



Draft Report

**Review of Electricity Pricing and Tariff
Structures - Stage 2**

November 2009

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SUBMISSIONS

Public involvement is an important element of the decision-making and review processes of the Queensland Competition Authority (the Authority). The Authority is releasing this Draft Report as part of its Review of Electricity Pricing and Tariff Structures. This Draft Report sets out the Authority's provisional conclusions on the matters that are the subject of Stage 2 of the review. The Authority invites written comment on its Draft Report. The Authority will take account of all submissions received by the due date before providing its Final Report to the Premier and Treasurer by 30 November 2009.

Written submissions should be sent to the address below. While the Authority does not necessarily require submissions in any particular format, it would be appreciated if electronic copies are provided on disk or by e-mail. Submissions, comments or inquiries should be directed to:

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The closing date for submissions is **17 November 2009**.

Confidentiality

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While the Authority will endeavour to identify and protect material claimed as confidential as well as exempt documents (within the meaning of the *Freedom of Information (FOI) Act 1989*), it cannot guarantee that submissions will not be made publicly available. As stated in section 187 of the *Queensland Competition Authority Act 1997*, the Authority must take all reasonable steps to ensure the information is not disclosed without the person's consent, provided the Authority is satisfied that the person's belief is justified and that the disclosure of the information would not be in the public interest. Notwithstanding this, there is a possibility that the Authority may be required to reveal confidential information as a result of an FOI request.

Public access to submissions

Subject to any confidentiality constraints, submissions will be available for public inspection at the Brisbane office of the Authority, or on its website at www.qca.org.au. If you experience any difficulty gaining access to documents please contact the Authority on (07) 3222 0555.

Information about the role and current activities of the Authority, including copies of reports, papers and submissions can also be found on the Authority's website.

PREAMBLE

The Authority has been asked to review electricity pricing and tariff structures. This Draft Report is in respect of Stage 2 of its review.

Consistent with its conclusions on Stage 1, the Authority considers that current regulated tariffs are not structured to reflect the major costs of supplying electricity to customers.

The Authority considers that customers will be best served by a well functioning competitive electricity market. A key to achieving this in a sustainable way is to ensure that regulated prices reflect costs.

Key issues the Authority has identified are that:

- (a) the fixed and variable components of existing regulated retail tariffs often fail to reflect the fixed and variable costs of supply, inhibiting the development of a sustainable competitive market; and
- (b) the misalignment of regulated retail tariffs and network tariffs muddies price signals to customers and limits the capacity of distributors to effectively engage in demand management initiatives that could lead to lower costs for all consumers.

The Authority has proposed that, as a minimum, the existing tariff schedule be rationalised to remove obsolete tariffs, consolidate a number of tariffs and reset the fixed and variable components of notified prices for each remaining tariff to better match the true costs of supply.

However, the Authority would prefer this move towards greater cost reflectivity to be unconstrained by the existing set of tariffs so that other important changes can be made to provide a more focussed set of tariffs for customers built around the prevailing network tariff structure.

While tariff options are constrained by the available metering, the Authority has proposed some options to move towards greater access to time-of-use tariffs that could offer consumers able to adjust their consumption patterns opportunities to reduce their power costs.

Undoubtedly, there will be winners and losers in the process of change suggested by the Authority. Those who are currently paying prices above their true cost of supply or who are able to adjust their use of electricity to take advantage of new tariff options should benefit from the Authority's proposals. However, those who currently benefit from below-cost prices are likely to be worse off.

Providing transitional arrangements so that customers have time to adjust may ameliorate some of the adverse impacts. However, consideration of transitional issues is best left until the detail of any proposed changes has been clearly established.

Adverse effects on particularly vulnerable customers may be best addressed by specific support arrangements.

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1. INTRODUCTION

On 25 June 2009, the Premier and the Treasurer (the Ministers) directed the Authority to review electricity pricing and tariff structures in Queensland.

A copy of the Direction and a letter from the Minister for Mines and Energy is available from the Authority's website at www.qca.org.au.

1.1 Direction to review

Consistent with the requirements of the Direction, the review is being conducted in two stages, as follows:

Stage 1 (completed)

- (a) Part A: review the Benchmark Retail Cost Index (BRCI) methodology that currently exists in Queensland and alternative pricing methodologies that could be considered to reflect the costs of supplying electricity, including network costs and accounting for all State and Commonwealth Government environmental obligations.
- (b) Part B: review existing electricity tariff structures and assess whether current tariffs are fully cost reflective (for South East Queensland consumers), provide appropriate price signals to enable customers to understand and manage their consumption, or facilitate effective retail competition, and whether any tariffs are obsolete.

Stage 2 (to be completed by 30 November 2009)

Review alternative retail tariff structures which may assist in the long term management of peak demand and provide an incentive for customers to use electricity more efficiently.

The Authority released its Final Report on Stage 1 of the review on 8 September 2009.

1.2 Matters to be considered in Stage 2

Stage 2 of the review requires the Authority to examine alternative tariff structure options that:

- (a) support cost reflective tariffs; and
- (b) encourage more efficient use of electricity, including encouraging demand-side management.

In undertaking this review, the Authority is required to consider:

- (a) the level of tariffs necessary to promote competition for each customer class;
- (b) the impact of changing tariff structures on different classes of customers;
- (c) the merits/issues associated with the introduction of:
 - (i) inclining block tariffs;
 - (ii) peak demand or time-of-use pricing; and
 - (iii) additional interruptible tariffs suitable for demand-side management and

- (d) the timing issues associated with the implementation of any proposed changes to tariff structures and to recommend any transitional arrangements.

1.3 The review process to date

This Draft Report presents the Authority's provisional conclusions in respect of Stage 2 of the review.

In conducting this review, the Authority has taken into account the views and evidence presented in submissions from stakeholders and a report prepared by consultant McLennan Magasanik Associates (MMA), as well as its own research and analysis. To date, the Authority has:

- (a) released a Request for Comments Paper on 11 September 2009. A list of submissions received in response to it is provided in **Appendix 1**;
- (b) held meetings with some key stakeholders and been provided with quantitative and qualitative information from retailers and distributors; and
- (c) engaged MMA to assist the Authority in assessing the appropriateness of existing regulated retail tariff structures in Queensland. MMA's report can be accessed from the Authority's website.

The Authority invites written submissions on this Draft Report. The closing date for any such submissions is **17 November 2009**. Submissions received by the due date will be considered by the Authority in developing its Final Report, which is due by 30 November 2009.

2. ASSESSMENT OF EXISTING TARIFF STRUCTURES

2.1 Existing Tariffs

Existing regulated retail tariffs and Energex network tariffs are shown in Tables 1 and 2.

Table 1: Regulated retail tariffs

<i>Tariff</i>	<i>Title</i>
11	Domestic (lighting, power and continuous water heating)
20	General supply
21	General Supply (not to apply in conjunction with 20,22,62 or 63)
22	General Supply - Time-of-Use (not to apply in conjunction with 20, 21, 62 or 63)
31	Night Rate (Super Economy)
33	Controlled Supply (Economy)
37	Non-Domestic - Heating Time of Use (Obsolescent)
41	Low Voltage General Supply Demand
43	General Supply Demand (Time of Use)
53	High Voltage General Supply Demand (Time dependent)
62	Farm - Time-of-Use (not to apply in conjunction with 20, 21, 22 or 63)
63	Farm - Time-of-Use (obsolescent)
64	Irrigation - Time-of-Use (obsolescent)
65	Irrigation - Time-of-Use
66	Irrigation (Annual Fixed Charge)
67	Farm (Customers under rural subsidy scheme)
68	Irrigation pumping in Drought Declared Area
71	Public Lamps (Ergon area only)
81	Traffic Signals - Continuously Operating
91	Watchman Service Lighting

Source: *Queensland Government Gazette Vol 351 No 41, 9 June 2009.*

Table 2: Energex network tariffs

<i>Tariff</i>	<i>Title</i>
Demand metered customers	
8000	High voltage demand
8100	Large demand
8200	Medium demand
8300	Small demand
Non-demand metered customers	
8400	Domestic (Energy only)
8500	Business small
8600	Business medium
8700	Business small (Time of Use)
8800	Business medium (Time of Use)
9000	Controlled load 1
9100	Controlled load 2

Source: *Energex Limited Tariff Schedule 2009-10, Version 2A, July 2009.*

2.2 Findings from Stage 1 review

In Stage 1 of this review, the Authority made a number of preliminary findings relevant to this assessment of the alternative tariff structures.

Having regard to flaws identified in the current Benchmark Retail Cost Index (BRCI) methodology for escalating notified electricity prices and the history of retail electricity pricing prior to the introduction of full retail contestability in Queensland, the Authority concluded that the existing notified prices were unlikely to fully reflect the costs of supply, at least not for each individual tariff group.

The Authority found that the most commonly used tariffs were Tariffs 11, 20, 31 and 33. Other significant tariffs, in terms of the total level of consumption, included Tariffs 22, 41 and 43. There were also a further ten less significant tariffs, including four described variously as “farm” or “irrigation” tariffs, plus three “obsolete” tariffs closed to new customers (Tariffs 37, 63 and 64).

The Authority also found that, in part due to a lack of cost reflectivity, the existing regulated tariffs and their corresponding notified prices do not provide the appropriate price signals to electricity customers. However, the scope for change is somewhat constrained by the metering equipment currently used in Queensland.

