Inquiry into the Funding Arrangements of Horizon Power

Issues Paper

3 June 2010

Economic Regulation Authority
WESTERN AUSTRALIA

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Economic Regulation Authority
Perth, Western Australia
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Disclaimer

Foreword

The Treasurer of the State of Western Australia has requested that the Economic Regulation Authority (**Authority**) undertake an inquiry into the funding requirements and operating and capital expenditure programmes of Horizon Power.

In accordance with the inquiry's Terms of Reference, the Authority will determine the level of tariffs that reflect Horizon Power's efficient costs in supplying electricity to its customers. The Authority must also consider and develop findings on the efficiency of Horizon Power's expenditure programmes and procurement processes, as well as suggest incentives to encourage Horizon Power to operate more efficiently.

In developing its findings the Authority must examine the costs associated with each stage of the supply process, the levels of service delivered to customers and any additional costs that may be incurred as a result of the Carbon Pollution Reduction Scheme and the Mandatory Renewable Energy Target.

The purpose of this issues paper is to provide background information and outline the issues to be considered. It is intended to assist stakeholders to understand the nature of the issues under review and to facilitate public comment and debate. Throughout this issues paper questions that may be of particular interest to stakeholders are raised and highlighted in boxes.

Submissions on any matters, including those raised in this issues paper, should be submitted by 16 July 2010 to:

publicsubmissions@erawa.com.au

or addressed to:

Inquiry into the Funding Arrangements of Horizon Power
Economic Regulation Authority
PO Box 8469
Perth Business Centre
PERTH WA 6849
Fax: (08) 9213 1999

Section 1.4 of this issues paper provides further information regarding the process for making a submission.

Interested parties and stakeholders will have further opportunity to make submissions following the release of the Authority's draft report. The final report for the inquiry is scheduled to be delivered to Government by 18 March 2011, following which the Government will have 28 days to table the report in Parliament.

I encourage interested parties to consider the Terms of Reference and matters raised in the issues paper and prepare a submission to the inquiry.

LYNDON ROWE
CHAIRMAN

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Introduction

The Treasurer of Western Australia gave written notice to the Authority, on 17 May 2010, to undertake an inquiry into the funding arrangements of Horizon Power in accordance with section 129E(1) of the *Electricity Industry Act 2004*. This section of the Electricity Industry Act provides for the Treasurer to seek advice from the Authority prior to making a determination on the level of the Tariff Equalisation Contribution (**TEC**) payable to Horizon Power.

The inquiry has been referred to the Authority under Section 32(1) of the *Economic Regulation Authority Act 2003* (**Act**). This provides for the Treasurer to refer to the Authority inquiries on matters relating to regulated industries.[1]

1.1 Terms of Reference

The Terms of Reference for the inquiry are presented in Appendix A. The Terms of Reference require the Authority to consider and develop findings on:

- The cost reflective retail tariffs that would apply in the areas of operation of Horizon Power, for the purpose of determining the efficient expenditure required to supply customers on regulated retail tariffs located in these areas. This will inform the setting of the amount of the Tariff Equalisation Contribution, which will be determined by Government.

- The cost reflective retail tariffs should be determined for the period 2009/10 to 2013/14.

- A cost reflective tariff should be determined for each of the retail tariffs currently provided by Horizon Power, being the A2, K2, L2, L4, M2, N2, W2 and Streetlight tariffs (as detailed in the *Energy Operators (Regional Power Corporation) (Charges) By-laws 2006*).

- The Authority is to determine whether the area that Horizon Power operates in should be separated into sub-areas, given the different cost structures of the systems that Horizon Power operates, for the purpose of determining cost reflective retail tariffs. If this is the case, the Authority is to:

    - define the sub-areas (minimising the number of sub-areas as much as possible); and

    - determine a different cost reflective retail tariff (for each tariff class) for each sub-area.

- The Authority is also to consider and incorporate incentives for Horizon Power to develop and implement efficiency measures, such as gain sharing mechanisms between customers and Horizon Power, in determining cost reflective retail tariffs if the Authority considers this would minimise costs within the area that Horizon Power operates in.

[1] *Economic Regulation Authority Act 2003*, p19. Section 32(1) does not relate to any inquiries governed by operation of the Gas Pipelines Access (Western Australia) Law or the Code in force under section 4 of the *Railways (Access) Act 1998*.

- The efficiency of Horizon Power's procurement processes.
- The efficiency of Horizon Power's operating and capital expenditure programmes, including opportunities for alternative arrangements for service delivery in remote regions.
- The Authority must give consideration to, but will not be limited to the following costs when determining retail tariffs:
  - the efficient generation costs applicable in the area Horizon Power operates in or each sub-area, if applicable, taking into account the current and committed stock of generation;
  - the efficient network costs applicable in the area Horizon Power operates in or each sub-area, if applicable, taking into account the current network infrastructure;
  - the efficient level of retail costs that would be applicable in the area that Horizon Power services (both operating and capital costs);
  - the efficient net retail margin that would apply;
  - the efficient costs related to the national Mandatory Renewable Energy Target (**MRET**), including the expanded MRET if applicable; and
  - the efficient costs related to the proposed Carbon Pollution Reduction Scheme (**CPRS**), including the carbon intensity that should be applied in determining CPRS costs that would be incorporated into the cost reflective retail tariffs.

In undertaking the inquiry, the Authority recognises section 26 of the *Economic Regulation Authority Act 2003*, which requires the Authority to have regard to:

- the need to promote regulatory outcomes that are in the public interest;
- the long-term interests of consumers in relation to the price, quality and reliability of goods and services provided in relevant markets;
- the need to encourage investment in relevant markets;
- the legitimate business interests of investors and service providers in relevant markets;
- the need to promote competitive and fair market conduct;
- the need to prevent abuse of monopoly or market power; and
- the need to promote transparent decision making processes that involve public consultation.

