Office of Energy
Government of Western Australia

Electricity Retail Market Review

Summary of Issues

December 2007

1. INTRODUCTION

The Minister for Energy is conducting an “Electricity Retail Market Review”, which is a review of:

- electricity retail tariff arrangements;
- introduction of full retail contestability (“FRC”) in electricity; and
- the roll out of smart meters.

The Office of Energy is completing this review and preparing recommendations for the Minister’s consideration.

This paper is a summary of the Issues Paper released by the Office of Energy for the Electricity Retail Market Review. This paper is intended to provide an overview of the key issues on which the Office of Energy is requesting comment. This paper is not intended as a substitute for the Issues Paper. Stakeholders should refer to the Issues Paper for a full discussion of these issues relevant to this review.

This paper is organised into three main sections;

- Section 2 discusses the electricity retail tariff review;
- Section 3 discusses the FRC review; and
- Section 4 discusses the smart meter review.

2. REVIEW OF ELECTRICITY TARIFF ARRANGEMENTS

Background

Under the electricity tariff arrangements in Western Australia, both Synergy and Horizon Power are required to offer to supply certain classes of customers at regulated tariffs.

The main electricity grid in Western Australia is known as the South West Interconnected System ("SWIS").

- Synergy must supply non-contestable customers in the SWIS at the regulated tariff. Non-contestable customers are those that consume 50 MWh per annum or less (equivalent to an annual electricity bill of $8,000).
- Customers in the SWIS that consume between 50 and 160 MWh per annum can choose to negotiate a contract with any retailer (including Synergy) or can opt for supply from Synergy under the regulated tariff.
- Customers in the SWIS that consume 160 MWh per annum or more are free to negotiate a contract with any retailer. While tariffs exist for these customers, Synergy is not obliged to supply such customers under tariff.

Similar obligations to those outlined above are imposed on Horizon Power for customers outside of the SWIS.

The Government has a uniform tariff policy whereby the tariffs within and outside of the SWIS are the same for some of the classes of customers. The Government's uniform tariff policy applies to all electricity customers supplied by Synergy and Horizon Power throughout the State. The Office of Energy's review of tariff arrangements will be undertaken within the context of the uniform tariff policy.

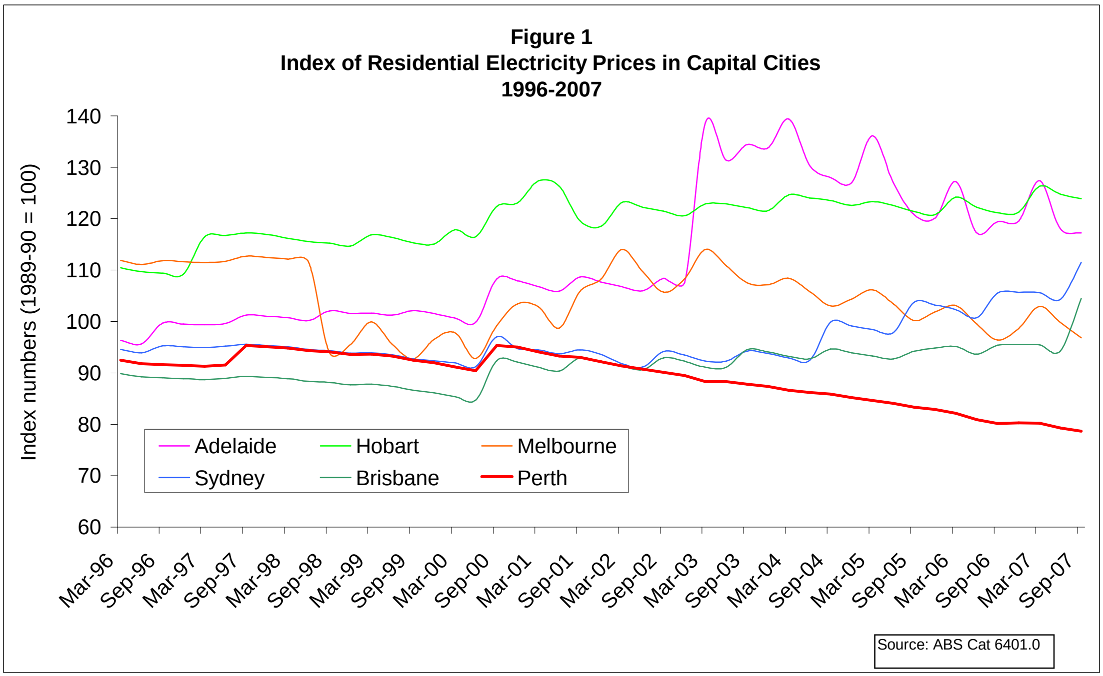
Why is a review of electricity tariff arrangements necessary?