The Authority noted that there is an important distinction between cost recovery and cost reflectivity. There are many potential outcomes that may achieve cost recovery, where the total costs of supplying energy to customers on regulated tariffs are met by the total revenues earned from the regulated tariffs. However, cost recovery could be achieved by averaging the costs of supply between different tariffs or between different classes of customers but it would then depend on cross-subsidies between different classes of customers. Cost reflectivity requires regulated tariffs to mirror the costs incurred by a retailer in supplying a customer on a particular regulated tariff.

Customers make decisions and manage their electricity consumption based on the information available to them. In Stage 1 of this review, the Authority found that the key to ensuring that customers receive adequate information and appropriate price signals is to achieve cost reflectivity, not just cost recovery.

The Authority noted that the timing of consumption is a key driver of costs. Energy consumed during peak periods is typically more expensive to produce than energy consumed during off-peak times. In addition, energy consumption in periods of maximum demand puts pressure on the capacity of the electricity network to meet that demand. Network providers are required to install additional capacity to meet the maximum peak period demand, which, in Queensland, typically occurs on hot days during the summer season. However, much of this network capacity is not utilised at other times. The gap between peak demand and off-peak demand leads to higher levels of costs for energy consumption at all times.

Essentially, the larger the gap, the more infrastructure is installed but under-utilised for most of the time. The cost of that dormant infrastructure raises the average cost of energy. Reducing the gap between peak levels and off-peak levels of demand may over time decrease the network cost component of supply.

The Authority concluded Stage 1 of this review by finding that the existing tariff structures are unlikely to reflect the costs of supplying customers on regulated tariffs, at least not for each individual tariff group, and do not provide good signals to customers regarding the costs of their electricity use.

2.3 Criteria for assessing the appropriateness of tariff structures

The Ministerial Direction requires that the Authority examine alternative tariff structure options that:

- (a) support cost reflective tariffs; and
- (b) encourage more efficient use of electricity, including by encouraging demand-side management.

In undertaking this task, the Authority is to consider the level of tariffs necessary to promote competition for each customer class and identify the impact of changing tariff structures on different classes of customers.

In Stage 1 of the review, the Authority noted that, at a minimum, cost reflective tariffs are required to promote effective retail competition and encourage efficient use of electricity.

Cost reflective tariffs provide each customer with appropriate pricing signals to reflect the underlying cost of supplying electricity to them. Tariff structures that provide correct signals when electricity costs more to supply (for example, during periods of peak network capacity) can encourage customers to make decisions that reduce the need for costly network capacity increases. Given the appropriate price signals, customers can then decide when and how much electricity to consume.

Demand management refers to actions that influence the quantity or patterns of energy usage by customers. Typically, this is achieved by shifting load away from, or curtailing load during, peak periods. Demand management does not necessarily decrease total energy consumption but would be expected to reduce the need for investments in networks.

Having regard to the issues in the Direction Notice and suggestions made in submissions, the relevant assessment criteria can be reduced to two:

- (a) do tariffs achieve cost reflectivity? and
- (b) are the tariffs simple and easy to understand?

Are the tariffs cost reflective?

As discussed in Stage 1, true cost reflectivity occurs when regulated tariffs mirror the costs incurred by a retailer in supplying a customer on a particular regulated tariff. Achieving full cost reflectivity entails the removal of cross-subsidies between customers and between groups of customers.

Applying cost reflective prices achieves several objectives of tariff reform, including cost recovery, promoting competition within customer classes and sending appropriate price signals for customers to manage their consumption. To the extent that these objectives are met, efficient use of electricity will be facilitated.

Cost recovery

The distinction between cost recovery and cost reflectivity is critical to the assessment of the existing individual regulated tariffs. While cost recovery and cost reflectivity may both occur simultaneously, the fact that costs are being fully recovered does not necessarily mean that prices are therefore cost reflective. Cost recovery is a necessary but not sufficient condition for cost reflectivity.

Promotion of competition

As noted in Stage 1 of this review, retail competition could potentially develop further in South East Queensland if notified prices were set at levels significantly higher than the underlying costs of supply. However, given that competition is unlikely to develop in many parts of regional Queensland, setting notified prices high relative to costs would penalise many customers who have no alternative but to pay the regulated price.

The Authority considers that, as a general rule, competition will be best served by tariff structures and notified prices that reflect the costs of consumption

Sending appropriate price signals

Similar to the above, the Authority found in Stage 1 of this review that better price signals (and better demand management) will flow from the achievement of cost reflectivity.

Are the tariffs simple and easy to understand?

Complex tariff structures may better reflect costs than do simple tariffs but they may also create confusion amongst customers and cloud the price signals to which it is hoped they will react. In contrast, simple tariff structures may promote greater achievement of the objectives outlined above by allowing customers to make easy decisions about their consumption.

More complex tariff structures which will provide more cost reflective information, such as the half-hourly time-of-use tariffs that would be possible with smart meters, need to be associated with measures which enable the customer to make easy decisions, such as through real time in home price displays.

2.4 Assessment of existing tariffs

In assessing the set of existing regulated tariffs against the criterion described above, the Authority has placed emphasis on the assessment of those tariffs identified as being the most commonly used or carrying the largest amounts of consumption, namely Tariffs 11, 31, 33, 20, 22, 41 and 43.

As noted in the Authority's Final Report of Stage 1, current regulated tariffs are not structured to mirror the major costs of supplying electricity. A number of factors supporting this view were raised in submissions.

Cost reflectivity of existing tariffs

One of the more significant factors contributing to the lack of cost reflectivity is that existing regulated tariffs are structured in a way that does not reflect the mix of fixed and variable costs of supply.

Several retailers noted that the fixed component of most of the existing regulated tariffs does not even meet the fixed network charges applicable to customers on Energex's network. This includes Tariff 11, the most common tariff covering residential customers. The extent of this difference is shown in Table 3.

Table 3: Fixed cost components of retail and network (Energex) tariffs

<i>Retail Tariff</i>	<i>Network Tariff</i>	<i>Difference between fixed retail and fixed network charges (\$/yr)</i>
11	8400 < 25 MWh p.a	-\$14
11	8600 > 25 MWh p.a	-\$328
20	8500 < 25 MWh p.a	\$50
20	8600 > 25 MWh p.a	-\$264
21	8500 < 25 MWh p.a	\$35
21	8600 > 25 MWh p.a	-\$279
22	8700 < 25 MWh p.a	\$222
22	8800 > 25 MWh p.a	-\$91
31	9000	\$6
33	9100	\$7
37	8500 < 25 MWh p.a	-\$41
37	8600 > 25 MWh p.a	-\$355
41	8300	-\$198
41	8200	-\$4,574
43	8100	-\$13,209
53	8000	-\$11,364
62	8700 < 25 MWh p.a	\$58
62	8800 > 25 MWh p.a	-\$256
63	8700 < 25 MWh p.a	\$182
63	8800 > 25 MWh p.a	-\$132
64	8500 < 25 MWh p.a	\$42
64	8600 > 25 MWh p.a	-\$272
65	8500 < 25 MWh p.a	\$58
65	8600 > 25 MWh p.a	-\$256
66	8300	-\$348
66	8200	-\$4,724
67	8500 < 25 MWh p.a	\$42
67	8600 > 25 MWh p.a	-\$272

Source: MMA, Review of Queensland Notified Electricity Retail Tariffs, Draft Report, Table 5.5.

There are some tariffs, such as Tariffs 20 and 22, where the fixed cost component meets the fixed network charge at some levels of consumption but not at others. This is because the network charge escalates according to the customer's consumption level while the fixed component of the retail tariff does not. In the case of Energex's network tariffs, there is a step up in fixed network charge for customers consuming more than 25 MWh per annum and therefore a different fixed network charge applies to most regulated retail tariff above this threshold, as illustrated in Table 3.

Even in cases where the fixed cost component does meet the fixed network charge, there is still a question as to whether it meets fixed costs in total once the retailers' fixed retail costs are included. There is no evidence that the fixed cost components of the various tariffs were designed to recover fixed costs.

This mismatch between the structure of regulated tariffs and the structure of network charges was identified by many stakeholders as a critical issue in terms of cost reflectivity and the price signals received by customers.

Some submissions also noted that some existing tariffs (most notably Tariffs 21, 31 and 33) include a minimum monthly payment rather than a fixed charge. While there are some similarities in the operation of minimum monthly payments and fixed charges, in that customers pay a certain amount even if their consumption is zero, a minimum monthly payment does not perform the same function as a fixed charge – once the minimum amount of consumption is achieved, there is in effect no fixed charge.

While none of the submissions received suggested that any of the existing tariffs were ideal in terms of achieving cost reflectivity, a number did identify which tariffs were closer to or further from this goal. In general, it was suggested that declining block tariffs (such as Tariff 21) were the least cost reflective and time-of-use tariffs (such as Tariff 22) were the most cost reflective. Opinions differed on the use of inclining block tariffs – most submissions that were against their use noted that they do not appropriately reflect the costs of supply, while those submissions favouring their use focused on benefits other than cost reflectivity.