1.2 Background to the Inquiry

At the present time, the prices most residential customers and small businesses in Western Australia pay for electricity do not cover the costs associated with providing

electricity to them. The Western Australian government has embarked on a programme to address this. By 1 July 2011, the overwhelming majority of customers living in the more densely populated areas of the State (largely in the South West) will pay electricity tariffs that reflect the costs of their electricity supply.[2]

The cost of supplying electricity to people living in remote rural areas, outside the South West, is high because of specific variables associated with these regions, such as climatic conditions, transport distances, fuel costs, limited economies of scale and regional cost factors influencing labour and material costs. Despite this, the Government's uniform tariff policy ensures that all residential and small business customers pay the same electricity tariffs regardless of where they live. Therefore, the electricity tariffs of customers living in remote Western Australia are subsidised and will continue to be subsidised beyond 2011.

This inquiry aims to establish Horizon Power's efficient level of costs and cost reflective tariffs to supply electricity to regional Western Australia so that the Government can determine the appropriate level of subsidy required. The subsidy, called the Tariff Equalisation Contribution, is funded from the retail tariffs paid by electricity customers living in the more densely populated areas of the State. This arrangement is explained in more detail in Section 2.3 below.

1.3 Review Process

This issues paper is intended to give sufficient background information to assist stakeholders to understand the nature of the issues under review and to facilitate debate around this inquiry. For the first public consultation stage of the inquiry, the Authority invites submissions from stakeholder groups, industry, government and the general community on the matters in the Terms of Reference. Submissions are due by 16 July 2010.

The remaining stages of the review process generally align with the regulatory approach to the inquiry outlined in Chapter 3. Over the period from May 2010 to October 2010, several elements of the inquiry will take place concurrently.

- The Authority will review Horizon Power's existing service standards and consider whether these are appropriate or if amendments are required (see Chapter 4).

- Technical consultants will be engaged to undertake an assessment of the efficiency of Horizon Power's capital and operating programmes and its procurement processes. The consultants will investigate whether the generation, network and retail solutions that Horizon Power utilises are the most appropriate for the purpose. The consultants will also compare Horizon Power's cost forecasts to actual costs incurred, to determine Horizon Power's ability to forecast accurately and then manage and monitor expenditure efficiently. This will help the Authority understand the accuracy of cost forecasting, so that the Authority can come to a view on the level of efficient costs to deliver a required level of service performance, and set any appropriate efficiency targets (see Chapter 5).

- The Authority will build a financial model to collate the individual 'building blocks' that make up the revenue requirement of an efficient regional electricity supply company. This is the methodology traditionally used in the economic regulation of utility industries and is explained in more detail in Section 3.2. These building

[2] Department of Treasury and Finance (2010), 2010/11 Budget Paper No. 3, Appendix 8, pp 231-232.

blocks are a return on capital, the return of capital (or depreciation) and operating and maintenance costs.

- From this, the Authority will review the allocation of costs between groups of customers and seek to determine cost reflective tariffs for each class of regulated tariffs. The classes of regulated tariffs are detailed in Table 6.1, on page 33. The Terms of Reference specifically ask the Authority to consider, when determining cost reflective tariffs, if there is scope to further divide tariff classes into smaller sub-groups (see Chapter 6, sections 6.2.1 and 6.2.2).

- As public submissions are received from stakeholders on the Terms of Reference, the Authority will consider and address the points raised.

The Authority will then combine these areas of investigation and comment into a draft report which is intended for publication in October 2010. Public submissions on the draft report will then be invited.

From October 2010 to March 2011 the Authority will consider the public submissions received and conduct further modelling and research in conjunction with Horizon Power to finalise its findings and recommendations in the final report, which will be presented to the Treasurer on 18 March 2011. The Treasurer will, in accordance with the Act, have 28 days to table the report in Parliament.

In accordance with section 45 of the Act, the Authority will act through the Chairman and members in conducting this inquiry.

1.4 How to Make a Submission

Submissions on any matter raised in this issues paper or in response to any matters in the Terms of Reference should be in both written and electronic form (where possible) and addressed to:

Inquiry into the Funding Arrangements of Horizon Power
Economic Regulation Authority
PO Box 8469
Perth Business Centre
PERTH WA 6849

Email: publicsubmissions@erawa.com.au
Fax: (08) 9213 1999

Submissions must be received by 16 July 2010.

Submissions made to the Authority will be treated as in the public domain and placed on the Authority's website unless confidentiality is claimed. The submission, or parts of the submission in relation to which confidentiality is claimed, should be clearly marked. Any claim of confidentiality will be dealt with in the same way as is provided for in section 55 of the Act.

The receipt and publication of a submission shall not be taken as indicating that the Authority has knowledge, either actual or constructive, of the contents of a particular submission. No duty of confidence will arise for the Authority where the submission, in whole or part, contains information of a confidential nature.

Further information regarding this inquiry can be obtained from:

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2 Background on Horizon Power and the Existing Funding Arrangement

The following sections outline the structure and operation of the electricity industry in Western Australia, provide a summary of the different roles of the individual corporations and how they interact with each other, and describe Horizon Power's operations and current funding arrangements.

2.1 Structure of the Electricity Industry in Western Australia

In 2003, the Government embarked on a programme to reform the State's electricity industry. These ongoing reforms were intended to create a competitive energy market to encourage private sector investment, increase the reliability of electricity supply and ultimately improve service for customers.

One of the Government's key reforms was to disaggregate Western Power Corporation, the vertically integrated, state-owned electricity supplier, into four Government Trading Enterprises (**GTEs**). A GTE, whilst still government owned, is managed through an independent Board. Typically, GTEs derive a substantial proportion of their revenue from the sale of their product or service and operate in markets increasingly open to competition from private enterprise.

The *Electricity Corporations Act 2005* established the following GTEs to become operational from 1 April 2006:

- Electricity Generation Corporation (Verve Energy);
- Electricity Networks Corporation (Western Power);
- Electricity Retail Corporation (Synergy); and
- Regional Power Corporation (Horizon Power).