Regulated retail tariffs in Western Australia have been frozen for some time.

- Residential tariffs have not increased since 1997/98 (with the exception of the introduction of the GST in 2000/01), which represents a real price reduction of over 17% to July 2007.[1]
- Business tariffs had not increased since 1991/92, with the exception of medium to large business tariffs, which were increased on 1 July 2007. This represents a real reduction of over 30% in small business tariffs to 2005/06.

Whilst Western Australian electricity tariffs have declined in real terms over the past decade, retail electricity prices have increased in the other jurisdictions of Australia. Figure 1 shows the movements in residential electricity prices across these jurisdictions.

[1] Office of Energy estimate based on electricity tariff data collected by the Office of Energy and ABS CPI data.



The strong Western Australian economy has resulted in significant increases to the cost of producing and supplying electricity over the period since retail tariffs were last reviewed.

Fuel costs such as gas, coal and diesel have seen a large increase over the last few years and are still trending upwards:

- The cost of delivered gas in the Western Australian domestic market has increased by over 100% in the past 12 months. Public information suggests that the price of gas for new contracts is now around $6.00 per GJ,[2] compared to prices of around $2.00-$2.50 per GJ in early 2006. Gas prices are unlikely to fall back to historic levels in the foreseeable future.[3]
- With gas prices rising to reflect international liquefied natural gas ("LNG") prices, coal prices are also expected to increase, as coal producers can price coal just below gas and not lose market share.
- Crude oil prices have increased by 312% over the nine year period to December 2006.[4]

Power plants and power lines need to be maintained and built to produce electricity. The input costs of this work are generally made up of labour, material and construction costs.

- Labour costs have increased by over 37% between December 1998, the last time the residential tariff (the A1 Tariff) was increased, and June 2007.[5]
- The prices of primary commodities have increased by 80% since December 1997.[6] Commodity prices provide an indication of the magnitude of increased material costs. In particular, iron ore prices have increased by 118% over the same time period.[7]

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[2] "Discussion Paper: Gas Issues in Western Australia", Economic Regulation Authority, June 2007; *"Energy Quarterly"*, May 2007, EnergyQuest.

[3] "The Western Australian Gas Market", Argonaut Securities Pty Limited, September 2007.

[4] Petroleum Resource Data File, Department of Industry and Resources, September 2007, http://www.doir.wa.gov.au/mineralsandpetroleum/9219F5A3B802458E8AC4860DAFE8EA67.asp

[5] ABS Cat, 6345.0, March 2007.

[6] Non Rural Commodity Index, Table G5, Reserve Bank of Australia, September 2007.

- Both materials and labour costs impact on construction costs. Construction costs grew by 44% from December 1998 to June 2007, as compared to CPI growth of 31% over the same period.[8]

It should also be noted that significant investment is being made on the main electricity network to support the State's fast growing economy and growth in new residential development. The Government has already announced a total of $2.6 billion capital expenditure on the network over the next four years.[9]

The Government is committed to implementing measures to keep electricity prices as low as practical. However, it is undesirable to have electricity supplied at a price where the short-term and long-term reliability of supply is unsustainable. It is important to recognise that prices can send an important production and investment signal. If electricity prices do not provide an adequate return on efficient investments in supplying electricity, then the reliability of electricity supply will be put at risk. What should be clear is that there are trade-offs between various objectives. For instance, there is a trade-off between the objectives of keeping prices low versus ensuring efficient investment signals and the financial viability of the industry.

The Government embarked on a number of significant energy market reforms in the last few years. These reforms established the framework to drive the least cost way of producing and supplying electricity, while maintaining reliability at a high standard. These reforms aim to produce a fair, open, and competitive market for electricity in Western Australia. Experience shows that competition leads to the least cost method of producing goods and services, thereby providing the cheapest possible price for consumers. As such, without the reforms undertaken by the Government, it is likely that the cost of producing and supplying electricity would have been greater than it is now.

