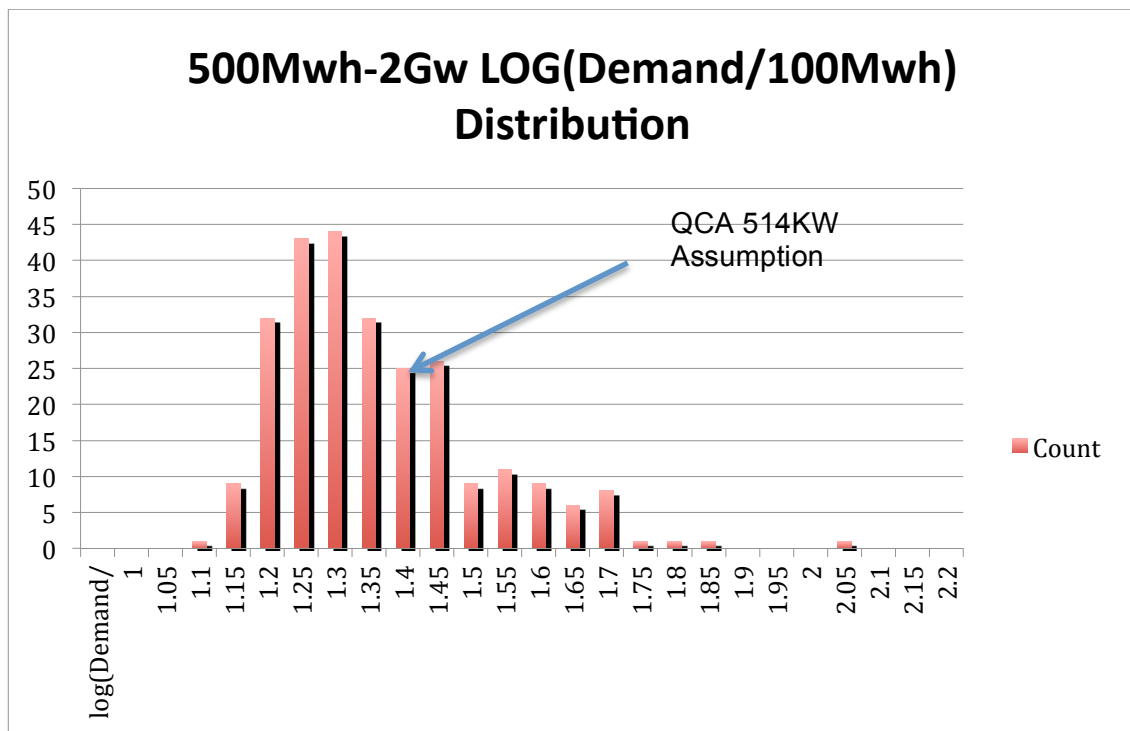


Figure 5.7: Tariff 53 Analysis Sample Distribution

6. Commentary on Draft Determination for large market consumers

Authority has not sufficiently considered the actual costs in making, producing and supplying the goods or services of the N component.

Power-Choice believes that the Authority has taken a very narrow definition of 'costs' in the Draft Determination, and has not sufficiently differentiated between average regulated 'price' and actual 'cost'.

Power-Choice believes that the authority has not sufficiently considered actual costs in the determination of the N pricing component as is required under it's act.

The AER regulated network prices for Energex and Ergon provide an average cost base pricing across time and do not consider TOU as a factor in determining price.

It is our position that AER approval or otherwise of Energex or Ergon Large customer price structures does not warrant that the any individual pricing structure reflect actual costs (including marginal and average costs) of making, producing or supplying the goods and services of the N component. This is of material importance when the N component becomes the dominant component in the N+R pricing element, and in particular examples in high demand with low consumption non-residential large customers.

Energex's Peak Demand Public Statement

ENERGEX's infrastructure is designed to cope with these peaks, and we can continue to upgrade the system to manage growing demand.

However, this is not the most sustainable approach as network peak demand only occurs on a handful of days, the extra capacity we must have available simply isn't used most of the time.

In fact, 13 per cent of ENERGEX's network capacity is only used for a few hours, a few times a year. That's wasteful, and it's expensive.

We are looking for more sustainable solutions that will see us use our resources more efficiently, impact less on the environment, and reduce customers' bills.

Source: <http://www.energex.com.au/sustainability/sustainability-rewards-programs/what-is-peak-demand>

Energex Peak Demand Public Statement

Ergon Peak Demand Public Statement

At Ergon Energy we invest millions of dollars each year in the infrastructure to help our network support demand during peak times and to avoid power outages. The cost of investing in this infrastructure is one of the causes of increasing electricity prices.

Although nobody likes to see prices rise, it's our responsibility to ensure a reliable electricity supply continues to meet our region's ever-increasing energy demands. To keep our electricity costs as low as possible, we all need to be smarter about how and when we use power. While we've developed a number of programs and strategies to help reduce the effects of peak demand, there's also plenty you can do.

<http://www.ergon.com.au/energy-conservation/demand-management/understanding-peak-demand>

Ergon Peak Demand Public Statement

Energex and Ergon are on the public record, for stating that their actual costs are affected by peak demand. They have schemes and promotions to reduce peak demand, but their AER approved large price structures for large market customers do not consider peak or time of use of demand in contradiction those organisations public statements.

This is evidence that the non-TOU based Energex and Ergon AER price structures for large customers in and of themselves do not represent a pricing structure considering actual costs, including average and marginal costs, nor other Queensland retail electricity market considerations.

Three questions to consider:

1. If the Authority does not consider peak demand to be actual cost to consider in of making, producing or supplying the goods and services of the N component of electricity, then what is it?
2. If the Authority does not consider peak demand to be actual cost to consider in of making producing or supplying the goods and services of the N component of electricity, then why does the network providers themselves say otherwise?
3. If network providers choose not to embed actual cost (average and marginal) information in N pricing models be they AER approved or otherwise, should QCA ignore that these actual costs exists and accept inefficient market outcomes of average cost pricing by 'pass through' rather than consider a pricing model that allows for actual average and marginal costs for the benefit Queensland public?

Market inefficiency increases of Draft Determination

Power-Choice believes that the Draft Determination result has less actual cost information in pricing than previous tariff structures. If implemented, will imply a loss of market information, and will increase market inefficiency and therefore increase costs of supply.

Power-Choice further is of the position that time of use (TOU) is an important pricing element that reflects actual costs for both N and R, and lack of that information in the Draft Determination price structures will add to market inefficiency.

Power-Choice is of the opinion that the cost of energy varies over time and that the energy cost is an actual cost of supply of electricity. Power-Choice is also of the opinion that the marginal cost of demand capacity varies over time (the varying use of the Distribution and Transmission networks) and is an actual cost of supply.

Market Information Loss in Draft determination

By way of example, we demonstrate the loss of market information and associated efficiency that the Draft Determination makes by examining the variance in Time of Use (TOU) of across the three sets of Large Market Customers we have previous identified.

If casually examined, the three groups of data would appear almost identical; with peak/off peak usage splits of 57/43, 57/43 and 54/46. The negligent regulator would observe such data and then deem that the need to allow for TOU based pricing would be not a great need, as a 50/50 split (no TOU) would be a reasonable approximation. (See table 6.1)

They would be quite wrong in that assessment. If we examine the standard deviation and rely on the Central Limit Theorem for normalcy assumptions, we see the populations are quite varied. With a standard deviation of 10-11%, over 25% of the population have splits that range from 68-80/32-20 for peak bias and similar for off peak biases.