Verve, Western Power and Synergy operate predominantly within the South West Interconnected System (**SWIS**). The SWIS is the largest interconnected electricity transmission and distribution network in Western Australia and stretches from Kalbarri in the north to Kalgoorlie to the east and Albany to the south. This network supplies electricity to homes and businesses in the more densely populated areas of the State.

In contrast, Horizon Power manages and is accountable for the entire electricity supply process outside of the SWIS.

2.1.1 Verve Energy

Verve Energy (**Verve)** is the state-owned electricity generator and Western Australia's largest energy producer. In 2008/09, Verve generated 71 per cent of the energy produced in the SWIS.[3]

Verve owns and operates four major power stations in Kwinana, Cockburn, Pinjar and Muja. Another power station in Collie is owned by Verve but operated by a private

[3] Verve Energy (2009), *Annual Report 2008-09*, p3.

company. Verve also owns a number of smaller power stations located in Mungarra, West Kalgoorlie, Geraldton and Kwinana, and it has a joint venture power station at Worsley alumina refinery near Collie. Verve's power stations in the SWIS have the capacity to produce 2,967 MW of electricity.[4]

Verve's generating portfolio also includes renewable energy sources, with wind farms in Albany, Esperance and Kalbarri and wind-diesel plants in Bremer Bay, Hopetoun, Denham and Coral Bay. It operates a solar facility in Kalbarri and a pilot biomass plant in Narrogin.

Verve participates in the Wholesale Electricity Market (**WEM**), established in September 2006, and competes with privately owned electricity generators in the SWIS to sell electricity to retailers. As part of the energy market reforms, a ceiling of 3,000 MW was imposed on Verve's electricity generation capacity. This was to encourage private companies to invest in, build and operate generating plant as demand for electricity increases.

The majority of Verve's electricity is contracted to Synergy, the state-owned electricity retailer.[5] Outside the SWIS, Verve sells power from wind and wind-diesel systems to Horizon Power.[6]

2.1.2 Western Power

Western Power is responsible for the transmission and distribution of electricity in the south west of Western Australia, including Perth. Consisting of nearly 88,000 km of powerlines within the SWIS, Western Power's electricity network is one of the largest isolated networks in the world. Western Power transports electricity from power stations to towns and cities and then distributes it to the 965,000 homes and businesses and 150,000 streetlights that are connected to the network.[7]

Western Power is responsible for maintaining this network and restoring power after interruptions. It is also tasked with developing and extending the network to meet the needs of customers and developers.

Within the SWIS, companies who produce electricity (generators) and companies who sell electricity (retailers) all have access to Western Power's network. Electricity retailers buy power from electricity generators and pay Western Power a fee for transporting that electricity through the network to their customers. These 'network charges' are determined as part of a regular review of Western Power's network access arrangements. To date, this review has been undertaken by the Economic Regulation Authority every three years.

2.1.3 Synergy

Synergy is responsible for purchasing and retailing electricity to industrial, commercial and residential customers in the SWIS. It is the largest electricity retailer and sells around 80 per cent of the electricity sold in the SWIS, receiving approximately $1.7 billion in

[4] Ibid.

[5] The actual percentage of electricity, generated by Verve that is sold to Synergy is commercial-in-confidence. Office of Energy, April 2010.

[6] Verve Energy (2009), *Annual Report 2008-09*, p3.

[7] Western Power (2009), *Annual Report 2008/09*, p10.

revenue each year.[8] Synergy's key activities include energy trading (purchasing), marketing, sales and customer service, billing and payment processing.

Synergy purchases the majority of the electricity generated by Verve. These purchases are covered by a Vesting Contract, established when energy market reforms were introduced in April 2006. The Vesting Contract protects Synergy by ensuring it retains a predetermined and fixed margin on customer sales, which is used to fund its retail operation. Over time, however, a 'displacement mechanism' in the Vesting Contract reduces the amount of electricity sold by Verve to Synergy. From 2007/08 to 2010/11, Verve's share of generation capacity is anticipated to fall from around 77 per cent to 60 per cent.[9] Synergy therefore has to source an increasing amount of its electricity purchases from the competitive wholesale market.

2.1.4 Horizon Power

Horizon Power is responsible for generating or procuring, transmitting, distributing and retailing electricity to residential, industrial and commercial customers and resource developments in regional Western Australia (outside the SWIS) and has the same compliance and reporting obligations as Verve, Western Power and Synergy. Horizon Power operates from a head office in Karratha in the Pilbara region and has additional offices in Kununurra, Broome, Port Hedland, Carnarvon, Esperance and Perth.[10]

Horizon Power generates around 13 per cent of the electricity utilised over its supply area and purchases the remaining energy (87 per cent) from privately-owned generators and a small percentage of renewable energy from Verve. This is then distributed and retailed to customers. Electricity generation is from various sources, including natural gas, diesel and renewable energy, such as wind farms and solar.

Horizon Power's customers range from people living in remote, isolated communities with less than 100 people, to residents and small businesses in regional towns, to major mining companies in the Pilbara region. Horizon Power currently delivers power to over 43,000 customer connection points, supplying more than 35,000 residential properties and more than 8,000 businesses and organisations.[11]

2.2 Horizon Power's Operations

2.2.1 Operating Area

Section 52 of the *Electricity Corporations Act 2005* defines Horizon Power's area of operations as;

> "limited to electricity systems in those parts of the State (the ***area of operations***) that are not served by the South West Interconnected System"

A map showing the retail supply areas of Synergy (the SWIS) and Horizon Power (the rest of regional Western Australia) is shown in Figure 2.1 below.

[8] Synergy (2009), *2008/09 Annual Report*, p7.

[9] Australian Energy Regulator (2009), *State of the Energy Market 2009*, p109.

[10] Horizon Power's website.

[11] Horizon Power (2010), update by email 12 May 2010. Approximately 85,000 people live in Horizon Power's supply area.