How will the review of tariff arrangements be undertaken?

The review of tariff arrangements will be undertaken in three parts:

- the structure of the tariff arrangements will be reviewed, and changed if necessary;
- economic modeling will be undertaken to set the appropriate level of each tariff; and
- the impact on financially disadvantaged electricity consumers will be considered.

Tariff Structure

The review of the tariff structure will consider the criteria that will be used to determine tariff classes, the relative importance placed on the fixed and variable components of the tariff, and the form of the fixed and variable components (for example, a variable component can be structured to reflect the time of consumption).

The aim is to create classes of tariffs that are reflective of costs. Two characteristics of customer electricity usage that are particularly important are the level of consumption and load profile (i.e. timing of consumption).

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[7] Iron Ore Resource Data File, Department of Industry and Resources, September 2007, http://www.doir.wa.gov.au/mineralsandpetroleum/9219F5A3B802458E8AC4860DAFE8EA67.asp

[8] Construction cost increases based on increase to the Non Residential Construction index as calculated in the ABS Cat 6427.0, Table 48. The Perth CPI was taken from ABS Cat 6401.0, Table 1.

[9] "2007-08 State Budget", Budget Paper No. 2, Volume 3, p.1007.

The level of consumption is important because costs of serving customers are likely to vary for customers with different levels of consumption.

Load profile is important as it directly impacts on the cost of energy. Generally speaking, customers with a flat load profile (i.e. relatively constant consumption over time), or with a load that peaks during 'off-peak' periods, will cost less for a retailer to serve than consumers who consume more during peak times.

Other customer characteristics that are relevant to the tariff structure include the type of customer (residential, business, or charitable organization) and the type of metering at the customer's site.

In particular, some of the issues that will be addressed include:

- whether tariffs for large business customers should be phased out;
- considerations in implementing tariffs that promote demand side management and energy efficiency;[10] and
- whether tariffs for community and charitable organizations should be phased out, to be replaced by another mechanism to ensure reduced prices for these consumers.

Consideration will need to be given to ensuring that the tariffs support the Government's electricity reform initiatives and electricity market development objectives. For example, a tariff structure that mutes the economic signals created by the wholesale market or transmission pricing system would be undesirable.

In its Issues Paper, the Office of Energy invites comment on the appropriateness of the current tariff structure, and on options for changes to the tariff structure. For example, instead of tariffs that get cheaper the more is consumed, tariffs could be made more expensive the more is consumed. This would provide an incentive for consumers to conserve energy.

Modeling of the Appropriate Tariff Level

A tariff can be built by "stacking" the efficient costs of a retailer on top of one another. This ensures that the total cost of producing and supplying electricity is covered by the tariffs. Using "efficient" costs in setting tariff levels will provide incentive for a retailer to minimise its costs. This is the concept behind a cost stack model.

Retailers' costs can be categorised into the following areas:

- wholesale electricity costs (i.e. generation);
- network charges;
- retail operating costs (cost to serve);
- profit margin;
- greenhouse gas emissions reduction programs;
- FRC costs (if and when FRC is implemented); and
- smart meter costs (if smart meters are rolled out).

[10] Demand Side Management means shifting consumption away from peak times or reducing consumption during peak periods. The aim is to create a flatter load profile. Energy Efficiency means reducing overall electricity consumption while maintaining or increasing output.

Cost reflective retail tariffs will be determined in this review using this building block approach. Each of the categories of retailer costs will be estimated, providing the basis to build-up total retail costs.

In its Issues Paper, the Office of Energy invites comment on the appropriate approach to estimation of each of the categories of retail costs, and expected variations in these costs.

Consideration of the Impact on Financially Disadvantaged Electricity Consumers

A number of subsidies exist for disadvantaged members of the society. If tariff levels are changed as a result of this review, consideration will need to be given to whether the level or structure of these subsidies should also be changed.

In addition, an increase to the tariffs may provide financial hardship for members of society for which the current level of tariffs do not have such an impact. If the conclusion to this review is that tariffs should increase, consideration will be given to whether the increase will adversely affect certain members of society. Mechanisms to limit this effect will also be considered.

In its Issues Paper, the Office of Energy invites comment on the impact of current subsidies and mechanisms that limit adverse impacts experienced by consumers due to tariff adjustments.