Statistically the variance of consumption across TOU is significant. This also varies across usage group. Consider the reduction of variance within the large consumption group of 2-3.5GW, which is half the variance of the other groups.

1236 Sample of Qld Large Customers		Mean Estimate	Standard Deviation Estimate	68.2% of population: One Standard Deviation from Mean		26.2% of population: Between 1 and 2 standard Deviations	
				low	high	low	high
0-500Mwh 947	Peak	57%	11%	46%	68%	34%	80%
	OffPeak	43%		54%	32%	66%	20%
500Mwh-2GWh 259	Peak	57%	10%	45%	66%	36%	76%
	OffPeak	43%		53%	34%	63%	24%
2GWh-3.5GW 30	Peak	54%	6%	48%	61%	41%	67%
	OffPeak	46%		52%	39%	59%	33%

6.1 Time of Use Information Market information loss in Draft Determination

Graphically below, the information loss in market pricing is shown in diagram 6.2. The pricing model as proposed in the Draft Determination is only efficient if the actual distributions of 1, 2 and 3 are the same as the draft decisions assumed efficient consumption usage as shown in 4. Clearly, they are not the same.

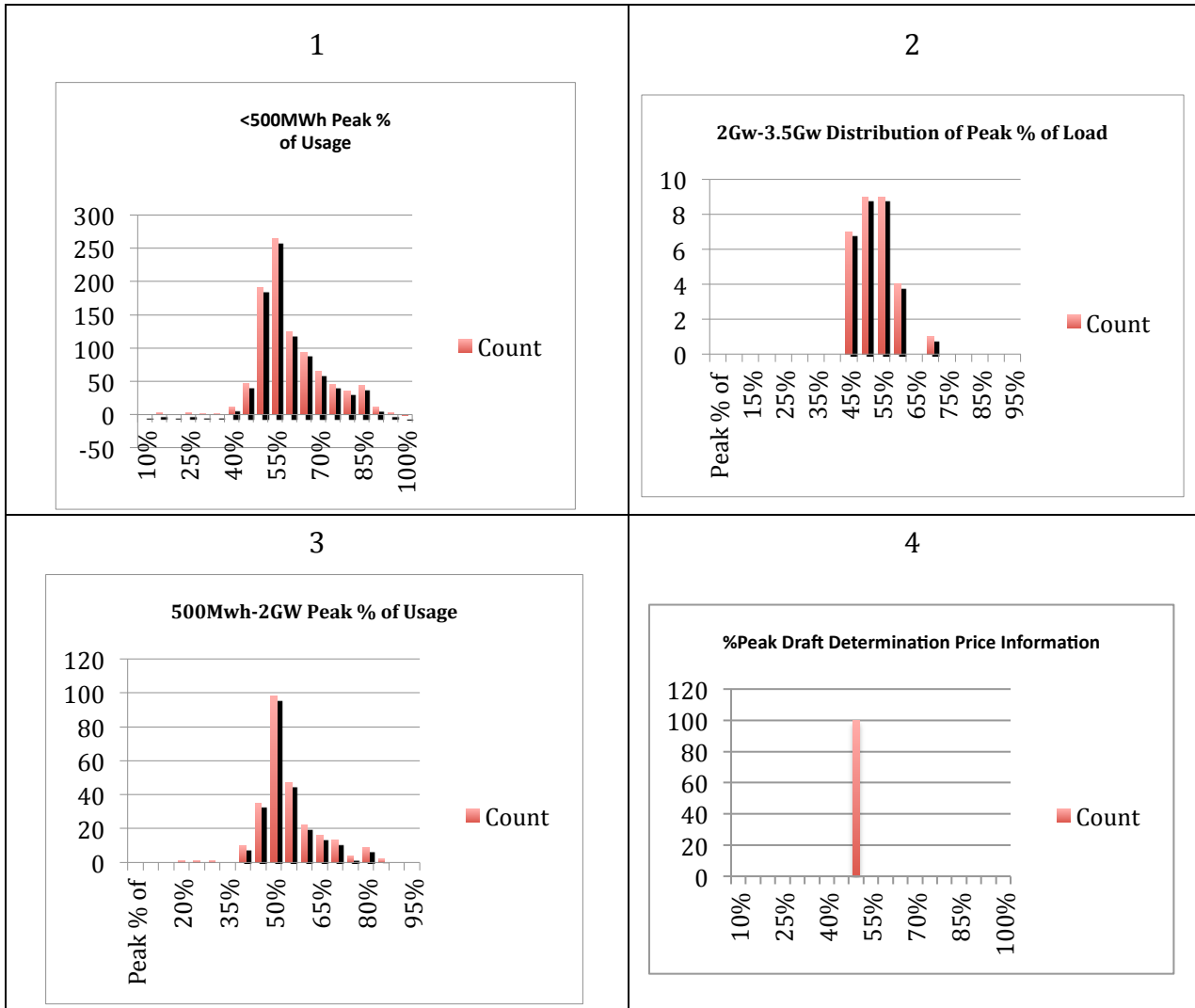


Figure 6.2: Variance across TOU patterns compared to Draft Determination Assumption

AER pricing

It is Power-Choice’s position that the AER regulated prices of Energex and Ergon do not reflect average and marginal costs of making, producing and supplying the N component. They reflect the average cost pricing alone, and not the actual costs.

We are also of the position that the ‘representative retailer’ should not be disadvantaged in any pricing model that the Authority produce that would effect the competition in the Queensland market by distorting average input costs and associated regulated pricing over time.

Power-Choice’s position is that the N pricing models that the Authority should produce should reflect actual (marginal and average) costs, but have an expected price outcome of the AER regulated average price for the ‘representative retailer’. In effect, on average be ‘pass through’ but individually reflect the actual costs of supply.

In summary

Therefore we believe that the QCA is not able to take large customer AER pricing models created by another regulator with varying goals and objectives and assume that these will also meet the Authority’s objectives and responsibilities under the act as a simple ‘pass through’ of those pricing models without considering actual costs or market aspects that underpin those price structures.

However, we are of the opinion that large customer AER prices should be used as an average cost basis for each individual price model/tariff and every individual QCA pricing model/tariff should derive outcomes on average expected equivalent to the AER approved pricing models, with a goal of nil input/revenue price distortion on the ‘representative retailer’.

7. Suggested alternative tariff structure for large market customers

We refer the Authority to Essential Energy’s AER approved price model, specifically Tariff BLND3A0, which we believe is a pricing structure which can reflect actual costs of both N and R and lead to more efficient market outcomes. In summary, if implemented this scheme in Queensland Large Customer tariff models, it would appear as table 7.1 below.

Tariff Code	Service Fee ¢/day	Energy Off Peak ¢/kWh	Energy Shoulder ¢/kWh	Energy Peak ¢/kWh	Off Peak Monthly Chargeable Demand \$/kW	Shoulder Monthly Chargeable Demand \$/kW	Peak Monthly Chargeable Demand \$/kW
42	791.847	A1	A2	A3	A4	A5	A6
43	4456.733	B1	B2	B3	B4	B5	B6
44	3873.79	C1	C2	C3	C4	C5	C6
53	2528.319	D1	D2	D3	D4	D5	D6
54	58385.072	E1	E2	E3	E4	E5	E6
55	273479.330	F1	F2	F3	F4	F5	F6

Table 7.1 Proposed Price model for Large Customers

The values of A1..3->F1..3 should be chosen so the average expected energy revenue for the representative retailer from that tariff being equal to energy price of the Draft Determination for that tariff.

The values of A1..3->F1..3 should be chosen such that they reflect the actual marginal and average costs of R component in a TOU basis.