Figure 2.1 Supply areas for Synergy (SWIS) and Horizon Power

Geographically, Horizon Power's service area covers around 2.3 million square kilometres across the Kimberley, Pilbara, Gascoyne, Mid West and southern Goldfields (Esperance) regions, yet only around 4 per cent of Western Australians inhabit the area. This equates to 57.5 square kilometres of land area per Horizon Power customer,[12] compared to 0.4 square kilometres of land area per SWIS customer.

The physical remoteness of some communities and the climatic conditions experienced in parts of Horizon Power's supply area, cyclones in the north, storms in the south and dry and hot conditions in the interior, all pose issues for Horizon Power to manage in delivering a reliable, standardised service to its customers.

The Pilbara is a key region within Horizon Power's supply area and contains around one third of all Horizon Power's customers. The sizeable resource and mining industries based in the Pilbara ensure this is an area of strategic and economic importance to Western Australia. Around $139 billion worth of projects are either committed or under construction across the State during the next few years and approximately $96 billion of these are earmarked for the Pilbara.[13] Whilst adopting a more conservative growth scenario for internal planning purposes, Horizon Power has forecast that energy consumption in the region could double from current levels to approximately 10,500 GWh in 2015.[14] In recognition of the significance of the area, Horizon Power has developed the Pilbara Energy Plan to coordinate the growth and supply of energy to the region.

Electricity supply in the Pilbara is largely served by generating plants and a transmission and distribution network collectively called the North West Interconnected System (**NWIS**). The NWIS operates in the north west of the State around the industrial towns of Karratha and Port Hedland and their local resource and mining centres. The NWIS also extends inland to the mining centres of Paraburdoo and Newman. There is also a second, smaller, regional interconnected network between the towns of Kununurra and Wyndham in the Kimberley.

2.2.2 Generation

Generally, the electricity supply to larger towns is supplied by gas-fired power stations with the more remote communities tending to rely on diesel generators.

Whilst Horizon Power generates some of the energy used in its supply area, most is purchased from other generators via Power Purchase Agreements. Horizon Power's electricity generation and purchases for 2008/09 are shown in Table 2.1 below.

Table 2.1 Horizon Power's Electricity Generation and Purchases 2008/09

Item	MWh	%
Horizon Power generated electricity	58.4	13
Purchased electricity from other generators	407.8	87
Sub-total of total electricity available	466.2	100
Used in works	-3.3	-1
Sent out to customers	462.9	99

Source: Horizon Power, 2009 Annual Report, p45.

[12] Horizon Power (2009), *2009 Annual Report*, p2.

[13] Department of State Development (2010), *Prospect magazine (Dec 2009 – Feb 2010)*, pp 31-32.

[14] Horizon Power (2009), *2009 Annual Report*, p39.

Generation capacity currently installed on the NWIS is 400 MW, including capacity from private generators, such as Hamersley Iron's 120 MW generator plant at Dampier, Robe River's 105 MW plant at Cape Lambert and Alinta's 105 MW plant at Port Hedland.[15] A new 86 MW gas-fired power station has just been constructed in Karratha, which is connected to the NWIS.[16] Horizon Power purchases power from the generator, ATCO Power, under a long-term supply contract.

Additional generation capacity is added to Horizon Power's networks via the Aboriginal Remote Communities Power Supply Project, funded by the Office of Energy and the Commonwealth Department of Family, Housing, Community Services and Indigenous Affairs. The project involves constructing a new power station and upgrading the electricity network in the communities selected. Residents and small businesses then use pre-payment cards and meters to pay for electricity usage at uniform tariff rates.[17]

Horizon Power's customers use more electricity from renewable resources than customers in the SWIS. In 2008/09 the amount of renewable energy consumed by Horizon Power's customers was around 81 GWh or 9.7 per cent of total energy; the equivalent figure for the SWIS was 5 per cent.[18] Horizon Power's main renewable energy generators are shown in Table 2.2 below.

Table 2.2 Main Renewable Energy Generators in Regional Western Australia

Location	Generator	Capacity (MW)	Energy source
Ord River	Pacific Hydro Ltd	30.00	Hydro
Esperance – Ten Mile Lagoon	Verve/Horizon Power	3.60	Wind
Esperance –Nine Mile Beach	Verve/Horizon Power	2.02	Wind
Hopetoun	Verve/Horizon Power	1.20	Wind
Denham	Verve/Horizon Power	0.99	Wind
Coral Bay	Verve/Horizon Power	0.82	Wind

Source: Office of Energy Fact Sheet, Electricity from Renewable Energy – January 2010

Hopetoun, Esperance, Coral Bay, Exmouth and Denham all have wind farms connected to traditional generators. The towns of Marble Bar and Nullagine, located south east of Port Hedland, are currently each having a solar-diesel hybrid power station constructed. The solar energy systems can generate over 1 GWh of energy per year which will account for 60 per cent of the towns' daytime energy demand. The new power station in Marble Bar was commissioned in mid May 2010 and the Nullagine facility will be commissioned in late August 2010.[19]

2.2.3 Networks

Horizon Power maintains two interconnected networks as well as 37 isolated or islanded systems[20] that power towns and communities throughout regional Western Australia.

[15] Australian Energy Regulator (2008), *State of the Energy Market 2008*, p203.

[16] Horizon Power's website.

[17] Ibid.

[18] Office of Energy (2010), Fact Sheet "Electricity from Renewable Energy – January 2010".

[19] Horizon Power's website.

[20] Economic Regulation Authority (2009), *2008/09 Annual Performance Report Electricity Retailers*, p iv.

The two interconnected networks are:

- The NWIS which operates in the north west of the State around the industrial towns of Karratha and Port Hedland and their resource and mining centres. Although significantly smaller than the SWIS, the NWIS serves approximately one third of Horizon Power's customers. Horizon Power owns approximately 30 per cent of the NWIS network, the remainder is privately owned.

- The smaller regional interconnected network between the towns of Kununurra and Wyndham in the Kimberley. Horizon Power owns the 33 kV high voltage distribution line running between the two towns and Pacific Hydro owns the transmission line that runs to the Argyle Diamond Mine.