Cross-subsidies in existing tariffs

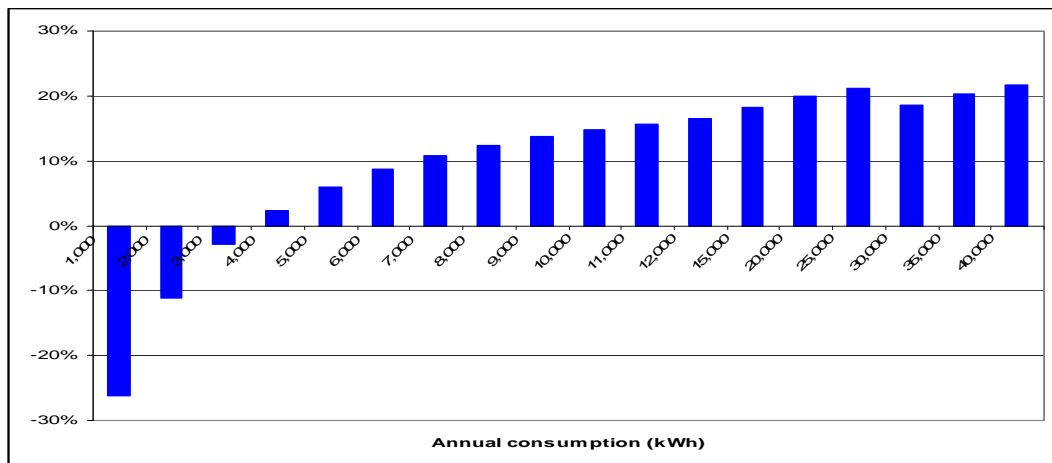
The existence of cross-subsidies between tariff classes or between customers within a particular tariff class will detract from the cost reflectivity of the various tariffs. Cross-subsidies exist where notified prices for one group of customers are set above cost while those for another group are below cost. In this way, the costs of supplying electricity to one group of customers are recovered (in part) from another group. Cross-subsidies are sometimes implemented deliberately as a tool to meet social objectives, such as providing access to an initial low level of electricity consumption at less than cost in order to subsidise the minimum requirements of disadvantaged groups of consumers while requiring those consuming larger amounts of electricity to pay slightly higher prices on the assumption that these customers will be generally more well off. In effect, this is a form of income redistribution. Cross-subsidies may also be unintentional.

Regardless of intention, cross-subsidies may restrict competition in the marketplace (particularly for those consumers paying less than their cost of supply) and act as a barrier to entry for second tier retailers seeking to build market share in tariff classes where there are substantial cross-subsidies between customers or increase the risks faced by incumbent retailers relying on more profitable tariff classes to recover low returns from less profitable tariff classes.

This issue was raised in a number of submissions, which noted by way of example that the fixed cost component of most retail tariffs did not reflect the associated fixed network charge.

Figure 1 shows the retail margin available to retailers from customers on Tariff 11 as consumption increases. MMA found that revenue from Tariff 11 customers using less than 5 MWh per annum will generate margins of less than 5% for the retailer with retail margins rising rapidly thereafter. However, with average annual Tariff 11 consumption at approximately 5.19 MWh, significant numbers of customers will be consuming at levels below the cost recovery threshold between 4 and 5 MWh per annum.

Figure 1: Retail Margin for Tariff 11 at various annual consumption levels



Source: MMA, Review of Queensland Notified Electricity Retail Tariffs, Draft Report, Figure 5.1

This implies that, within the Tariff 11 customer group, there are cross subsidies between customers on low levels of consumption and those on higher levels of consumption (although it should be noted that very few residential customers would consume more than 10 MWh per annum).

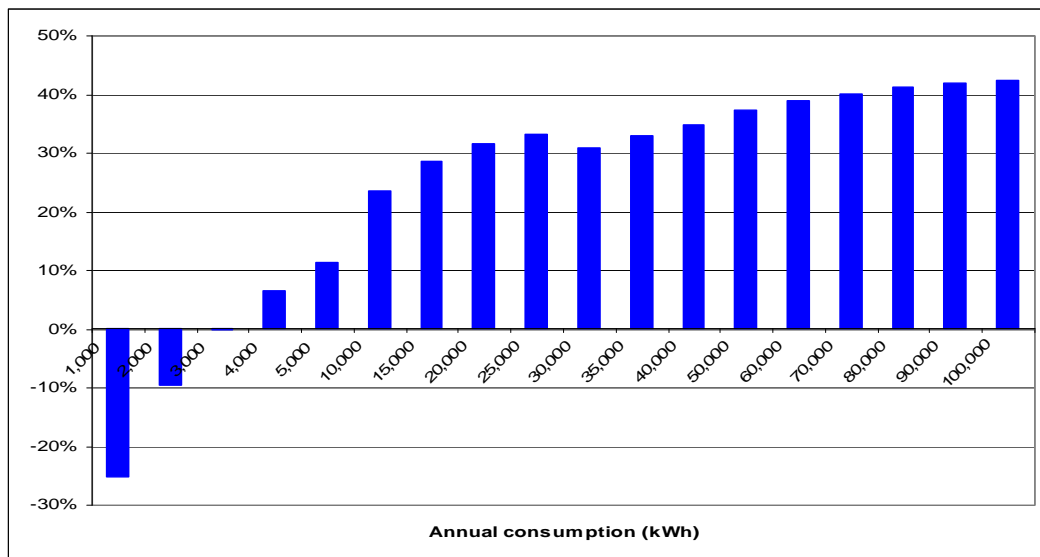
MMA’s analysis suggested that 52% of residential customers in South East Queensland use less than 5 MWh per annum and would not be attractive for competing retailers. However, MMA estimated that the weighted average margin was approximately 6.6%, showing that the tariff recovers costs in aggregate even though it is not cost reflective at the individual customer level.

Figure 1 also shows the step up in network costs that occurs at the 25 MWh per annum consumption level. This reduces retail margins because the retail tariff does not include a similar step. Hence, retailers are unable to pass on the increased fixed costs to customers on the notified prices consuming more than 25MWh per annum and incurring the higher fixed network charge. As a result, retailers must rely on the variable retail cost component to recover the increased network costs.

Figure 2 shows the corresponding analysis by MMA for small business customers on Tariff 20. Customers on Tariff 20 with annual consumption greater than about 4 MWh meet their supply costs and provide returns to retailers which are much higher than 5%. With the average annual Tariff 20 consumption at approximately 20.61 MWh, retailers are potentially generating margins of over 30% under Tariff 20 notified prices. As with Tariff 11, the step change effect on retail margin resulting from a change in network tariff structure is also evident for Tariff 20 at between 25 MWh and 30 MWh per annum consumption.

This analysis shows that small to medium business customers on Tariff 20 are likely to be a more a profitable class of customers to retailers than Tariff 11 residential customers. While this profitability may result in increased retail competition for business customers, it is equally likely that retailers would be relying on retail margins from these customers to recover costs of other less profitable Tariff 11 residential customers.

Figure 2: Retail Margin for Tariff 20 at various annual consumption levels



Source: MMA, Review of Queensland Notified Electricity Retail Tariffs, Draft Report, Figure 5.3

In its report, MMA has analysed retail margin variations with annual consumption for all existing tariffs. MMA concluded that the majority of tariffs are not cost reflective with the lack of cost reflectivity varying substantially across the existing tariffs. According to MMA’s

analysis, Tariff 22 appears to be the most cost-reflective while Tariff 66 appears to be the least cost-reflective. MMA also concluded that there are considerable cross-subsidies between tariffs (customer types) and within tariffs (between customers with different consumption levels and profiles).

Why do the cross-subsidies exist?

There appear to be two reasons for current cross-subsidisation within existing tariffs. The first is that current notified prices tend to be weighted towards higher variable charges with very small fixed charge components as discussed in the previous section.

The second reason relates to the process of load profiling under current accumulation metering technology. The Net System Load Profiles (NSLP) of each distribution region is currently used by the Australian Energy Market Operator (AEMO) in the National Electricity Market (NEM) wholesale market to bill retailers for the consumption attributable to their customers on accumulation meters.

The use of the NSLP results in the averaging of the contributions of individual customers to the time-related costs. In essence, all customers in each of the distribution areas are assumed to have the same load profile regardless of their actual individual load profiles or the actual load profile of each retailer's share of customers. This averaging cannot be removed without meters that measure the actual time of use by individual customers, as is presently the case for large customers (those consuming more than 100 MWh per annum) who have interval meters.

The cross-subsidisation among customers with accumulation meters that results from the use of NSLP can be explained as follows:

- (a) those customers using most electricity at peak times drive the need for capacity to meet peak demand – both network capacity and generation capacity;
- (b) the cost of providing peak network capacity is reflected in the price retailers pay to networks in the form of higher overall network use of system charges, without any reflection of which customers are driving the costs;
- (c) the cost of providing peak generation capacity is reflected in the price retailers pay in the spot market and for hedging contracts. Again the price paid does not reflect which customers are driving the costs because the NSLPs are used for settlement; and
- (d) retailers pass peak wholesale energy costs, both generation and network, on to all customers in the form of higher per-unit prices, rather than passing them on specifically to those customers driving the costs.

Cost recovery of existing tariffs

This lack of cost reflectivity in the existing tariffs means that retailers do not recover their costs in a manner that mirrors the makeup of those costs. However, this does not automatically lead to the conclusion that retailers are currently failing to recover their costs in an overall sense.

The current regulated tariffs are structured in a way that causes the costs of supplying customers to be averaged, between different tariffs and between different customers on the same tariff. Whether a retailer will achieve cost recovery with respect to its (non-market) customers overall depends on factors such as the consumption levels of its individual customers, the tariffs under which those customers are supplied and, in some cases, the timing of the customers' consumption.

Even if those factors are sufficiently balanced, the level of cost recovery is likely to vary between retailers depending on their business structure and operating costs. For instance, a large, incumbent or vertically integrated retailer is likely to face markedly different costs to serve its customers than a small, new entrant. Furthermore, some fixed operating costs, such as the costs associated with operating a call centre, may be significantly higher on a per customer basis for a retailer with a small customer base.