The values of A4..6->F4..6 should be chosen such that the average expected demand revenue for the representative retailers being equivalent to those demand prices of the Draft Determination for that tariff.

The values of A4..6->F4..6 should be chosen such that they reflect the actual costs on a TOU basis of network including actual average and margin costs including peak demand.

We would propose that the TOU time classifications for Peak, Off Peak and Shoulder be taken from Energex's proposal in Appendix 2 of the Draft Determination.

APPENDIX 1:

IMPACT ANALYSIS of proposed forced conversion for SME's from regulated electricity tariff market to contestable market contracts.



Impact Analysis:

Proposed forced conversion for
SME's from regulated electricity
tariff market to contestable
market contracts at 1st July 2012.

April 2012

Change and Release Control	
Version	12
Release Date	10/4/2011
Approved for Release	10/4/2011
Reviewed By Operations	10/4/2012
Reviewed By Engineer	10/4/2012

1 Executive Summary

In May 2011 the Queensland Government announced a proposed compulsory conversion from the regulated tariff market to unregulated commercial contestable market contracts within the Energex network area, for any non-customer who uses more than 100MWh p.a. (which equates to approximately \$2000 per month).

This information has not been widely published and its impact is not widely understood by the general community.

The Queensland Competition Authority released its preliminary report into regulated Retail electricity prices on May 30th, 2012. In this report, no impact analysis was conducted by the regulator into the proposed forced movement to market contracts.

QCA estimate that only 530 customers may be effected. However, due to the mechanisms of customer classification reporting used by the QCA and increases in consumption by 'small' customers to more than 100Mwh, Power-Choice believes that many more business may be affected than what is reported by regulators and industry classification computer systems.

This report seeks to examine the scope of this announcement and it's impact on industry groups by looking at specific individual small to medium businesses, and report it in a manner able to be easily understood by the general public.

45 Energex customers' individual circumstances were analysed to determine the impact along with a market pricing sensitivity analysis.

A 'straw poll' survey was also conducted to determine customer awareness of the proposed change. Most small businesses are unaware of their pending forced removal of protection from the Electricity ombudsmen, and the severe commercial penalties that can apply in the contestable contract market.

The commercial impact on many of these business will be substantial, particularly those with limited revenue and electricity pricing awareness such as churches.

In addition, there are likely practical issues in conducting a forced conversion in such a short timeframe where inappropriate site situations would require significant upgrades.

Through an in-depth analysis of a sample of the affected businesses, Power-Choice estimates that of the businesses examined, energy costs will increase by on average 33.34%, with a maximum of just over 123%.

A market sensitivity analysis was also performed to reveal what the impact would be if there was change in market prices. This analysis returned results that definitively show that the impacts of the forced conversion will remain severe for many of these businesses in Energex's region.

2 About Power-Choice:

Power-Choice – Queensland’s largest contestable market energy broker.

Power-Choice is an ISO 9001:2008 certified, independent energy broker and consultant. Power-Choice represents over 750 small to medium Queensland enterprises (SME) in the contestable energy market and provides energy analysis, data management and contract brokering services.

Qualified electrical engineers back our on-site, professional business practices. Our passion for customer service means that our SME customers can have access to the same sorts of service and expertise normally reserved only for larger organisations.

3 Purpose of report:

The purpose of the report is to examine the potential adverse pricing impacts of the proposed Queensland Government energy changes within the SME market place.

It was noted that the Queensland Competition Authority did no impact analysis on the proposed government policy, and omitted to provide the Queensland public information about how this change may effect their business operations.

This report’s scope does not include the merits or rationale behind the forced conversion from the regulated tariff market to the contestable market.

The aim of this report is to provide estimated impacts on selected industries, based on detailed analysis of 45 businesses that would be forced onto the contestable market.

It is designed for general public consumption.

The modelled pricing, data, results and outcomes have been prepared, assembled and reviewed by Power-Choice electrical engineers.

Terminology

Many terms are used interchangeably to describe the contestable market, including large, contestable, market contract; that is, the market in Queensland for consumption of electricity over 100MWh per annum.

For the purpose of this report we will be referring to this market as the **contestable market** and the regulated tariff market as the **tariff market**.

Power-Choice believes on the basis of our sampled data that the majority of the current regulated tariff customers in Energex’s network area who use more than 100Mwh pa are largely small to medium enterprises (SME).

To simplify definitions, the term “customer/s” has been used when referring to non-residential customers.

4 Queensland electricity market background and overview:

4.1 Background

This background is to provide a brief and broad overview of the Queensland electricity market, current regulatory environment and proposed changes - specifically from a consumers viewpoint. It is designed for general consumption and biases towards clarity and accessibility rather than technical terminology precision.

4.1.1 The Queensland electricity market

The Queensland electricity market is currently divided into two segments for non-residential customers: The tariff market (customers who can access regulated tariffs), which has regulated pricing effectively set by the Queensland Competition Authority (QCA) by delegation from the Minister; and the contestable market, which contains both regulated and non-regulated pricing components.

The Queensland contestable market is only accessible for customers who consume more than 100 mega watt hours (MWh) per annum. These are deemed in the industry jargon as 'Large' market customers.

Various industry systems classify connections / customers as 'large' or 'small', however due to the variance of consumption, these aren't always definitive. For example, it is possible for a 'small' customer to actually consume more than 100MWhs and this not be recorded and reported as the consumers' consumption changes over time.

To save confusion, we will use the terminology of 'large' customer to mean that they use 100MWh's pa, rather than their recorded connection type.

100MWh per annum equates to approximately \$2000 per month of tariff market electricity depending on the business' current tariff arrangement.

***Large market customers aren't so large:** 100MWh/pa equates to the same amount of electricity consumed by small local convenience stores, gyms, engineering and manufacturing firms, schools, swimming pools, medium sized churches or larger butchers in a year.*

Again, the word 'large' is an arbitrary industry defined term, as many very small SMEs are 'Large' customers in the eyes of the electricity market classification.

4.1.2 Current policy of SME electricity choice:

Current regulations allow for businesses to choose between the tariff market and the contestable market, and make an optional transition from the tariff market to the contestable market. Once a customer is operating on the contestable market for electricity, in most cases they may not return back to the tariff market.

4.1.3 Significant differences in operation:

The pricing structures, commercial arrangements and even metering vary significantly between the two markets. With the contestable market holding significantly more commercial risk and complex pricing.

For instance, there is no comparable consumer protection for SME's on the contestable market, compared to the tariff market. There is no ombudsman for commercial dispute resolution.

Many consumers see the benefit of the contestable market as better pricing mechanisms and fixed energy contracts allow for businesses to better manage their costs. SME's can also choose to have a broker represent their interests and provide contract management in the contestable market.

4.1.4 Who pays whom:

In the tariff market, customers pay a fixed tariff peak and off peak rate to their electricity retailer who then pays Energex / Ergon (network providers) and other parties. The Australian Energy Regulator (AER) regulates prices in this market.

In the contestable market, a customer must pay their retailer for both energy costs (sourced by the retailer), and other parties costs. In effect, the retailer is a billing agent who bears the commercial risk for Government, network provider and other parties, who have their components 'passed through' to the customer via their retailer. Costs on customer contestable market bills include:

- Contract energy costs for actual electricity consumed. These are hedged contracts for consumption sourced by the retailer (AGL/Origin/TRU Energy/ERMPower/QEnergy/Momentum etc).
- Energy costs for electricity lost through Translink/Ergon/Energex's electricity network. These costs vary significantly depending on location.
- Government renewable energy schemes.
- Metering charges and value added services.
- Network charges according the pricing schemes of Translink/Ergon/Energex. These also vary depending on location and electricity usage behaviour.
- Other market costs.
- And in the near future included explicitly, or implicitly in other amounts, the federal Clean Energy Scheme, also known as the **Carbon Tax**.