The larger islanded system powering Esperance and the surrounding rural regions services another third of Horizon Power's customers.

The remaining third of Horizon Power's customers reside in towns and communities not connected to these grids. Power is delivered to these communities typically via a gas or diesel powered generator and a local distribution network. A summary of Horizon Power's current network assets is shown in Table 2.3 below.

Table 2.3 Horizon Power's Current Network Assets as at June 2009

Network Assets		
Transmission lines (km)		455
Distribution lines (km)	High voltage overhead	2,461
	High voltage single phase	2,704
	Low voltage overhead	1,809
Underground distribution cable (km)	High voltage	387
	Low voltage	596
Total transformer capacity (kVA)		533,426
Number of streetlights		13,383

Source: Horizon Power, 2009 Annual Report, p46

Horizon Power is updating some of its islanded systems through the Town Reserves Regularisation Project. This State-based project was established by the Department of Housing and Works in consultation with the Aboriginal and Torres Strait Islander Commission and the Department of Indigenous Affairs. The Town Reserve Regularisation Project aims to improve access for town based Aboriginal communities to equitable water, sewer and power services provided by state utilities. Horizon Power's role in the project is to:

- upgrade the existing distribution network in communities;

- upgrade the internal house wiring (where required) of residential dwellings on behalf of the Department of Housing and Works;

- establish a direct retail arrangement with customers including the introduction of a pay-as-you-go electricity system using pre-payment meters; and

- provide an education programme that informs all community members and stakeholders on work-site safety, pre-payment meter usage, energy efficiency, rebates and charges, reporting faults and the project schedule.

In the first phase of the project (2005 to 2007), Horizon Power regularised power supplies in eleven communities in the Kimberley region and in the second phase (2009), this was extended to a further eight communities.[21]

2.2.4 Retail

Horizon Power has 43,000 customer properties connected to its numerous networks, comprising 35,000 residential properties and over 8,000 businesses and organisations. Customers can range from remote isolated communities, to regional towns, to large mining developments. Horizon Power gains new retail customers via the Town Reserves Regularisation Project and Aboriginal Remote Communities Power Supply Project (mentioned previously) and through newly built properties being added to existing or extended networks.

Under the Government's Uniform Tariff Policy, all residential and small business customers across the State pay the same charges for their electricity usage. Because of the particular operational variables inherent in Horizon Power's supply area, it costs more to supply power to regional Western Australia than is collected in tariff revenue. Therefore without Government intervention in the form of subsidies, Horizon Power would become more unprofitable the more statutory customers it connects. This charging and subsidy arrangement is explained in Section 2.3 below.

The uniform tariffs Horizon Power can charge its customers are determined by the *Energy Operators (Regional Power Corporation) (Charges) By-Laws 2006 – Schedule 1;* an identical schedule exists for Synergy's uniform tariffs. Any increases in these tariffs are determined by the Government and published in the *Government Gazette*. The tariffs are organised in relation to the types of customers who are eligible for them, such as residential customers and small, medium and large business customers. Most tariffs are comprised of two parts, a daily fixed supply charge and a volumetric charge linked to the amount of electricity consumed. More information on Horizon Power's current tariffs is given in Chapter 6.

In 2009, the Minister for Energy approved increases in uniform tariffs and in March 2010 announced further increases to take effect in April and July 2010. These increases are shown in Table 2.4.

[21] Horizon Power's website

Table 2.4 Percentage Increases in Uniform Tariffs in 2009 and 2010

Tariff	April 2009 Actual	July 2009 Actual	April 2010 Approved	July 2010 Approved
Residential	10%	15%	7.5%	10%
Small businesses	5%	10%	7.5%	10%
Medium businesses	10%	10%	7.5%	10%
Large businesses	10%	10%	7.5%	10%
Charitable organisations	5%	10%	7.5%	10%
Charitable organisations with accommodation	5%	10%	7.5%	10%
Commonwealth and foreign governments supplied through the NWIS	10%	10%	7.5%	10%

Source: Minister for Energy's website and 2010/11 Budget Paper No. 3, Appendix 8, p233

Horizon Power provides a range of rebates and subsidies for residential customers (listed in Appendix B).

In addition, Horizon Power provides assistance to customers to manage their bills and any tariff increases by:

- offering customers a variety of ways to pay their electricity bill including BPAY, online using a credit card, by mail or in person at a Post Office, direct deduction from Centrelink payments or by budget card;
- offering extended payment periods, shorter billing cycles or direct debit arrangements;
- coordinating the various rebates and subsidies available for residential customers; and
- administering the Hardship Utilities Grant Scheme (HUGS). This is a State Government scheme which provides financial assistance to help people with financial difficulties pay their water, gas and electricity bills and avoid disconnection of their supply.

Horizon Power also provides advice to customers on ways to improve their energy efficiency through its 'Betterways' consumer awareness programme and website. A number of demand side management options have been trialled for commercial customers, for example, management of peak loads for major businesses in Broome and energy audits of 20 businesses in the Mid-West.

Customers interested in renewable energy can participate in the Renewable Energy Buy−Back Scheme (**REBS**) or GreenSelect. Under REBS, customers can generate electricity in their own homes from renewable energy sources, such as solar panels, wind turbines or micro-hydro systems. Any electricity not consumed can be sold back to the network. Alternatively, customers without generation facilities at home can opt for GreenSelect. In this scheme an additional 5.5 cents is added to the unit cost of electricity consumed. Customers then choose whether 50 per cent or 100 per cent of their yearly

consumption is generated from a renewable source. GreenSelect is audited by the National GreenPower Accreditation Programme which guarantees that Horizon Power only uses government approved renewable energy sources.[22] The additional charges generated from customers opting for GreenPower help investment in the renewable energy sector and increase demand for energy from renewable sources.[23]

2.3 Existing Funding Arrangements for Horizon Power

The main sources of Horizon Power's revenue (in $'000s), shown in Figure 2.2 are:

- uniform customer tariffs;
- other sources of revenue and income - from gas sales, developer and customer contributions;
- Customer Service Obligation (**CSO**) payments for specific projects or customer rebate schemes. From 2009/10 to 2010/11, CSO payments will include a 'tariff adjustment' payment from Government. This is to cover the difference in the economic cost of supplying electricity in the SWIS compared to the revenue collected from uniform tariffs.[24] These payments are shown in Table 2.6 below.
- the Tariff Equalisation Contribution, paid by customers in the SWIS. This is to recover the additional costs of supplying electricity in Horizon Power's supply area compared to the economic cost of electricity supply in the SWIS.