No retailer provided evidence of the level of profit or loss made with respect to their customers on a single tariff. However, many retailers suggested that, for most individual tariffs, there would be cost recovery with respect to some customers and not with respect to others, depending on the consumption level of the relevant customers. A number of retailers went further by suggesting that some regulated tariffs may not be recovering the costs of supplying any customers on that tariff.

MMA estimated retail margins for each of the regulated tariffs covering more than 0.5% of total annual consumption. MMA noted that profitability generally increases with consumption but that the profitability of the individual tariffs is difficult to determine without the knowing the actual annual consumption profile associated with the tariff. MMA's analysis suggests that some tariffs are likely to be more profitable than others, but more detailed information would be required to estimate the extent of these differences.

Most retailers agreed with the Authority's finding in its Final Report on Stage 1, that cost recovery will be best achieved by first ensuring true cost reflectivity of prices. To the extent that notified prices imitate the cost drivers of supplying non-market customers, by recognising fixed and variable costs and where possible by accounting for cost drivers such as the time of consumption, cost recovery will then merely depend on a retailer's own structure of operating costs and other factors within the retailer's control.

Promoting competition across classes of customers

As noted in Stage 1 of this review, there is a relationship between the achievement of cost reflectivity in notified prices and the promotion of competition.

Regulated tariffs essentially provide a safety net for electricity customers. Those who prefer not to enter into a market contract or who live in areas where competition is weak or non-existent, rely on the regulated tariffs to provide them with an option for obtaining an essential service.

In those jurisdictions where there is active competition throughout the state or territory, it would be feasible to make the gap between cost reflective tariffs and regulated tariffs quite large as all electricity customers would have access to an alternative market contract at a competitive price. As retailers compete for customers the market prices available to customers would eventually reflect the costs of supply (including a normal return).

Retail competition in South East Queensland could be promoted if notified prices were set significantly higher than the underlying costs of supply, creating a strong incentive for those customers remaining on notified prices to switch to market contracts at a substantial cost saving. However, competition in Queensland is not uniform and, in much of the State, there is no alternative for customers other than to access electricity supply at the notified price. Thus, (unless there were different notified prices set in the competitive south-east corner of the State and the remainder of the State) setting above-cost notified prices would penalise many customers who have no alternative to the regulated tariffs. While ever uniform notified prices are to apply across the State, these need to be set with an eye not only to promoting competition where it is viable but also to providing a fair price for those unable to choose a market based alternative.

In general, submissions did not identify the extent to which competition is more or less viable for specific classes of customers, other than to note that customers with higher consumption levels were more likely to provide revenue that would allow a retailer to recover its costs. The majority of stakeholders suggested that many regulated tariffs do not fully recover the cost of supply, particularly network charges. As a result, competition is unlikely to be promoted as retailers have little incentive to offer market prices below the notified prices to customers.

The Authority considers that, as a general rule, competition will be best served by tariff structures and notified prices which allow costs to be allocated in a way that reflects the costs of consumption. The continuation of subsidies that exist between different classes of customers is unlikely to promote increased levels of competition, particularly for those customers who are being subsidised. Cherry picking those customers who are more profitable (for the retailer) due to being on more cost reflective tariffs or consuming larger volumes, will reduce the extent of available cross subsidy for retailers to balance their overall costs of supply of remaining customers on notified prices. Achieving better cost reflectivity in notified prices will drive the development of sustainable competition across all classes of customers.

Simplicity and ease of understanding

The existing suite of regulated tariffs comprises 20 different tariffs. Three of these are 'obsolete', in the sense that they are closed to new customers. A further three are designed solely for street lights, traffic signals and other public lighting. Two of the obsolete tariffs, and a further five other tariffs, are described variously as for 'farm' or 'irrigation' purposes. There are also a number of other tariffs that are designed for customers with specific voltage requirements or which have fee structures that are cost prohibitive for all but the largest of business customers.

From the perspective of a small residential customer, there is really only one relevant tariff for general use (Tariff 11), with a choice of two further interruptible tariffs for specific hard-wired appliances such as hot water systems (Tariffs 31 and 33). Since Tariff 11 is restricted to domestic use, small business customers are generally supplied on Tariffs 20, 21 or 22, being the next cheapest set of tariffs for customers without specific business needs. A small number of domestic customers whose premises are attached to a business are also supplied on Tariffs 20, 21 and 22.

For each individual customer, the existing suite of regulated tariffs is fairly simple and easy to understand. The simplicity of the tariff schedule for domestic customers is reinforced by the fact that Tariff 11 is a flat rate tariff, which is the simplest type of charge to understand. The only complicating factor for these customers is the choice between "off-peak" Tariffs 31 or 33 to complement their general supply under Tariff 11.

However, the existence of obsolete tariffs, closed to new customers and seven different tariffs intended for specific farm and irrigation purposes unnecessarily complicates the overall tariff schedule. While the majority of these farm and irrigation tariffs have a beneficial time-of-use structure, the time periods vary between the tariffs and some combine this structure with inclining or declining block pricing. Given the changing purpose of the tariff schedule from being the only available options pre-FRC to providing the safety net tariff arrangements post-FRC, there is a strong argument for providing a single generic farm tariff and allowing the relevant parties to agree to other commercially sensible arrangement in market contracts.

As the Authority noted in its Stage 1 report, the continued availability of regulated tariffs designed for large (business) customers in the post-FRC environment is difficult to justify, as most customers with specific voltage requirements are likely to be business customers, as opposed to domestic customers, and capable of negotiating supply under a market contract. Similarly, most customers who operate public lamps and traffic signals should be well able to

manage in the competitive market without requiring the existence of a notified price safety net. However, in both cases some further consideration would be required for those operating outside the Energex network area where competition and the availability of market contract offers may be limited even for these customers.

2.5 The Authority's view

Consistent with its conclusions on Stage 1 of this review, the Authority considers that the current regulated tariffs are not structured to reflect the major costs of supplying electricity to customers and are almost certainly not cost reflective.

In addition to the reasons outlined in the Stage 1 Final Report, such as the flaws in the BRCI pricing methodology and the history of electricity pricing in Queensland, stakeholders have pointed to a number of further factors contributing to this conclusion. These include a lack of fixed cost recovery from the fixed charges in retail tariffs, misalignment of retail and network tariffs and some existing tariff structures that provide perverse pricing signals.

The Authority considers that a particular flaw in a number of the existing tariffs is that the fixed and variable costs of supplying electricity are not appropriately reflected in the fixed and variable components of the notified prices. This inevitably leads to some customers paying too little and others too much.

As a starting point for reform, all regulated tariffs should include fixed and variable components that reflect the structure of the costs faced by retailers. The available evidence suggests that the fixed component of the majority of tariffs do not match the fixed costs incurred by retailers as they fail to even meet the fixed network costs imposed in the Energex area.

The Authority also considers that the operation of those tariffs with minimum monthly charges, such as Tariffs 21, 31 and 33 should be amended so that the minimum monthly charges are replaced by fixed and variable charge components that better reflect the fixed and variable costs faced by retailers supplying customers on those tariffs.

The Authority is mindful that meeting this objective may impact adversely on low consumption customers who will potentially face higher fixed charges (and hence total electricity costs) and that this may affect their capacity to pay their electricity bills.

However, issues associated with vulnerable customers are better addressed via specific support arrangements than by creating distortions in the electricity tariff structure or pricing regime. This view was supported by a number of stakeholders including AGL, Origin Energy, EnergyAustralia, and the Queensland Consumers Association.

The Authority considers that all customers will be best served by a well functioning competitive electricity market. The key to achieving this in a sustainable way is to ensure that prices reflect cost and the manner in which those costs are incurred.

3. ALTERNATIVE TARIFF STRUCTURES TO ENCOURAGE EFFICIENT USE OF ELECTRICITY

The review requires the Authority to examine options for alternative tariff structures that support cost reflective tariffs and can encourage more efficient use of electricity, particularly demand management. In doing so, the Authority has been asked to consider at least the merits/issues associated with the following types of tariff structures:

- (a) inclining block tariffs;
- (b) peak demand or time-of-use pricing; and
- (c) additional interruptible tariffs suitable for demand-side management.

In the previous chapter, the Authority established a set of criteria to assess the appropriateness of tariff structures. In general, the determination of an appropriate tariff structure requires a balance between:

- (a) ensuring that customers face cost reflective tariffs; and
- (b) simplicity, in terms of maintaining a set of regulated tariffs that can be understood easily by consumers.

However, the ability to introduce cost reflective tariff structures that send appropriate pricing signals to encourage energy efficiency and demand management is limited by the availability of metering technology. The following section discusses various alternative tariff structures that could be implemented depending on the metering technology available.

3.1 Options for alternative tariff structures with accumulation metering

The majority of residential customers and many small business customers have accumulation meters. Accumulation meters can record total energy consumption over time but are unable to record any information about how much energy is consumed at any particular time.

Flat tariffs

Under flat tariff structures (such as Tariff 11), customers face a fixed supply charge and a flat consumption rate irrespective of the time of use.

Ideally, the fixed supply charge will recover fixed costs such as fixed network charges and fixed retail costs while the flat consumption rate will recover (average) variable costs such as energy costs and consumption based network charges across all time periods. However, where fixed costs are likely to be high, some part of the fixed costs of supply may also be recovered through the consumption charge. Under a flat tariff structure, customers contribute to the cost of supply in proportion to their energy consumption irrespective of their actual underlying cost of supply.

While simple to understand, flat tariffs convey limited information to customers about the total costs of consumption and are not cost reflective as there is no recognition of factors other than the volume of consumption that will affect a customer's cost of supply.