4.1.5 Key differences between the contestable and the tariff market:

Table 1: Variance highlights from the SME commercial perspective

Topic	Tariff Market	Contestable Market (CM)
Contract cancellation:	Generally less than \$100	<ul style="list-style-type: none"> - Common Law contract with high contract cancellation clauses with retailer. - Typically cancellation means 'paying out' the contract over its term. This could mean tens of thousands of dollars. - Typical contract conditions include: Penalties for variance of usage. 14-day payment terms. May be cancelled by retailer at their discretion.
Penalty for out of contract, or poor contract management:	Nil	<ul style="list-style-type: none"> - Severe 'penalty rates' can be applied for customers being out of contract.
Prices constant across the state?	All prices are fixed.	<ul style="list-style-type: none"> - Network pricing varies between Ergon and Energex and across their network areas. - Loss factors also vary depending on location. - Electricity costs can vary over the term of the contract. - Pricing for contestable market contracts is not publically available. They are non-market 'over-the-counter' contracts. - Due to the nature of the commodity based contestable market, quotations for contracts generally expire within 5 business days. - Switching retailers can take time and possibly results in more out-of-contract penalties. - It is common for contestable market quoted energy prices to vary from customer to customer at the same time. - The daily price of electricity (peak/off peak) can vary significantly. - Retailers are not obligated to provide competitive pricing. - Energy pricing varies according to the consumption profile of the customer's site. If the customer has multiple sites with various contract start and end dates, the prices for each site will certainly vary. - Comparison of offers involving stepped and flat, multi-period rates and various rates per site makes comparisons between contracts non-straight forward. - Energex and Ergon AER approved network tariffs are 'self' selectable and customers can choose which regulated pricing network tariff they will be charged against.
Current pricing scheme choice:	Various pricing schemes are available for the customer to choose	<ul style="list-style-type: none"> - No real choice is available. - Network pricing and energy prices are based on peak and off peak usage rates and electricity usage behaviour. - Usage is measured in kilowatt-hours (kWh) and is the amount

	<p>from.</p> <p>Tariff 20 – usage only</p> <p>Tariff 22 – peak and off peak usage</p> <p>Tariff 41 – demand and usage</p> <p>Tariff 43 – demand and peak and off peak.</p>	<p>of energy consumed.</p> <ul style="list-style-type: none"> - Demand is the rate at which energy is consumed for the maximum period of 15/30 minutes in any calendar month. - Energex and Ergon charge differently for Demand on their network pricing. Demand has no role in energy pricing. Demand is measured in kW in QLD (kW - the amount of work done). <p><i>It helps many SME's unaware of the complexities of Electricity simply to think of Demand as FLOW RATE of electricity and usage in kWh as VOLUME.</i></p> <ul style="list-style-type: none"> - The current definitions of peak vary slightly between tariff and contestable markets (by 2 hours a day M-F)
Customer protection:	Independent Ombudsman	<ul style="list-style-type: none"> - There is no Ombudsman for the Contestable Market. - Businesses and SME's either operate with self managed risk processes or rely on independent consultants and brokers (like Power-Choice) to provide commercial risk reduction, data management, reporting and contract establishment and broking. - There are no regulations/accreditation for electricity brokering/consulting. Choice of a quality, professional broker is left to the customers own risk. <p>Caveat emptor.</p> <p>Small businesses are expected to negotiate a commercial contract in a complex market with some of Australia's largest companies.</p>
Metering:	Normally included in tariff.	<ul style="list-style-type: none"> - All sites on the Contestable Market require interval smart meters supplied by a metering service provider. These can range in price from \$900 - \$1,300/pa. - Meter sites must meet relatively new National Standards. Significant upgrades requirements are not uncommon (e.g. from isolation links \$500 to \$15,000 for new switchboards).

4.2 Complexity in switching from tariff to contestable markets

4.2.1 Metering companies: an important role in the contestable market

Switching from tariff to contestable markets requires that the customer's site have 'smart' interval electricity meter installed, or more correctly, digital meters, which are read remotely typically by GSM mobile phone connection.

These devices record and store electricity usage every 15 or 30 minutes and transmit it back via several parties and eventually to the retailer for billing.

The meter must be from an authorised meter provider, but may not be from your network provider (Energex/Ergon) or retailer (AGL/Origin/TRU/QEnergy etc.). Meter providers (MP/MDA) have different features and pricing. Some include.

- Energex's subsidiary 'Metering Dynamics' provides contestable meters.
- Origin Energy's subsidiary 'Acumen Metering' has its own metering company.
- NSW's Ausgrid provides contestable meters.
- NSW's Endeavour Energy provides contestable meters.
- The customer may choose the metering provider as well as their features and services.
- Other metering companies include DMS, TCA etc.

The retailers may nominate their own metering company. The service levels and installation assistance varies between metering companies, and can effect the quality of service, available features and billing.

4.2.2 Contestable metering installation issues

To install a contestable market meter, the site must comply with national metering standards. Many sites in Queensland do not comply with this standard and must be upgraded. This can include:

- Meter mounting material;
- Installation of isolation links and;
- Switching upgrades.

The cost of these installation upgrades may vary from \$1,000s to \$10,000s depending on the individual location and circumstance.

In most commercial circumstances, the tenant is responsible for the electricity contract and payment. However, in typical commercial tenancy agreements the landlord is responsible for capital and site equipment. Moreover, it is not always clear and may indicate some shared costs for any upgrades.

This can lead to significant commercial tension and disputes between landlords and their commercial tenants which can cause lengthy delays.



1950's style switchboard = \$12,500 upgrade for a contestable market meter.

Most contestable market metering requires telephone landline or GSM mobile reception for data transmission. Remote or poor GSM coverage may require additional telephone lines to be installed. If the metering point does not receive reliable GSM coverage and is not near existing telephones lines, trenches may need to be dug, at the owner's expense, to lay telephone landlines and other telecommunications.

Cases:

Example 1: Many sites have had electrical work over many years by various tenants without involvement with the landlords – these may have been completed over 20-30 years. The resultant installation can have overloaded circuits, space limitations, poor material design and other complexities. All these issues need to be fixed if the tenant uses over 100MWh, urgent or otherwise.

Example 2: Rural and semi-rural SME's operating resorts, health retreats, or agricultural businesses with poor GSM mobile reception would require additional installation costs for contestable market metering.

The proposed forced conversion, but not yet legislated conversion in less than 3 months time, provides little time for upgrades changes to be practically implemented in addition to the contractual and payment issues between landlords and tenants.

4.3 Ministerial announcement

The Previous Queensland Minister for Energy and Water Utilities in a letter to the Queensland Competition Authority (QCA) on September 12, 2011 indicated that the Government's intention was to move non-residential Energex customers (SME's) who use more than 100MWh per annum to the contestable market.

"It is the Government's intention that from 1 July 2012, all large non-residential customers in ENERGEX'S network area who consume over 100 megawatt hours per annum will be unable to access regulated tariffs and must move to a market contract; .": Hon Minister Steven Robertson

*Source: 11 May, 2011 letter to Queensland Competition Authority
<http://www.qca.org.au/files/ER-MinEnergyWater-RevEPandTS-2011-MINDIRNOT-Ltr-0511.PDF>*

It is Power-Choice's understanding that there may be required further legislative or regulation changes to enact this intention by the new LNP government.

4.4 Scope of impact

4.1.6 Who will be affected?

The Queensland electricity distribution networks are almost all managed by two Queensland Government owned organisations, Ergon and Energex.