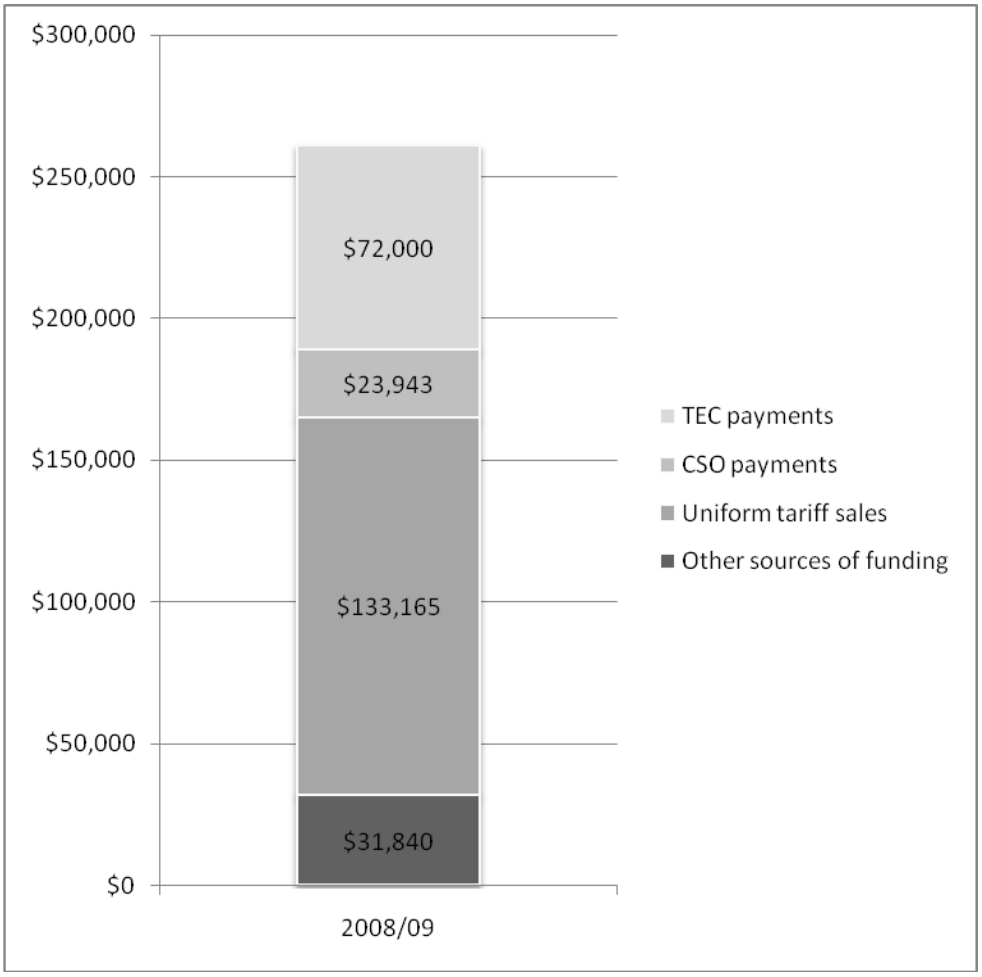
Each of these is discussed below.

[22] Horizon Power (2009), *2009 Annual Report*, pp 32-33.

[23] http://www.greenpower.gov.au/australias-greenhouse-challenge.aspx

[24] Prior to 2009/10, this shortfall in funding was borne by Horizon Power as reduced profitability or increased debt.

Figure 2.2 Sources of Funding for Horizon Power in 2008/09 in ($'000s)



Source: Horizon Power Annual Report 2008/09

2.3.1 Uniform Tariffs

Under the Western Australian Government's uniform tariff policy, customers in regional areas of the State pay the same tariffs for their electricity as customers in the SWIS, even though the costs of providing electricity to regional customers are higher than those in the SWIS.

2.3.2 Tariff Equalisation Fund

The difference between Horizon Power's costs and the economic costs of providing electricity to customers in the SWIS is funded through the Tariff Equalisation Fund (**TEF**). The TEF is funded through the Tariff Equalisation Contribution (**TEC**) included as part of Western Power's network charges to its distribution customers. Western Power's wholesale distribution customers, the largest of which is Synergy, pay their network charges out of the retail revenue collected from households and small to medium business customers in the SWIS.

In 2009, the Government gave notice that over the next two years, the TEC will be increased by $59 million to $181.2 million (see Table 2.5 below).

Table 2.5 Gazetted Tariff Equalisation Contribution Amounts from 2009/10 to 2011/12

Year	Tariff Equalisation Contribution (TEC)
2009/10	$122.1 million
2010/11	$175.7 million
2011/12	$181.2 million

Source: Government Gazette No.153, 25 August 2009, p3325; and Government Gazette No.208, 17 November 2009, p4639.

The Authority, in its Final Determination on Western Power's access arrangement for the SWIS for 2009/10 to 2011/12, has allowed the gazetted TEC amounts to be added to Western Power's target revenue and recovered through network charges.[25] However, the Authority noted the increase in the size of the TEC, from a total of $213.3 million (in nominal dollars) for the previous three-year access arrangement, to $479.0 million for the second access arrangement period.[26] The Authority also noted that the TEC constitutes 23 per cent of the reference tariff for distribution network services on the SWIS, and results in an annual average increase in average distribution network tariffs of CPI + 17.7 per cent, compared with CPI + 2 per cent if the TEC was to be excluded.