For example, some customers, particularly residential customers, place a greater cost burden on the supply system than is reflected in their total energy consumption, due to their generally high usage during peak demand periods.

As a result, the averaged prices paid under a flat tariff structure create efficiency problems, as noted by MMA:

- (a) increasing usage during peak periods incurs incremental costs, particularly in relation to network capacity, but this is not reflected in the flat consumption rate;
- (b) if the fixed charge under-recovers fixed costs, the consumption rate will need to be set above the average variable costs attributable to the relevant customer group. Those who use less electricity will therefore pay less than their true costs and will be subsidised by those who use more; and
- (c) since costs vary across time, the actual cost of serving some customers will be higher than the cost of serving other customers in the same tariff class as customers will differ in terms of their portion of electricity usage during high cost time periods.

While these features are likely to result in cross-subsidies between customers with different usage profiles, MMA also noted that the simplicity of flat rates has some attraction as they are easy to understand.

As noted in Stage 1 of the review, currently the two most significant regulated tariffs for small customers (Tariff 11 and Tariff 20) have a flat tariff structure. A number of other less significant tariffs (41, 66, 67 and 68) also have this structure.

Inclining block tariffs

Inclining block tariff (IBT) structures are designed to encourage customers to conserve electricity by incorporating a fixed supply charge and a series of consumption blocks priced at successively higher prices. IBTs raise the cost of incremental consumption for higher volume customers and in doing so provide an incentive for these customers to reduce marginal consumption.

MMA noted that IBT structures have often been seen as a means of signalling the cost of supply of electricity, particularly capacity related costs, as well as a tool to reconcile the objectives of cost recovery and efficiency on the one hand and equity and distributional aims on the other.

However, if the customer is not price sensitive, the responsiveness of high volume electricity users to these price signals may be limited.

IBT structures are often used to provide a cross-subsidy from large consumers to small consumers, by setting the price for the initial block of consumption below the cost of supply, based on the assumption that those customers consuming small volumes of electricity are also likely to be low income households. However, as MMA observed, that assumption does not hold universally given differences in household size and the limited ability of those living in rented dwellings to substitute other energy consumption for electricity or engage in certain energy efficiency options.

While IBTs can be constructed to send a broad signal to high volume users to reduce demand at any time, they do not target reduction in peak demand. Although the introduction of an IBT may result in some reduction in peak demand, they are likely to be less pronounced than if there were differentiation between peak and off-peak pricing. As for flat tariffs, this lack of cost-reflectivity provides no incentive to change consumption levels across the day and may lead to the cross-subsidisation of those consumers (small or large) who use electricity intensively in peak periods by those with less intensive peak period use.

There are currently no regulated tariffs in Queensland with an IBT structure. However, several retailers, including AGL, Origin, EnergyAustralia, Jackgreen and Integral Energy, suggested that, given the accumulation metering limitations on introducing time-of-use pricing, it may be

preferable to introduce IBTs to provide a more efficient pricing signal to customers on existing flat rate and declining block regulated tariff structures.

AGL further noted that, in the event that Energex introduced IBTs for residential customers in the future, it will be important to ensure that the residential retail tariff is aligned with the applicable inclining block network tariff to allow the direct pass through of network charges. In contrast to Energex's stated interest in introducing some IBTs, Ergon Energy did not support the introducing IBTs as it was of the view that they were inappropriate from a demand management perspective.

Declining block tariffs

A declining block tariff (DBT) structure includes a fixed supply charge and a series of consumption blocks priced at successively lower prices. Hence in contrast to IBTs, the DBT structure reduces the cost of incremental consumption for higher volume customers, tending to encourage greater consumption rather than less. If the initial or lower consumption blocks are priced above the cost of supply (so that costs are recovered on average) then there will be a cross-subsidy from smaller consumers to larger consumers.

A DBT would normally be employed where the particular pattern or volume of consumption meant that the costs of supply were actually declining with higher levels of consumption and hence there would not necessarily be any cross-subsidy involved.

MMA also noted that DBT structures can be more economically efficient than a flat rate tariff where the fixed charge under-recovers fixed costs. This is because the DBT can allow for the recovery of the fixed cost components in the fixed supply charge and initial block, while the subsequent blocks can be priced at rates that reflect the variable costs of supply. This means that DBTs can be more cost-reflective and reduce the level of cross-subsidies between small and large electricity users.

Since price signals from a DBT are invariant of time of use, a DBT structure is as likely to result in increased load during peak periods, causing capacity issues for the network system, as it is to contribute to increased consumption during off-peaks, when network capacity is idle. The reducing price structure therefore lowers the incentive for demand management and is likely to give the wrong network price signal to large volume users.

There are currently three regulated tariffs in Queensland that have a DBT structure (Tariffs 21, 62 and 63).

Several submissions suggested that existing tariffs with a DBT structure should be removed or replaced with an IBT structure.

DBTs and IBTs can both have a legitimate role to play in passing through appropriate economic signals to customers. This is more likely the case where they can be combined with differential off-peak and on-peak pricing. A DBT that applied during periods of low peak demand and encouraged greater consumption at these times in place of alternative consumption during peak periods could do much to help minimise the gap between the peaks and troughs of demand. Similarly, an IBT that applied during periods of high demand and also encouraged consumption to be reduced during these high demand periods in favour of alternative consumption during periods of low demand would likewise contribute to a positive reduction in the gap between high and low demand. However, on their own, neither would appear to offer much in the way of useful price signalling to customers or for demand management on networks.

Seasonal tariffs

A seasonal tariff applies different energy consumption charges during different parts of the year and can be set to more accurately track the cost of supply and of providing electricity than a single flat rate tariff or inclining or declining block tariffs.

Network usage can be characterised according to summer and winter peak periods. A seasonal tariff structure is primarily designed to provide customers with incentives to use electricity more efficiently during seasons when prices are higher, such as summer, and thereby contribute to a reduction in (maximum) demand.

Seasonal tariffs can be designed in various ways. MMA noted that, while seasonal prices vary by season, they are fixed across the relevant season and known by customers in advance. Nevertheless, seasonal tariffs may not be easily understood by customers and could cause some confusion when they see their bills fluctuating every few months regardless of consumption.

While a seasonal tariff structure could be implemented with the available accumulation meters, there would be little merit in introducing seasonal tariffs at this time as there is no corresponding seasonal network tariff structure.

3.2 Options for alternative structures under smarter metering technology

Time-of-use tariff structures allow for electricity price variations across different times of the day or week, reflecting differences in the underlying costs of providing electricity during these times. Price levels are generally preset for predetermined intervals to reflect expected cost conditions. In this way, customers are provided with some certainty regarding pricing. By allowing such price variation, customers can be provided with incentives to shift load away from highly priced peak periods to times when prices are lower.

By applying different energy consumption charges during different periods, time-of-use tariffs will better reflect the actual cost of supply and recover the actual costs of providing electricity more fairly and accurately than other tariff options.

Time-of-use tariffs also offer greater demand management opportunities than other tariff structures, particularly for customers who can shift load from peak period to off-peak period. As higher prices can be set during peak demand periods, time-of-use tariffs are able to provide price signals for efficient use of energy in peak periods. However, as MMA noted, because the wholesale cost of energy varies in half hour increments in the NEM, there are likely to still be cross-subsidies present if prices are fixed in time in the tariffs. The only way to eliminate this cross-subsidy would be to charge customers real-time wholesale energy prices for the electricity they consume within the energy portion of their bills which would require true smart meters with in-home display to be available not just interval meters.

Currently there are number of tariffs that have a time-of-use element. Tariffs 22, 37, 43, 53, 62, 63, 64 and 65 include peak and off-peak rates providing customers with the option to decide when they wish to consume. However, these tariffs are not widely available. Tariffs 22, 37, 43 and 53 are mainly applicable to small to medium businesses while Tariffs 62, 63, 64 and 65 are available for farming and irrigation customers. Energex currently applies a time-of-use network charge to these customers that correspond to the retail tariff structure.

With the wider availability of interval (or smart) meters, customers who can shift their consumption from peak periods to off-peak periods, and who are sensitive to price, are likely to benefit most from a time-of-use pricing structure.

3.3 Options for alternative structures under incentive-based tariffs

Incentive-based tariffs are generally directed towards demand management on the networks and refer to those tariffs that involve the customer providing the distributor with the capacity to either:

- (a) disrupt the electricity supply on a regular on-going basis;
- (b) disrupt electricity supply on an ad-hoc basis when the network is operating at critical capacity; or
- (c) control the electricity flow to, and consequently the performance of, particular electrical appliances.

Interruptible supply tariffs

In contrast to other tariff structures that rely on pricing signals to encourage efficient use of electricity by the customer, interruptible tariffs rely on customers allowing the distributor to take responsibility for managing part of their consumption. A key feature of an interruptible tariff is that the appliance under the control of the distributor (such as a hot water system or pool pump) must be “hard wired” and separately metered. Hardwiring of appliances ensures that the customer cannot make supply available (to that appliance) under a different tariff when the distributor interrupts supply during a peak demand period.

Currently, Tariffs 31 and 33 are the only interruptible supply tariffs available and hardwiring of appliances is a mandatory condition. Both these tariffs are complements to the general supply of electricity for residential customers (Tariff 11) and are supplied at a discount to the general supply rate.

Both Energex and Ergon Energy noted that there are a considerable number of customers connected to interruptible supply tariffs for electrical hot water systems enabling both distributors to manage a significant amount of electricity for hot water purposes. Energex has approximately 450MW of interruptible hot water load under control during winter peaks and up to 100MW during summer peaks while Ergon Energy has approximately 670MW of connected load under control.