Energex manages electricity distribution in southeast Queensland, from roughly Gympie down to the east of Toowoomba and to the NSW border (see appendix 1). Ergon covers all other areas along with NSW's Essential Energy providing electricity distribution to some boarder locations near Stanthorpe.

The proposed change will only affect those who are located within Energex's region.

The Queensland Competition Authority (QCA) indicated in it's March 30 report that it does not have access to current detailed individual customer data¹ and seemingly, not even on a sampled basis to provide statistical inferences on pricing impacts.

The QCA indicated that only 530 customers will be affected. Power-Choice finds this number to be incongruent with its experiences, and would suggest the low estimate is possibly due to variances in classifications used by the QCA, and the unreported but increased consumption over time of many organisations.

In many cases Power-Choice has noted that customers who are using in excess of 100MWh pa are still marked as a 'small' customer in industry computer systems. The precise number of this category is not easily determined, but in Power-Choice's experience, this will easily number in the hundreds or possibly low thousands in addition to the 530 estimated by QCA.

It is possible that the QCA could easily obtain accurate information by simply enquiring on retailers for statistics, on all tariff customers who have used more than 100MWhs in the previous 12 months.

Other larger electricity markets such as NSW, VIC and SA have set the definition of 'Large Market' to be 160MWh/pa. This means that in Queensland, on a population basis, there are many more smaller SME's who are classified as 'Large Market' customers than elsewhere in Australia.

¹ Page 81, QCA Draft Determination Regulated Electricity Prices 2012-13.

Arguably, these business due to their size, are less able and capable to operate without assistance in the contestable market as a group than any other market in Australia.

5 Analysis of adverse impact

5.1 Methodology

Power-Choice has an extensive database of actual usage and demand on Queensland SME's from its customers. This is the type of actual individual usage information that the QCA does not have ready access.

This represents over 2,000 different site locations or approximately 10% of total Queensland large market electricity consumers. It is likely to be the largest, up-to-date, non-network/government managed demand and usage database in Queensland.

Analysis across such a dataset should provide statistically robust outcomes.

5.1.1 Demand measurement data:

Demand measured for Power-Choice customers is taken from physical digital meter readings wherever possible. Demand is the **major factor** that determines the cost for Energex's network pricing on the contestable market.

Energex records and stores this customer Demand information on meters at the customer's premises, but it is not transmitted to the customer via retailers unless they have a Demand-based tariff (tariff 41 or 43).

If the customer is on a non-Demand based tariff (tariff 20 or 22) their Demand is not shown on their bill. As far as research shows, retailers do not keep non-billing meter data (Demand). Energex generally has access to current, recent and average Demand information from its source – digital electricity meters. Demand information may not be available on older style analogue meters, as these only measure usage, not rate of consumption and these are found in power-choice's experience for larger customers in a minority of installations.

Any customer on tariff 20 or 22 examining their bill has no way of determining their demand and in turn, the impact of any change to Demand-based pricing that is currently proposed, even if they have a digital meter installed.

Power-Choice determines the Demand from direct meter readings taken with the customer's permission which provide a high level of accuracy and precision in results. The resultant models of pricing are based on these accurate measurements.

5.1.2 Usage data:

Individual electricity Usage data was taken from 12 months of billing history or from the customer's electricity retailer.

5.1.3 Over-the-counter² (OTC) contestable market contract pricing:

Power-Choice sees the results of many specific OTC market contract-pricing scenarios each week. This provides Power-Choice with market insight on current OTC contestable market

² We use correct terminology Over the Counter to represent the fact that although it is a 'market' contract, the market is not a publicly traded market and contract price details are not public, unlike the national electricity market.

prices. Based on pricing in early March, typical pricing for a 3-year contract was approximately 7¢/kWh for peak and 3¢/kWh for off peak for most customers, although individual customers varied.

5.1.4 SME dataset selection

The purpose of the analysis was to look at the average adverse impact on selected industries of the proposed change.

To achieve this, Power-Choice's database was reduced to customers who are within Energex's network area, and then reduced by those who are definitively known to be on the tariff market.

Customers currently considering the move to contestable market were removed leaving approximately 45 customers with known clean data- a statistically significant sample set given the total population size.

To gauge a statistically robust analysis, access to Energex's internal meter demand and usage database would be required. This is unfortunately unavailable outside of Government or Energex; however, indicative results can be drawn from Power-Choice's available datasets.

For those exact customers analysed, who are representative across a wide range of industries, the modelled results are accurate for comparative purposes.

5.1.5 Data publication

All customers' data has been made anonymous to protect privacy. Industry type and location information remains to allow for correct modelling of loss across networks and for impact analysis by industry type.

5.1.6 Analysis and Modelling

Each site's data was entered into Power-Choice's energy modelling system using standard modelling assumptions (see Appendix 2). The data was then reviewed by Power-Choice's engineering department, before final review and sign off by Power-Choice's qualified engineers.

The comparative results for the model of each site on the contestable market are based on 2011/12 pricing and they make no allowances for carbon tax or any other increases in costs.

The results are shown in Appendix 3.

5.1.7 Market price sensitivity analysis

Energy price fluctuates over time, and to compare a single price for each model at any one price would not allow for potential price variances.

To allow for an analysis of the models results, a market price sensitivity analysis was conducted at the 66%, 100% and 200% of relative model results at the quartile level of price variance across the sample set.

The results are included in Appendix 3, with a single sensitivity analysis and model example shown in Appendix 4.

This showed a relatively minor price variance in results based on large fluctuations in energy prices.

5.1.8 Awareness market research:

As part of the analysis, Power-Choice's internal market research team carried out an ad-hoc 'straw poll' survey of the customers in the sample set.

Approximately 80% of customers in the sample set were contacted.

Of all the customers surveyed:

- None were aware of the significant commercial changes proposed by the Queensland Government (outside of notification of Power-Choice).
- None were notified by the Government or Energex.
- None were aware or could quantify the potential impact on their business.
- None had conducted any preparations for their business.

5.2 Results and conclusions

5.2.1 Market readiness and capability

Based on our 'straw poll' market research the SME market are not aware and not prepared for the proposed changes.

There are proportionately many more smaller 'Large' market customers in Queensland than any other state in Australia. Without professional representation, these customers will be exposed to significant risks of commercial OTC contracts in a commercial and complex priced market.

SME organisations generally have fewer resources and less understanding of this complex market in addition to very limited consumer protection.

The current estimated deadline of implementation is less than 3 months. SME's have little or no time to prepare site works, restructure business operations, staffing levels and operation expenses to cope with this price impact.

The mandatory nature of the change, and the low levels of market understanding, will likely favour the commercial negotiating position of retailers, who in large welcome the proposed change.

In addition to this, will be the added stress and red-tape in obtaining site modifications, including negotiating costs with landlords, determining site changes, organising electrical quotes, and then implementing required changes. This would appear to these customers as additional red tape and unnecessary capital expenditure to allow for higher electricity prices.

To meet these proposed changes, in a brief period of time would leave many in disadvantageous fixed long-term supply contracts that would otherwise be the case.

Moreover, it is largely unknown who the affected customers will be.

Incumbent retailers will be able to pre-identify their customers affected, and will have considerable market advantage in addition to their information advantage.

As there is a low level of SME awareness and little is known about what impact the proposal will have, Government mandating could potentially allow retailers to present binding, non-competitive, commercially serious, contestable market contracts.

In addition, the short-term expiry dates on OTC contestable metering contract quotations can add pressure on non-informed customers entering long-term commercial contracts.