A proportion of the costs of the TEC are effectively passed onto Verve. Under the Vesting Contract between Verve and Synergy, Verve receives the residual of Synergy's revenue after all other costs (including the TEC) have been deducted.[27] The absence of cost reflective retail tariffs along with limitations within the Vesting Contract have contributed to Verve's debt levels increasing to $1,296 million in 2008/09 from $1,033 million in 2007/08.[28] The remainder of the TEC costs are borne by other wholesale market participants.

2.3.3 CSOs

Currently, tariffs in the SWIS are below the economic cost of providing electricity. Prior to the 2009 increases, residential electricity tariffs in Western Australia had not increased since 1997/98, except for the introduction of GST. Furthermore, tariffs for businesses did not increase between 1991/92 and 2007/08. This is despite the costs of electricity provision having increased over these years.

The difference between the economic costs of supplying electricity in the SWIS and Horizon Power's revenue from uniform tariffs was borne by Horizon Power until 2009/10, thereby reducing its profitability and increasing its debt. As Horizon Power is Government owned, this debt and associated costs were effectively borne by taxpayers.

Early in 2009, the Office of Energy, in its final report on the Electricity Retail Market Review, recommended that retail tariffs be increased to reflect electricity supply costs

[25] Economic Regulation Authority (17 December 2009), *Final Decision on Proposed Revisions to the Access Arrangement for the South West Interconnected Network, Submitted by Western Power,* paras.488-497.

[26] Horizon Power has informed the Authority that there was a change in the calculation of the TEC amount between the two periods which contributes to the observed increase in the level of the TEC. Email from Horizon Power 30 April 2010.

[27] WA Government (January 2009), "Submission to Commonwealth Grants Commission".

[28] Verve Energy (2009), *Annual Report 2008-09*, Notes to the Financial Statements, p34. Debt has been taken to be the sum of utilised unsecured funding facility from WA Treasury Corporation and finance lease liabilities.

starting from 2009/10.[29] The Government accepted the need to move towards cost reflective prices and announced price increases to households of 10 per cent in April 2009, followed by 15 per cent in July 2009. In March 2010, the Government approved a further two increases of 7.5 per cent and 10 per cent to take effect in April and July 2010.

Horizon Power and Synergy now receive an explicit CSO payment to fund the shortfall in revenue whilst uniform retail tariffs move upwards to the cost reflective rates that represent electricity supply in the SWIS.

Horizon Power now receives CSO payments for the following programs:

- Aboriginal and Remote Community Power Supply Project, for electricity supply to particular remote communities. This project is funded 50/50 between State and Commonwealth governments;
- Coral Bay Electricity Supply, to provide uniform electricity tariffs in Coral Bay;
- Pensioner and Seniors concession rebates;
- Seniors' air-conditioning rebates;
- Tariff Migration – this compensates Horizon Power for the transfer of government departments and trading enterprises from the previous 'government' electricity tariffs (N2/P2) to the lower business electricity tariff (L2);[30] and
- Tariff Adjustment Payment – to fund the 'glide path' which moves uniform tariffs to the level of cost reflective tariffs in the SWIS.

The amounts of these payments for the period 2008/09 to 2012/13 are shown in Table 2.6 below.

Table 2.6 Community Service Obligation Payments for Horizon Power ($,000s)

Details of CSO Payment	2009/10 Estimated Actual	2010/11 Estimated Budget	2011/12 Forward Estimate	2012/13 Forward Estimate	2013/14 Forward Estimate
Aboriginal and Remote Community Power Supply Project (Stages 1&2)	$10,916	$12,173	$12,828	$12,633	$13,295
Coral Bay Electricity Supply	$2,649	$2,539	$2,523	$2,573	$2,770
Pensioner/Senior/Concession Rebates	$550	$815	$975	$1,054	$1,142
Seniors' Air Conditioning Rebate	$235	$274	$336	$354	$376
Tariff Migration	$8,779	$7,828	$7,493	$7,707	$7,603
Tariff Adjustment Payment	$13,870	$12,646	$0	$0	$0
Total CSO Payments	**$36,999**	**$36,275**	**$24,155**	**$24,321**	**$25,186**

Source: 2010/11 Budget Paper No. 3, Appendix 8, p 237.

2.3.4 Commercial Customers

The deregulation of the Western Australian electricity market began in 1997, with customers using over 10 MW of electricity a year able to choose their electricity supplier.

[29] Office of Energy (January 2009), *Report to the Minister for Energy, Electricity Retail Market Review*, p1

[30] Department of Treasury and Finance (2005), "2004/05 Budget Paper No.3", Appendix 9

Deregulation also enables private energy generators and retailers to compete with Horizon Power to supply and sell electricity to residential and commercial customers. Since April 2006, customers whose annual demand is greater than 50 MWh per annum on a single site have been able to choose their electricity supplier.[31] These are called 'contestable customers'. However, no other retailers currently offer services to contestable customers in Horizon Power's supply area and consequently, Horizon Power remains the monopoly supplier. The main reasons for this situation are the high operating costs in Horizon Power's supply area, the relatively low density of customers and the fact that, in certain circumstances, Horizon Power is obliged to offer tariffs to customers that are not cost reflective.

Contestable commercial customers using less than 160 MWh per annum pay the standard regulated tariffs that apply to them (see Table 6.1). Horizon Power has advised that this threshold is likely to increase to 4.38 GWh in the near future.[32] These tariffs do not reflect the actual cost of providing electricity supplies to customers and are subsidised through CSOs and the TEC. A breakdown of Horizon Power's customer base is given below in Table 2.7.