Both distributors also highlighted the potential to expand interruptible loads to other household appliances such as swimming pool pumps and alternative technology water heating such as heat pumps and mains-boost solar.

Direct load control devices

In contrast to interruptible loads, direct load control involves the customer providing the distributor the capacity to directly control the functioning, and thereby the electricity requirements, of a particular appliance while minimising the perceived performance impact on the appliance. Direct load control therefore does not necessarily require a unique tariff structure to be implemented.

The most notable use of load controlling is with air-conditioners under Energex’s Cool Change trial where the distributor remotely controls the intermittent cycling of the air-conditioning unit at peak times, without impacting on customer comfort or convenience.

Energex noted it has recently commenced a trial program of load controlling for pool pumps using new generation audio-frequency load control technology – which it suggests would overcome issues associated with hardwiring and separate metering as required by interruptible tariffs such as Tariff 31 and 33.

As noted by MMA, interruptible tariffs and uptake of direct load control devices are network driven initiatives to deal with capacity constraints on the network and are not under the control of retailers. As such, innovations at the network level for interruptible and direct load control tariffs should be the driver for reform or expansion of these tariffs. The retailer has no way of incorporating the supply interruptions into its wholesale purchasing strategy, nor does it benefit from the disruptions given it is required to settle its wholesale energy purchases with the NSLP.

It is therefore important that:

- (a) retailers are not adversely impacted by the use of interruptible or direct load control devices. In particular, retailers should not be subsidising the tariff arrangement between the customer and the network business;
- (b) retail tariffs complement, or at least do not inhibit, the up-take of interruptible tariffs or direct load control devices provided by network businesses;
- (c) the network business takes the responsibility for providing incentives to customers to trial direct control load devices; and
- (d) where network businesses introduce new interruptible tariffs that require changes to network tariffs, such changes are able to be passed through retail tariffs (or new retail tariffs constructed) without adversely impacting retailers.

3.4 Regulated retail tariff structures in other jurisdictions

The Authority provided an overview of how regulated prices are determined in other jurisdictions in an information paper released during Stage 1 of this review. The following section provides an overview of the regulated retail tariff options available in each NEM jurisdiction.

New South Wales

In New South Wales, depending on the customer's metering installation, Integral Energy and EnergyAustralia both offer residential and business customers either an inclining block tariff, an inclining block tariff accompanied by a controlled load tariff or a time-of-use tariff.

For residential and business customers with an accumulation meter, Integral Energy and Energy Australia apply a two tier inclining block tariff with the step change cutting in at 1,750 KWh for residential customers and 2,500 KWh for business customers. The retail step changes reflect step changes applicable at the network level.

Customers with metering infrastructure capable of recording time-of-use consumption receive non market supply in accordance with the terms of the regulated time-of-use tariff.

Country Energy (the third retailer required to offer regulated tariffs in New South Wales) has two sets of regulated tariffs which apply in different supply regions. Depending on the customer's metering installation, all Country Energy's small non-market retail customers (business or residential) can access either a flat rate tariff, a flat rate tariff accompanied by a controlled tariff or a time-of-use tariff. Customers (both residential and business) in Country Energy's far western region are also able to access a declining block tariff with a declining step change taking effect at 300KWh. Residential customers in the far western region have the additional option of accessing an additional declining block tariff with the declining step change taking effect at 100KWh.

Country Energy does not have either inclining block or declining block tariffs at the network level and the retention of the declining block retail tariff structures for the far western region appears to be a legacy of previous tariff design policies.

South Australia

AGL SA offers small residential customers a regulated seasonal-inclining block tariff or a seasonal- inclining block tariff (multiple tiers) coupled with a controlled load tariff. Business customers are able to select (depending on the available meter) from a regulated seasonal-inclining block tariffs or seasonal-inclining block time-of-use tariffs (multiple tiers).

The retail tariff step changes in the inclining blocks generally follow the step changes applicable in the corresponding network tariff. In some instances, where retail steps are not aligned with the network tariff, an underlying policy rationale is responsible for the divergence.

Regulated retail tariffs for small customers also have seasonal variations to account for higher wholesale energy costs during summer (1 January to 31 March). These seasonal tariffs are independent of network tariffs in South Australia which do not have any seasonal variation.

Australian Capital Territory

ActewAGL's small residential customers are able to access a flat rate tariff, an inclining block tariff or a time-of-use tariff depending on the available meter. Business customers have access to either a flat rate tariff, an inclining block tariff or time-of-use tariff coupled with a demand charge for either low voltage consumption or high voltage consumption.

The structure of the different retail inclining block and time-of-use tariffs for residential and business customers are consistent with the underlying network tariff.

4. POTENTIAL FOR IMPROVING EXISTING TARIFFS

As foreshadowed in Stage 1 of this review and in light of the preceding discussion, the existing tariff structure could be improved by:

- (a) removing obsolete tariffs;
- (b) combining or aggregating tariffs where the customers currently on these tariffs have similar consumption patterns and/or underlying costs;
- (c) encouraging large customers to move to market based contracts by removing their access to regulated tariffs on notified prices; and
- (d) ensure that the fixed and variable components of the chosen retail tariffs reflect the structure of the costs faced by retailers.

4.1 Obsolete tariffs that could be removed

Three regulated tariffs in the current schedule (Tariff 37, 63 and 64) are obsolete and not accessible by new customers. These tariffs continue to exist solely for the benefit of those customers who were supplied under them at the time they were closed to new customers.

AGL, Origin Energy, EnergyAustralia and Ergon Energy all recommended the complete removal of obsolete tariffs. Origin Energy in particular noted that the notified prices for these tariffs are below cost-reflectivity which provides no incentive for the remaining customers to move to market offers (or switch to other non-market tariffs).

AGL suggested that Tariff 37 (non-domestic heating tariff) and Tariff 64 (irrigation tariff) have peak and off-peak pricing periods that do not correspond to network tariffs and suggested that customers on these tariffs could be moved into Tariff 22 which is a general supply time-of-use based tariff. However, AGL noted that the time-of-use clocks on these meters may need to be reset by the distributor to facilitate billing under Tariff 22.

AGL also suggested that customers on Tariff 63 (farm tariff) could be consolidated into Tariff 62 (also a farm tariff) as these have the same pricing periods, but Tariff 63 customers with low usage would likely face a significant price increase as a result.

4.2 Tariffs that could be consolidated

Submissions from stakeholders made a number of suggestions for existing tariffs that could be consolidated.

AGL suggested that non-residential usage tariffs could be consolidated into either Tariff 20 for anytime (flat rates) or Tariff 22 for customers on other time-of-use based tariffs. AGL suggested that Tariff 21, which has a minimum charge per month instead of a fixed charge and a declining block tariff structure which includes a higher priced first block to compensate for the absence of a fixed charge, could be consolidated into Tariff 20.

Origin Energy proposed that specific farming and irrigation tariffs such as Tariffs 62, 64, 65 and 66 could be consolidated into a single time-of-use tariff. Origin Energy also suggested that, since Tariff 21 is a declining block tariff, it should be removed with customers moved to either tariffs applicable to small and medium residential and business customers. Origin Energy observed that this would happen naturally if the retail tariffs were made costs reflective and the retail fixed charges set appropriately.

4.3 Removal of large customers from regulated tariffs

Section 300 of the Electricity Regulation provides that a customer is classified as a large customer if its consumption is 100 MWh per year or more.

Most stakeholders supported the phasing out of access to regulated tariffs for large customers. Large electricity consumers are generally in a superior position to small residential and business customers in terms of the incentive, expertise and capacity to manage their electricity consumption, and to negotiate market contracts.

Queensland is currently the only state in the NEM that still allows large customers to remain on regulated tariffs (though large customers who move off regulated prices are not able to subsequently revert to a regulated tariff as small customers are able to do). Allowing new large customers access to regulated tariffs means that they access notified prices that are not necessarily designed to reflect their cost of supply. While retailers have an incentive to compete for customers that consume significant quantities of energy, access to notified prices that do not reflect costs means that these large customers have no incentive to seek out market contracts.

Origin Energy proposed that, if large customers were prohibited from accessing regulated tariffs, then Tariffs 41, 43 and 53 could be removed, with the few small customers on these tariffs moved to the flat rate and time-of-use retail tariffs available for small businesses under Tariff 20 and 22.

Origin Energy also noted that removing access for large customers to regulated tariffs would simplify the alignment of retail tariffs to network tariffs as currently the general usage and low voltage retail tariffs have customers on up to eight potential network tariffs or in some cases a unique network charge for their business.

4.4 Cost reflectivity of existing tariffs

As noted in chapter 2, many submissions from retailers noted that the fixed component of most of the existing regulated tariffs do not even meet the fixed network charges applicable to customers in Energex's network area.

To reduce cross-subsidies and encourage competition, particularly at low consumption levels, regulated tariffs should have fixed and variable cost components that reflect the structure of the costs faced by retailers.

Developing appropriate fixed and variable charges for each tariff essentially requires that:

- (a) a cost-stack be developed to determine the fixed and variable costs associated with each tariff; and
- (b) the tariffs be redesigned such that the fixed and variable network costs are appropriately reflected in the retail tariffs.

Without undertaking a full cost build-up exercise, it is difficult to determine the likely impact on customers. However, there will undoubtedly be some winners and some loser from this process.