Due to the lack of understanding of customers, of the change and the added advantage of incumbent customer identification, the lack of public pricing in the OTC contestable electricity market contracts, SME's will likely be not able to operate in a fully competitive marketplace.

5.2.2 Surveyed pricing impact assessment

The model results show that the customer's modelled impact of annual cost of the proposed change ranged from negligible (<1.5%) to severe (>123%), with an average increase in electricity costs of 33.34%.

The results of this survey are limited to the customer sets available at the time of analysis. However, each of the customers modelled provides a very accurate representation of the impact of the proposed policy changes.

Only Government or Energex could provide the data that would provide for a broader impact study and provide all businesses currently on tariff, an accurate impact assessment that the policy change would have.

However, not all businesses will be negatively affected. Many businesses in specific industries have benefitted from the contestable market and are now paying less energy costs, however Power-Choice forecasts that the remaining businesses on the tariff market who are considered 'large' will have more of a negative impact on their electricity costs. Again these assertions are untestable without access to sampled data.

The market pricing sensitivity analysis shows that if energy costs decrease by a third or double, the negative impact remains for the sample businesses examined.

5.2.3 Industry type impact analysis

The analysis shows that customers who operate in particular industries, that use electricity with a high variance in consumption rates are likely to be worse off. For example, customers who use electricity in short bursts with relatively longer idle periods are also likely to be worse off.

Adverse policy impact:

Periodic electricity users: That is, users who use electricity in periodic manner.

- Schools are likely to be disadvantaged due to longer periods of lower usage and the short periods of high usage (higher Demand) due to lighting in school halls, for example.
- Community churches are likely to be disadvantaged due to the large usage of electricity on weekends followed by longer periods of inactivity during the week. Churches with youth orientated activities, for example, with modern stages, sound and lighting would be more disadvantaged.

Job lot and discrete processing electricity users



- Printing firms, manufacturers, engineering SME's or other job lot discrete processing based organisations are likely to be penalised due to higher Demand (caused by the number of machines operating on discrete jobs).
- Larger manufacturers and engineering firms are likely to be less penalised due to the effects of operating a larger number of machines consistently, which when combined does not cause Demand to increase in a linear manner.

From the analysis, it shows that SME's with lower Demand/Usage ratio would generally benefit in the contestable market.

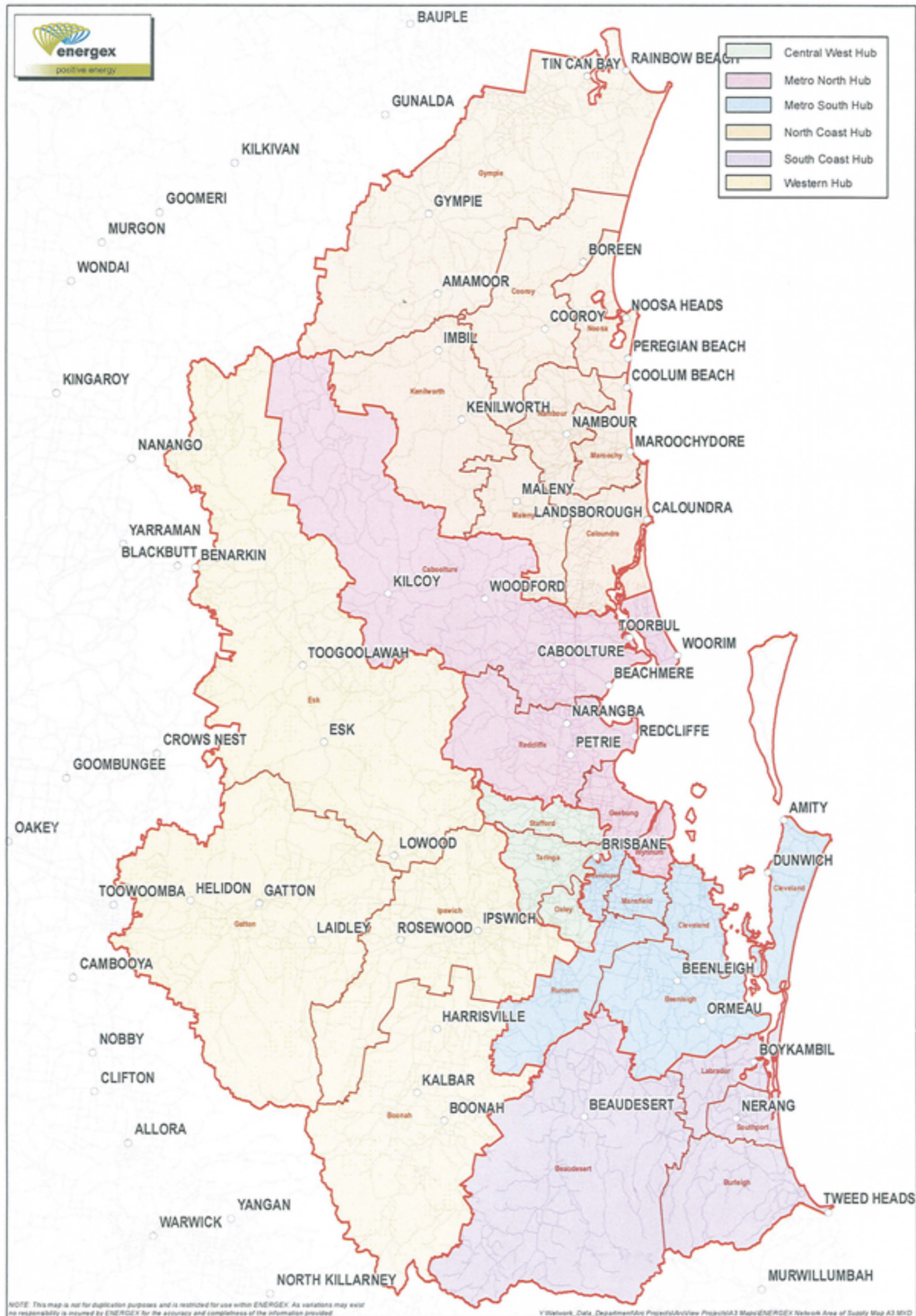
Without access to Energex databases, the proportion of consumers affected across the market is unable to be fully identified.

5.2 Appendix 1: Model assumptions

1. Contestable market contract rates of 7¢/kWh peak and 3¢/kWh for off peak. These were conservatively derived from pricing for 3-year contracts (most commonly chosen by customers) recently received by Power-Choice in the current market.
2. Model pricing includes GST.
3. Ancillary charges e.g. LRET, SRES, GEC and AEMO charges were modelled at a notional rate, as it was deemed that precision in these modelled figures, would not provide a statistically significant or material difference to overall price model outcome. I.e., The additional modelling effort of increased precision would not affect model predictive power.
4. No carbon tax pricing was included in the model.
5. Transmission and distribution Loss Factors were modelled on network location of customers according to published loss factors. Where precise network connection points were not readily available, loss factors in nearby areas were used.
6. Tariff pricing was based on customer's 2011/12 tariff pricing structures.
7. No allowance for the variances between peak and off peak hours (2 hours/day of additional peak M-F) was made when comparing tariff and contestable peak and off peak rates. The assumption is that the variance (9pm-11pm M-F) would likely be lower levels of consumption for SME's and not provide a material variance to the modelled outcome.
8. Energex network charges for contestable contracts were derived from Energex's published network charges rates for 'Large' market customers. Network tariffs used included SAC Demand 8100, 8200 and 8300.

http://www.energex.com.au/__data/assets/pdf_file/0011/42113/20110623-Tariff-Schedule-2011-12-V2-pm.pdf
9. Usage was based on actual 12 months of usage data for each customer where available. Demand was calculated as the average maximum demand over each of the 12 months of associated usage.