3. INTRODUCTION OF FRC IN ELECTRICITY

The *Electricity Corporations Act 2005* requires that the Government conduct a review of the benefits of introducing FRC in electricity. This review is to be initiated after April 2009. However, given the strong relationship between FRC considerations, and the analysis of tariff and smart meter issues, it is appropriate to consider FRC implementation as part of the current review, with a more limited review process conducted after April 2009.

What is FRC?

FRC is the term used to describe a retail environment where <u>all</u> consumers are able to choose their retailer. Currently, within the SWIS, only customers that consume more than 50MWh per annum (equivalent to an annual electricity bill of $8,000) are allowed to choose their retailer. The review will consider extending customer choice to all electricity consumers.

Timing of FRC

The Electricity Reform Task Force noted that the successful implementation of FRC requires effective competition at all levels of the industry, and at the generation and wholesale market levels in particular. To achieve this, the Electricity Reform Task Force considered the following criteria to be necessary:

- structural separation of generation and retail functions from network functions;
- the establishment of an effective wholesale market;
- the existence of an independent electricity access regulator and workable network access arrangements; and
- suitable regulatory structures and mechanisms that support a competitive market.

The electricity reforms to date have been aimed at establishing these criteria. Consideration of the timing of FRC could reflect the above requirements in two ways:

- either a set timetable for the introduction for FRC can be adopted; or
- the timetable for the introduction of FRC can be made subject to the achievement of certain defined outcomes.

In its Issues Paper, the Office of Energy invites comment on the requirements for and appropriate timing of the introduction of FRC.

Costs and Benefits of FRC

Costs of implementing FRC relate to establishing the systems and processes to transfer customers between retailers. This includes the systems to identify customers and transfer them between retailers (including connections/disconnections and arrangements to determine electricity consumption levels before and after transfer), and billing systems.

Benefits from retail competition can include greater customer choice, better focus on consumers, and a reduced need for regulation, which ensures that upstream efficiencies are passed through to consumers.

In the Issues Paper, the Office of Energy invites comment on the costs and benefits that are likely to occur with the introduction of FRC.

Barriers to Entry

A barrier to entry is any factor that prevents or deters the entry of new competitors into a market. Potential barriers into the Western Australian retail electricity market include:

- the absence of tariffs that allow for full recovery of retailer costs in supplying electricity;
- the relatively small size of the Western Australian electricity market;
- possible limited scope for negotiation between retailers and generators;
- capital expenditure required on mass market billing systems, customer service functions, and IT systems; and
- the presence of incumbent retailers, who have the advantage of an established customer base, brand recognition, and highly relevant marketing experience.

In the Issues Paper, the Office of Energy invites comment on the barriers that new retailers would face in an FRC environment.

Customer Protection

The introduction of FRC in electricity will bring consumer benefits in the form of additional choice and increased competition between electricity retailers. Whilst FRC is expected to have a positive impact for small use customers in exerting downwards pressure on electricity prices, implementation costs may have a negative impact on these consumers in terms of the pass through of these costs. Therefore customer protection arrangements need to provide that, where possible, any adverse cost impacts from FRC implementation are not allocated disproportionately between customers.

In its Issues Paper, the Office of Energy invites comment on whether current customer protection measures are sufficient to address possible negative impacts on small use customers from implementing electricity FRC.

Other FRC issues

In its Issues Paper, the Office of Energy invites comment on a range of other issues related to the introduction of FRC in electricity, including:

- operational arrangements for administering FRC in electricity;
- whether retailers should have recourse to additional debt recovery avenues with the introduction of FRC in electricity;
- metering arrangements that should be implemented to facilitate customer switching;
- arrangements for the administration of subsidies and rebate schemes in an FRC environment;
- arrangements for reselling of electricity in an FRC environment;
- arrangements for Standard Form Contracts in an FRC environment; and
- the costs and benefits of contestability for un-metered supplies, such as street lighting.

4. ASSESSMENT OF THE ROLL-OUT OF SMART METERS

The Council of Australian Governments agreed in February 2006 to the progressive national roll-out of "smart" electricity meters across Australia to allow the introduction of time-of-use pricing and to allow residential customers to better manage their electricity demand during peak periods. However, the roll out of smart meters is only to occur in areas where the expected benefits exceed the costs associated with these arrangements.