4.5 The Authority's view

As foreshadowed in its Stage 1 report and as generally supported by stakeholders, the Authority proposes that, as a minimum, the existing tariff schedule should be compressed by:

- (a) removing Tariff 21 and transferring customers on Tariff 21 to Tariff 20;

- (b) consolidating all the farming and irrigation tariffs such as Tariffs 62, 64, 65 and 66 into a single time-of-use tariff either by moving customers to Tariff 20 or a special purpose farm tariff if this were more appropriate; and
- (c) removing the existing obsolete tariffs (Tariff 37, 63 and 64) and moving existing customers to other comparable tariffs, for example, Tariff 37 and Tariff 64 customers to Tariff 22 and Tariff 63 customers to Tariff 22.

Affected customers should be given notice of the change (say 6 months) during which time they can consider making alternative arrangements that might better suit their needs. Any customers remaining on the affected tariffs as of the effective date would be automatically transferred to the replacement tariff at the applicable notified price.

There was also strong support for the proposal to remove regulated tariffs and notified prices for large customers. Other jurisdictions have proceeded down this path following the introduction of full retail competition. Most large customers in Queensland have had the option to choose their retailer for considerably longer than small customers. That many have chosen not to do so most likely indicates that they are enjoying prices less than market rates, subsidised by other more profitable customers.

If large customers were removed from regulated tariffs then, as noted by Origin Energy, Tariffs 41, 43 and 53 could also be removed from the tariff schedule with any small customers on these tariffs moved to either Tariff 20 for flat rates or the time-of-use tariffs under Tariff 22.

However, due to the lack of competitive market offers, it may be necessary to retain some form of regulated tariff for large customers in Ergon Energy's network area. This could also be the case for some unmetered supplies (for example, street lighting) which are currently treated as a non-market customer only in the Ergon Energy area.

These measures should be accompanied by a thorough review of the notified prices applying in each remaining tariff with the objective of moving these to a fully cost reflective basis and, where possible, aligning prices with underlying network charges.

While compressing the existing tariff schedule and rebasing notified prices will improve cost reflectivity, promote competition and simplify tariff options, the scope of change is restricted to the available existing tariffs. There is no reason to assume that these represent the most appropriate arrangement of tariffs. A key concern expressed by many stakeholders related to the lack of alignment between the current regulated retail tariffs and the network tariffs. All retailers supported a rearrangement of regulated retail tariffs so that retail tariffs reflected the network tariff structure.

The Authority agrees that such a change offers the best prospect for sustainable competition.

5. PROPOSAL FOR A NEW SET OF TARIFFS

One of the key criteria specified in the Direction Notice for this review is that prices should reflect the costs of supplying electricity in South East Queensland. As the Authority found in Stage 1 of this review, objectives such as cost recovery, the promotion of competition, and sending of appropriate price signals to customers will all be achieved if better cost reflectivity can be achieved. In addition, the Direction Notice specifies that tariff structures should assist in the long-term management of peak demand and provide an incentive for customers to use electricity more efficiently.

The adoption of the N+R pricing methodology recommended in Stage 1 of this review would provide an opportunity to introduce a new set of regulated retail tariffs designed to meet the objectives set out in the Direction Notice for this review and not restricted to amending the existing set of tariffs.

With these objectives in mind and taking into account the previous discussion on the limited effectiveness of implementing somewhat piecemeal changes to existing tariffs, the Authority's preferred course of action would be to introduce a new set of regulated tariffs that:

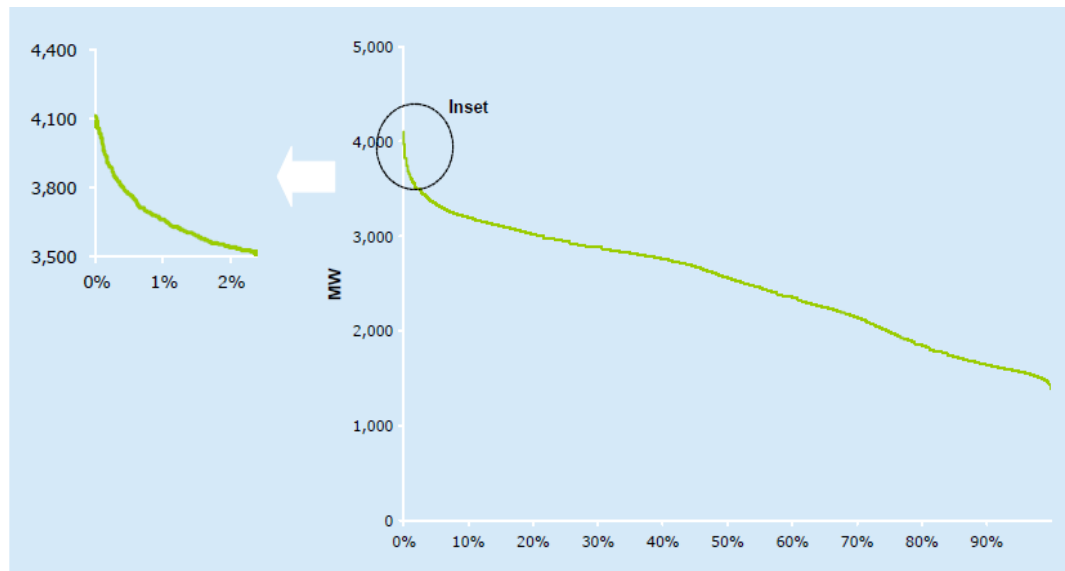
- (a) are aligned with network tariffs with the fixed charge structure driven by network tariff structures;
- (b) are cost reflective to the extent possible given the predominance of accumulation meters;
- (c) accommodate voluntary access to time-of-use tariffs for those small residential customers that have interval meters installed; and
- (d) are simple and logical for customers to understand.

For purely practical reasons, some of the existing special tariffs would need to be retained in Ergon Energy's distribution area in order to ensure that customers that are unable to access competitive market offers are not left without a supply option.

5.1 Network tariff alignment

The Queensland electricity market, like all other electricity markets is characterised by critical peak periods, during which demand for energy increases significantly for relatively short periods of time. To ensure security of supply in peak demand periods requires significant investment in network infrastructure. Unless appropriate pricing signals are sent, critical peak events, even though short in duration, can lead to a lack of utilisation of infrastructure and increased costs.

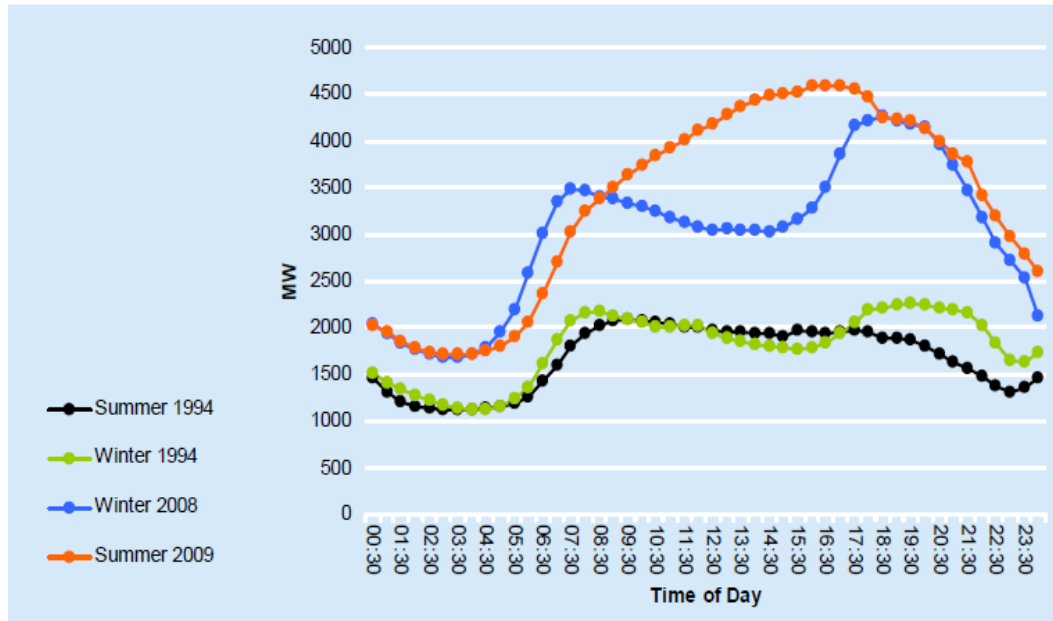
In Energex's distribution area, the network infrastructure is utilised at critical peak rates only for extremely short periods of time. Figure 3 shows the load duration curve for South East Queensland for 2007-08 that indicates the top 11% of Energex's load occurs for less than 1% of the year.

Figure 3: Energex's network load duration curve for 2007-08

Source: Energex 2010-2015 Regulatory Proposal to AER p 84.

Over the past decade, not only has there been a substantial growth in demand on Energex's network but the shape of demand has also changed significantly making the management of the network during times of peak load even more critical.

Figure 4 compares the changing profile of summer and winter daily load curves over the past 15 years for Energex's distribution network. It can be seen that, in 1994, Energex's network had a winter peak with the typical load characteristic of a "twin peak" shaped daily load curve peaking in the morning and evening, and lower consumption between these times. This winter curve is the result of customer demand associated with normal daily household routines that consume electricity such as space heating (in the cooler winter months), cooking, showering (hot water heating) and laundry activities. However, by 2008-09, there had been a significant growth in demand and the annual peak demand changed from a winter to summer peak.

Figure 4: Changes in daily load profile in Energex's network 1994 to 2008-09

Source: Energex 2010-2015 Regulatory Proposal to AER p 52.