5.3 Appendix 2: Energex Region





Industry	Suburb	Current Tariff	Measured Average Monthly Demand	Annual Peak Usage	Annual Off Peak Usage	Current Annual Spend	New Annual Spend	Estimated EnergeX Charges	\$ Difference	% Difference
Engineering - Steel	Darra	T20 w/ dis	70	88,200	37,800	\$29,126.00	\$28,686.00	\$15,343.00	-\$440.00	-1.51%
Warehouse / Distribution	Larapinta	T20 w/ dis	140	162,113	87,291	\$57,448.00	\$57,750.00	\$33,066.00	\$302.00	0.53%
Cosmetic Manufacturers	West End	T20	81	7,715	33,306	\$28,510.82	\$29,054.00	\$16,809.00	\$543.18	1.91%
Recreational Facility	Woodford	MIXED	90	82,300	72,800	\$33,107.00	\$34,132.00	\$19,264.00	\$1,025.00	3.10%
School - Primary Catholic / Independent	Keperra	T20	95	79,828	42,984	\$31,518.00	\$32,542.00	\$19,364.00	\$1,024.00	3.25%
Marina	Tin Can Bay	T22	56	48,572	63,032	\$22,348.00	\$23,195.00	\$12,728.00	\$847.00	3.79%
Caravan Park	Lowood	T22	115	92,600	104,100	\$40,496.00	\$42,188.00	\$24,284.00	\$1,692.00	4.18%
School - Secondary Catholic / Independent	Riverview	T22 w/ dis	240	242,488	125,728	\$80,392.00	\$85,876.00	\$49,849.00	\$5,484.00	6.82%
Skating Rink	North Lakes	T20	150	95,357	95,357	\$48,839.00	\$52,264.00	\$33,598.00	\$3,425.00	7.01%
Manufacturers - Building	Molendinar	T20 w/ dis	90	77,229	63,187	\$30,607.00	\$32,808.00	\$18,936.00	\$2,201.00	7.19%
Restaurant	Albion	T22	85	68,170	58,200	\$27,895.00	\$30,443.00	\$17,806.00	\$2,548.00	9.13%
Manufacturers - Food	Molendinar	T22	70	54,800	59,100	\$23,875.00	\$26,196.00	\$15,074.00	\$2,321.00	9.72%
Sand Blasting & Powder Coating	Murrarie	T20	95	91,549	22,883	\$29,382.00	\$32,490.00	\$19,178.00	\$3,108.00	10.58%
Restaurant	Ashmore	T22	245	170,710	167,150	\$71,556.00	\$81,224.00	\$50,099.00	\$9,668.00	13.51%
Accommodation - Motel	Gympie	T22	75	53,800	57,700	\$23,395.00	\$26,867.00	\$15,839.00	\$3,472.00	14.84%
Bakery	Narangba	MIXED	113	82,038	97,122	\$34,327.00	\$40,024.05	\$23,564.00	\$5,697.05	16.60%
Manufacturers - Insulation	Darra	T20 w/ dis	84	93,388	18,583	\$25,896.00	\$30,416.00	\$17,322.00	\$4,520.00	17.45%
Church	Bowen Hills	T22	305	202,500	151,500	\$79,703.00	\$93,631.00	\$59,274.00	\$13,928.00	17.47%
Engineering - Automotive	Rocklea	MIXED	85	74,400	31,900	\$24,667.00	\$29,281.00	\$17,362.00	\$4,614.00	18.71%
School - Independent Community	Acacia Ridge	T22	126	102,720	62,350	\$39,053.00	\$46,984.00	\$29,616.00	\$7,931.00	20.31%
Manufacturers - Cabinet Making / Shopfitting	Beenleigh	T20 w/ dis	204	202,600	50,600	\$58,334.00	\$70,406.00	\$42,635.00	\$12,072.00	20.69%
School - Primary Catholic / Independent	Petrie	T20	162	110,625	59,567	\$43,604.00	\$53,587.00	\$35,047.00	\$9,983.00	22.89%
Engineering - Construction	Currumbin	T20	198	174,900	30,620	\$52,617.00	\$64,910.00	\$40,968.00	\$12,293.00	23.36%
Restaurant	Fortitude Valley	T22 w/ dis	122	105,220	90,780	\$38,639.00	\$48,516.00	\$29,525.00	\$9,877.00	25.56%
Manufacturers - Shelving / Cabinet Making	Banyo	T20 w/ dis	215	225,100	56,300	\$59,815.00	\$75,165.00	\$44,726.00	\$15,350.00	25.66%
School - Primary Catholic / Independent	Kenmore	T20 w/ dis	184	156,870	52,290	\$48,210.00	\$62,001.00	\$38,948.00	\$13,791.00	28.61%
Manufacturing - Plastic	Arundel	T20	150	124,100	31,000	\$39,767.00	\$51,269.00	\$33,020.00	\$11,502.00	28.92%
Retail - Automotive Sales + Service	MacGregor	T22	135	98,444	52,724	\$36,677.00	\$47,321.00	\$30,727.00	\$10,644.00	29.02%
Engineering - Engine Machining	Carole Park	T11	121	83,200	20,800	\$23,801.00	\$31,337.48	\$18,949.00	\$7,536.48	31.66%
Engineering - Laser, Cutting, CNC	Wacol	T20	121	97,200	24,300	\$31,183.00	\$42,984.00	\$28,166.00	\$11,801.00	37.84%
School - Independant Primary / Secondary	Park Ridge	T20 w/ dis	145	103,272	48,672	\$35,073.00	\$49,238.00	\$32,225.00	\$14,165.00	40.39%
Church	Bridgeman Downs	T22	264	128,552	134,659	\$54,948.00	\$77,323.00	\$51,709.00	\$22,375.00	40.72%
Car Wash	Chermside	T22 w/ dis	98	48,100	54,100	\$21,351.00	\$30,058.00	\$19,399.00	\$8,707.00	40.78%

5.4 Appendix 3: Data Set Results

School - Independant Primary / Secondary	Fig Tree Pocket	T20	125	89,280	29,760	\$30,556.00	\$43,103.00	\$28,720.00	\$12,547.00	41.06%
Retail - Sand, Soil, Gravel	Wooloongabba	T20	380	224,400	56,100	\$71,762.00	\$102,035.00	\$69,221.00	\$30,273.00	42.19%
Manufacturors - Rubber	Everton Hills	MIXED	130	127,600	31,900	\$33,555.00	\$48,465.00	\$30,121.00	\$14,910.00	44.43%
School - Primary Catholic / Independent	Corinda	T20	120	70,401	37,908	\$27,821.00	\$40,665.00	\$27,803.00	\$12,844.00	46.17%
Manufacturors - Shelving / Cabinet Making	Willawong	T20 w/ dis	120	95,400	23,800	\$27,571.00	\$42,603.00	\$27,982.00	\$15,032.00	54.52%
Retail - Automotive Sales + Service	Gympie	T20	139	51,100	41,810	\$23,893.00	\$41,815.00	\$30,375.00	\$17,922.00	75.01%
Engineering - Zinc Electroplating	Eagle Farm	MIXED	1,022	595,670	84,030	\$134,241.00	\$238,778.00	\$159,607.00	\$104,537.00	77.87%
School - Primary Catholic / Independent	Darra	T20 w/ dis	180	96,368	32,123	\$29,689.00	\$53,060.00	\$37,043.00	\$23,371.00	78.72%
Manufacturors - Coaches, Buses	Acacia Ridge	T20	440	153,600	38,400	\$49,167.00	\$101,637.00	\$75,886.00	\$52,470.00	106.72%
Laundry Service	Mermaid Waters	T37	125	139,200	34,800	\$23,600.00	\$49,167.00	\$29,613.00	\$25,567.00	108.33%
Manufacturors - Panels systems	Carole Park	T20	268	81,100	34,700	\$29,766.63	\$65,871.00	\$49,910.91	\$36,104.37	121.29%
Manufacturors - Crushers, Conveyors, Screens	Wacol	T20	360	118,500	29,600	\$37,969.00	\$84,840.00	\$64,098.00	\$46,871.00	123.45%
								AVERAGE	\$13,921.22	33.34%

Adverse Impact Survey of Proposed Forced Conversion from Tariff to Contestable Contracts.