A smart meter is a meter that can measure and record electricity consumption in half hour periods. A smart meter can also communicate directly with the electricity retailer. This means that the meter can send signals to your home and can be read remotely.

Smart meters can enable time-of-use pricing. Time-of-use pricing refers to tariffs that have higher prices during the peak time of the day and lower during the off-peak time. Since the cost to supply electricity varies during different times of the day and year, a tariff based on the time of day might be more appropriate.

The Ministerial Council on Energy ("MCE") is currently undertaking a study to determine the minimum functions to be included in a smart meter, and is conducting a cost-benefit analysis of the roll-out of smart meters in each jurisdiction of Australia. This cost-benefit analysis is expected to be completed in early 2008.

Smart Meter Functions

Smart meters can be designed that have a great deal more functions than just half hour measurement and recording, and remote meter reads, such as:

- import/export metering (which would allow for measurement of actual output from photovoltaic systems);
- remote connect/disconnect (which would allow fast transfer of customer accounts when customers move location); and
- ability to install in-home displays (in-home displays would give customers real time information about consumption and pricing).

The MCE is considering over 20 additional functions as part of its cost-benefit analysis to determine the minimum functionality that would be rolled out across Australia. Appendix 5 of the Issues Paper presents the specific functions that are currently being considered for inclusion in the smart meter functionality as a minimum, as well as some additional functions that are still under consideration, and some functions that have been excluded from consideration. The Issues Paper is seeking comments on the costs and benefits of each of these functions.

Costs and benefits of roll-out of smart meters

The Electricity Retail Market Review will assess the outcomes of the MCE cost-benefit analysis; determine the merits of the case for rolling out electricity smart meters in Western Australia; and determine how smart meters should be rolled out. In its Issues Paper, the Office of Energy identified a range of objectives and matters to be taken into account in evaluating the national smart meter cost-benefit analysis from the Western Australian perspective, including:

- the ability of smart meters to promote efficient, safe and reliable production and supply of electricity in the Wholesale Electricity Market;

- the ability of smart meters to facilitate more cost-reflective tariff arrangements;
- the avoidance of discrimination in the Wholesale Electricity Market against particular energy options and technologies (such as renewable energy); and
- the objectives of the Western Australian *Electricity Industry Metering Code 2005.*

In its Issues Paper, the Office of Energy invites comments on the costs and benefits of a roll-out of smart meters in Western Australia.

The benefits of smart meters may lie in promoting decreased use of electricity during peak times. Demand for electricity varies across time in Western Australia, and increases significantly for relatively short peak periods of time, called critical peaks. Significant generation and network investment is required to ensure that electricity can be supplied reliably at critical peak times. In Western Australia, an average critical peak demand period lasts for only around 0.01% of the time,[11] but drives multi-million dollar network and generation investment.

Smart meters may reduce growth in demand during peak times through time-of-use pricing, and therefore lower generation and network infrastructure investment requirements. Other benefits that smart meters may provide include:

- avoiding costs for regular site visits to read meters;
- increased accuracy of meter data;
- quicker connections when moving house; and
- quicker detection and remedy of supply interruptions.

However the benefits of smart meters need to be weighed against the costs. Smart meters and the associated communications systems are expensive. Further costs would also be expected from changes to IT infrastructure, back office systems (e.g. for data storage and handling), and regulations associated with metering.

Other issues that need to be taken into account when considering the roll out of smart meters are the extent to which customers are willing and/or able to change their behaviour (i.e. the price elasticity of demand). For most customers, electricity is a small portion of household expenses, and it may not be worth their effort to change their behaviour; whilst other consumers have little or no ability to actually shift consumption. The willingness and/or ability of consumers to respond to price signals and the relative capacity to absorb possible additional costs may limit the usefulness of smart meters.

Forward Work Program

In the event that the Electricity Retail Market Review assessment supports a roll-out of smart meters in Western Australia, it will be necessary to develop a work program for implementing these arrangements.

In its Issues Paper, the Office of Energy invites comments on these implementation issues, in the event that a policy decision is made to support a roll out of electricity smart meters.

[11] Based on the SWIS load duration curve for 1 October 2006 to 1 October 2007, as published by the Independent Market Operator on 23 November 2007.