Consistent with the relative shapes of the 1994 and 2009 winter load profiles, Energex has attributed this shift in demand and changes to the daily load profile as being primarily driven by the increased use of air-conditioning in South East Queensland.

Alignment of network tariffs with retail tariffs under N+R pricing methodology

Given the critical nature of network capacity utilisation, it is important that network signals are able to be passed through to customers. In this regard, in its Final Report on Stage 1 of the review, the Authority recommended an N+R cost build up approach to setting notified prices that included a pass-through of the network cost component to customers in the form of a bundled retail price rather than separately itemised network charge on retail bills.

Ergon Energy noted that this proposal would, to some extent, ensure distributors' initiatives in managing peak demand were not impeded.

AGL, Energex and Ergon Energy all noted that network tariffs will only be effective to the extent that price signals from the network are reflected in retail tariffs. AGL further suggested that, to ensure that network price signals are not stifled, the structure of retail tariffs should ideally be aligned with network tariffs.

Origin Energy noted that Energex's current network tariffs do not distinguish between small residential and small business customers that consume less than 25 MWh per annum nor do they distinguish between medium businesses or very large residential customers that consume more than 25 MWh per annum. To overcome such problems, Origin Energy suggested that any alignment of retail tariffs should be based on consumption class rather than the type of customer definition that are currently applied to regulated retail tariffs.

The Authority agrees with the view that retail tariffs should complement network tariffs and that any consideration of alternative tariff structure options for retail pricing must take into account the underlying network tariffs structures. It is critical that network and retail tariffs are structurally aligned to ensure clear (demand) pricing signals are sent through to customers. As

noted by retailers, it is appropriate that the network tariff structure be used to drive the retail tariff structure.

Under the N+R pricing methodology the Authority proposed in its Stage 1 Final Report, the range of new retail tariffs would be matched to the range of Energex network tariffs and the Energex network tariffs would be used as the N component in the proposed N+R pricing methodology. Under this proposal, each network tariff would be linked to a matching R component, with the R component being determined in a pricing determination process conducted in consultation with stakeholders.

However, not all of the current Energex network tariffs would necessarily be adopted as N components in a new suite of regulated retail tariffs. For instance, the existing network tariffs that apply to the declining block retail tariffs, the obsolete retail tariffs, or tariffs designed for large customers (consuming over 100 MWh per annum) would not be replicated or matched in the new suite of regulated retail tariffs.

In fact, given that the current range of Energex network tariffs was at least partially based upon the existing retail tariff schedule, the Authority considers that it would be prudent in the context of such fundamental change for Energex to first conduct a comprehensive review of its network tariff range, to determine whether any of its existing network tariffs should be modified to better reflect network priorities.

While simplicity is to be valued, mirroring network tariffs in retail tariffs could lead to an increase in the number of regulated retail tariffs due to the different Energex network tariffs that apply to similar customers who consume above and below the 25 MWh per annum consumption thresholds. This level of duplication may be an unavoidable side effect of achieving better cost reflectivity.

5.2 Cost reflective tariff structures

With time-of-use tariffs, customers have the opportunity to make informed choices about when they use electricity. However, achieving this degree of cost reflectivity requires that customers are able to access real time information about prevailing spot prices for wholesale cost of energy and network capacity.

While such technology exists, it is not widely available. Time-of-use tariff options are dependent on the availability of interval meters or smart meters. Most small customers in Queensland have an accumulation meter to record their total consumption. These meters are incapable of providing more complex information.

The relative merits of alternative tariff structures were considered in chapter 3. In the absence of widely available metering technology to support time-of-use tariffs, the alternative options are few.

Inclining block tariffs, declining block tariffs, seasonal tariffs all offer some benefits in certain situations. However, those requirements are rarely met. While not ideal, flat tariffs, as currently apply to residential customers in Queensland, would appear to be no worse than any other options with the added advantage of being easily understood and familiar to small customers.

However, a key issue that was identified that can contribute to improved cost reflectivity would be to at least allocate the fixed and variable components of prices to best reflect the fixed and variable components of the cost of supply.

As noted in chapter 3, interruptible tariffs (such as Tariff 31 and 33) are an effective instrument for managing peak demand on the distribution networks and these would certainly have a place in any revised tariff schedule.

Where existing metering supports some time-of-use pricing (such as that offered by Tariff 22 and the farming/irrigation tariffs), including tariff options in a new schedule that allows for the continued use of these features would also promote cost-reflectivity.

5.3 Introduction of voluntary opt-in time-of-use tariff for residential customers with interval meters

There was broad support in submissions for the introduction of more detailed time-of-use tariff structures to deliver significant benefits in terms of more efficient use of electricity and reduced peak demand.

Energex and AGL suggested that the penetration of interval meters into the small residential customer market was now sufficiently large (at over 200,000 meters) that a time-of-use tariff could be introduced for those customers with an interval meter installed. Energex noted that it is currently replacing accumulation meters with interval meters on a new and replacement basis.

Ergon Energy noted that introducing a time-of-use tariff for residential customers in Queensland would require an amendment to the Metrology Procedures. Currently, interval meters installed in residential premises (replacing old accumulation meters or in new houses) are required to be read as if they were accumulation meters.

However, consumer groups such as QCOSS and the Queensland Consumer Association did not support introducing a time-of-use tariff until the results from pilots and trials of smart metering technology in Queensland and other jurisdictions were available. Both consumer groups suggested there should be a thorough cost/benefit assessment of a roll-out of smart meters along with consideration given to customers' price elasticity of demand and the required peak and off-peak prices before any time-of-use tariffs utilising the features of interval meters were introduced. In particular, QCOSS suggested that there is significant uncertainty around residential customers' price elasticity of demand at peak times.

While it would be sensible to conduct a cost/benefit analysis before mandating any accelerated rollout of interval or smart meters, that is not what is being proposed by the introduction of this suggested tariff. No accelerated roll-out of interval meters is contemplated. Rather, this proposal simply recognises that interval meters are gradually replacing accumulations meters as part of the normal replacement cycle for such equipment. As the numbers of interval meters in the community increases, it would seem sensible to offer those customers with an interval meter the opportunity to make use of the features of those meters, hopefully to their advantage. Ideally, customers would also be able to choose to revert to having their meter read as an accumulation meter so that than would be no worse off than other small customers.

Nevertheless, there a number of issues that would need to be considered in developing a suitable regulated time-of-use tariff, including:

- (a) implementing the necessary changes to the NEM Metrology procedure for Queensland required to removing the restriction of reading interval meters as accumulations;
- (b) defining the number of time dependant pricing bands and the time period of each band;
- (c) whether different prices should apply in different seasons;

- (d) what network tariffs would complement the signals sent by time dependant pricing bands; and
- (e) the price differentials required between pricing bands to act as an incentive for customers to shift consumption away from peak periods.

5.4 Simple and logical tariff structures

The Authority does not foresee any need to introduce complex or obscure pricing structures in any new regulated retail tariff schedule. Given the metering limitations, it is most likely that flat rate tariff structures would be common and these are relatively simple to understand and familiar to most customers.

Aligning retail tariffs with Energex's network tariffs would require some duplication of tariffs to reflect network tariff classification of customers consuming above and below 25 MWh per annum.

In terms of introducing a voluntary time-of-use tariff on an opt-in basis for residential customers, ideally, the Authority would prefer to keep such a tariff structure relatively simple as most residential customers in Queensland have had no previous exposure to time-of-use pricing. As a minimum this could include just a simple peak/off-peak pricing component.

6. TRANSITIONAL ARRANGEMENTS

The Direction Notice requires the Authority to consider any timing issues associated with the implementation of any proposed changes to existing tariff structures and to recommend transitional arrangements where necessary.

The Authority recently released an Interim Consultation Notice advising interested parties that it was commencing a review under the existing Benchmark Retail Cost Index legislation with the aim of setting retail prices for 2010-11 at the end of that process.

The Government may, after it considers this Stage 2 report, request the Authority to do otherwise and to proceed to implement some or all of the options outlined in this report.

Most stakeholders argued that any new arrangements should not be introduced until 1 July 2011, to ensure that they were well researched and developed in a consultative framework. Allowing the BRCI process to run its course to set retail prices for one more year would provide the necessary time to ensure that all parties were adequately consulted on the change process before the new process was implemented to set retail tariffs and prices from 1 July 2011.

In light of this, consideration of transitional issues is probably best left until the detail of any proposed changes has been clearly established. Nevertheless, the Authority acknowledges that there will be transitional issues to be addressed if its preferred course of action is to be implemented. Even implementing the lesser option of rationalising the existing tariff schedules and associated notified prices would likely give rise to a number of transitional issues, albeit for a smaller number of customers.

Several transitional issues were raised in submission, namely:

- (a) Timing. That customers have sufficient time to adjust their behaviour before any changes are implemented;
- (b) Information. That customers are provided with sufficient information to make informed decisions on their choice of tariff; and
- (c) Welfare. That vulnerable customers affected by tariff changes are adequately protected.

The Authority acknowledges that these are matters to be addressed in any implementation process.

As any new process will likely involve establishing a multi-year price path for regulated tariffs, this of itself will provide options for transitioning changes.

APPENDIX 1: LIST OF STAKEHOLDERS**Table A1: Submissions to Stage 2 Request for Comments Paper**

<i>Organisation/individual</i>	
1.	AGL
2.	Australian Power and Gas
3.	Energex
4.	Energy Australia
5.	Ergon Energy
6.	Jackgreen
7.	Integral Energy
8.	Origin Energy
9.	Queensland Consumers Association
10.	Queensland Council of Social Services