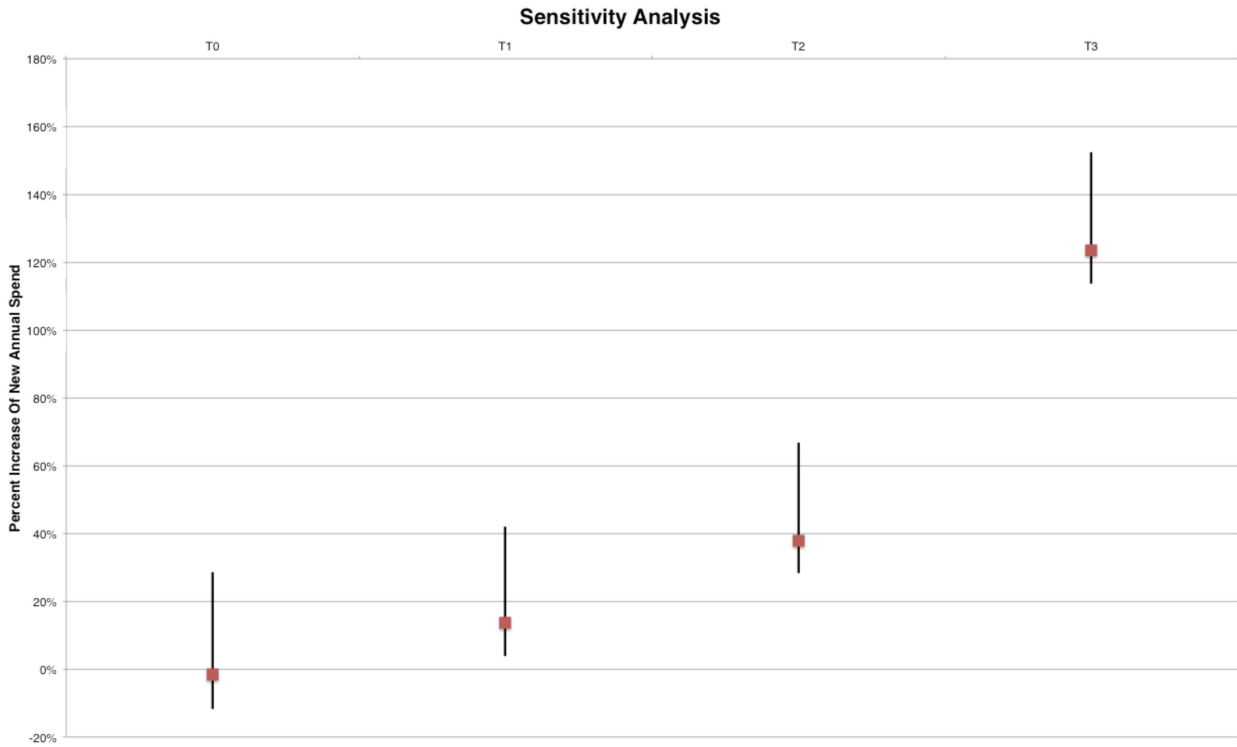
5.5 Appendix 4: Example Sensitivity Analysis Model

Industry	Suburb	Measured Average Monthly Demand	Annual Peak Usage	Annual Off Peak Usage	Current Annual Spend	66% of Modelled Contract Price	New Annual Spend	\$ Increase	% Increase	100% of Modelled Contract Price	New Annual Spend	\$ Increase	% Increase	200% of Modelled Contract Price	New Annual Spend	\$ Increase	% Increase
T0 Engineering - Steel	Darra	70	88,200	37,800	\$29,126.00		\$25,695	-\$3,431	-11.78%		\$28,686	-\$440	-1.51%		\$37,435	\$8,309	28.53%
T1 Restaurant	Ashmore	245	170,710	167,150	\$71,556.00		\$74,310	\$2,754	3.85%		\$81,224	\$9,668	13.51%		\$101,562	\$20,006	41.93%
T2 Engineering - Laser, Cutting, CNC	Wacol	121	97,200	24,300	\$31,183.00		\$39,976	\$8,793	28.20%		\$42,984	\$11,801	37.84%		\$52,006	\$20,823	66.78%
T3 Manufacturers - Crushers, Conveyors	Wacol	360	118,500	29,600	\$37,969.00		\$81,097	\$43,128	113.59%		\$84,840	\$46,871	123.45%		\$95,850	\$57,881	152.44%

Adverse Impact Survey of Proposed Forced Conversion from Tariff to Contestable Contracts.



5.6 Appendix 5: Example Sensitivity Analysis Model Graph



5.1 Appendix 5: Example basic Contestable Analysis

Plastic manufacturing business in Arundel, QLD			Current Tariff Market Pricing		Contestable Market Pricing	
Analysis prepared by						
Component	Quantity		Rate	Annual Cost	Rate	Annual Cost
Tariff / Network Charges					Including Losses	
Standing Charges	365				\$22.5200	\$8,219.80
Peak (c/kWh)	124,100	23.1900	\$28,778.79	1.4920	\$1,851.57	
Off Peak (c/kWh)	31,048	23.1900	\$7,200.03	1.4920	\$463.24	
Measured Annual Chargeable Demand	1,800			\$12.3780	\$22,280.40	
SubTotal				\$35,978.82		\$32,815.01
Energy					Including Losses	
Peak (c/hWh)	124,100				7.0000	\$9,458.23
Off Peak (c/kWh)	31,048				3.0000	\$1,014.13
Estimated Distribution Loss Factor	7.80%					
Estimated Transmission Loss Factor	1.00%					
SubTotal				\$0.00		\$10,472.37
Regulatory					Including Losses	
Estimated Gov. Environ. Charges (c/kWh)	155,148				0.6165	\$956.49
AEMO Charge (c/kWh)	155,148				0.3720	\$577.15
AEMO Ancillary (c/kWh)	155,148				0.0914	\$141.81
SubTotal				\$0.00		\$1,675.44
Metering and Other Charges						
Retailer Charge	365	\$0.4744	\$173.16			\$0.00
Smart Interval Meter						\$1,290.00
Total Metering and Misc Charges				\$173.16		\$1,290.00
Total Excluding GST				\$36,151.98		\$46,252.82
Total Including GST				\$39,767.18		\$50,878.10

Note(1): The Network cost are determined by Location, Network Provider and amount or estimate of chargeable demand. Demand rates vary by amount of demand. Network, Market & Other Charges are Passed-through costs. This calculation uses up to date rates (where available) or estimates. Actual Rates will be billed. Consumption and chargeable demand figures are based on historical or assumed levels; Actual consumption and actual chargeable demand will form the basis of actual costs.
 Note(3): Energy cost model is to be used exclusively to make comparison between current options and is not a forecast of future costs or market prices. This is not financial advice. The model only considers the energy cost and makes no allowance for changes in network, regulatory or other changes.