Table 2.7 Analysis of Horizon Power's Customer Base

Type of customer	Non-contestable (< 50 MWh pa)	Contestable (> 50 MWh pa)	Total	%
Number of connections	N/A	N/A	41,000	100
Small use customers (less than 160 MWh per annum)				
- Domestic	30,790	685	31,475	
- Commercial	4,789	1,116	5,905	
Sub-total	35,579	1,801	37,380	91.2
Large use commercial customers (greater than 160 MWh per annum)	N/A	3,620	3,620	8.8

Source: Horizon Power, 2009 Annual Report, p5 and Economic Regulation Authority, 2008/09 Annual Performance Report Electricity Retailers, p3

Across Australia, the large commercial electricity market is considered competitive with few barriers to entry. The large commercial and industrial customers in these markets usually have good market intelligence regarding electricity supply and pricing and enough bargaining power to effectively negotiate efficient contracts.

The situation is slightly different in regional Western Australia, which is the only State that still regulates tariffs for large consumers.[33] Outside of the SWIS, the lack of retailers willing to compete for large customer contracts would suggest that barriers to entry still exist, in which case some form of tariff regulation may be required.

In reality, three scenarios currently exist.

- Customers consuming up to 160 MWh per annum. Horizon Power has a statutory obligation to connect and offer uniform tariffs to these customers, if they are situated within 100 metres of an existing network.

[31] Horizon Power's website. Annual consumption of 50 MWh roughly equates to a daily average consumption of around 137 or more units per day and an annual bill of over $8,000.

[32] Horizon Power (2010), e-mail from Horizon Power 12 May 2010.

[33] Office Of Energy (January 2009), *Electricity Retail Market Review – Final Recommendations Report Review of Electricity Tariff Arrangements*, p34.

- Customers consuming 160 MWh (soon increasing to 4.38 GWh) per annum. Horizon Power can now offer uniform tariffs to these customers but has no statutory obligation to provide a new electricity connection if costs are prohibitive.

- Customers consuming over 4.38 GWh per annum. Horizon Power negotiates individual supply contracts. This situation applies to 12 to 18 customers.

3 Regulatory Approach for the Inquiry

The regulatory approach to be taken for this inquiry will construct a 'virtual company' which simulates the business model of a regional power corporation, such as Horizon Power, and estimates the cost levels of an efficient service provider. The model and its inputs will then be subject to adjustments reflecting the varied and specific operating conditions of Horizon Power, such as geography, climate, demographics and history.

The sections below outline the individual stages of the process:

- *Standards of Service* − identifying appropriate standards of service performance;
- *Revenue Requirement* − determining the individual elements that combine to generate a revenue requirement to fund this level of performance; and
- *Cost Reflective Tariffs* − appropriately allocating costs across customer classes to generate cost reflective tariffs.

3.1 Standards of Service

It is important to determine an appropriate standard of service for electricity customers and the minimum level of funding necessary to deliver this service. By not linking costs to service, there is a risk that attempts to increase efficiency by reducing costs could be at the detriment of service to customers.

Any future warranted improvements to service standards can then either be met out of ongoing operational efficiencies or additional income which could include increased tariffs or Government subsidies.

There is scope within the regulatory framework to financially reward or penalise a service provider for over or under performance against benchmarked standards of service. This is explored further in Section 4 below.

3.1.1 Horizon Power Specific Issues

Horizon Power currently reports on a number of performance standards as a condition of its licence. These performance standards are explained in detail in Section 4.1. At the present time not all of these service standards lend themselves to the application of a financial performance incentive. For example, as a condition of its operating licence Horizon Power reports on the total length of interruptions to customer premises in specified areas of the State. This is all interruptions regardless of whether Horizon Power is responsible for the interruption or not. These issues are discussed in more detail in Section 4 below.

3.2 Determining the Revenue Requirement

Once appropriate service standards have been established, the next stage in this inquiry will be to determine a revenue requirement for the virtual regional power corporation based on an 'efficient' level of costs. These are the costs that would be incurred by a prudent service provider acting efficiently and in accordance with good industry practice.

This is referred to as the 'building block' approach as each cost component is calculated individually to determine the total revenue requirement. This is the typical methodology adopted in most regulated industries including water, gas and electricity.

The revenue requirement is calculated using the building block method as follows:

Revenue requirement	=	return on capital *plus*
		return of capital (depreciation) *plus*
		operating and maintenance costs
where the return on capital	=	rate of return[34] *multiplied by*
		the regulated asset base (which is rolled forward each year by adding capital expenditure and subtracting depreciation).

A return on capital is included to ensure that the service provider receives a return on its investments sufficient to provide it with an incentive to continue to invest. The return of capital, also referred to as depreciation, allows the business to recover capital invested over the life of the investment. Operating and maintenance costs are recurrent costs required for the ongoing operation of the business.

3.2.1 Horizon Power Specific Issues

Some changes to this standard approach may be required to reflect Horizon Power's specific situation.

Horizon Power has a right to expect a return on the value of its assets equal to the cost of capital associated with its regulated activities. Assets are often financed by a combination of debt and equity, the proportion of one source of funding to the other is known as 'gearing'. Therefore, the return from an asset must compensate both the providers of debt finance and equity holders. For this reason, the term "Weighted Average Cost of Capital" (**WACC**) is often used to refer to the average cost of debt and equity capital, weighted by the proportion of debt and equity that reflects a company's financial gearing. The rate of return determined by the Authority will take into account Horizon Power's gearing ratio and the market costs it faces in sourcing debt and equity financing for investment purposes.

It is likely that Horizon Power's initial regulated asset base will be determined at an agreed point in time, anticipated to be when Horizon Power was formed in April 2006. This is when assets were transferred to Horizon Power from the former Western Power Corporation. This 'value' will then be rolled forward to the present day by adding capital expenditure and subtracting depreciation.

Given the time constraint on the inquiry, it is unlikely that the regulatory asset base will be completely re-valued. Instead, the Authority could determine a valuation of the initial regulatory asset base by reviewing Horizon Power's historical asset records and capital investment processes since formation.

[34] The calculation of the rate of return is determined by multiplying the regulatory asset base by the relevant Weighted Average Cost of Capital, a combination of the cost of debt and equity for the service provider, compared to market rates.

For Horizon Power's depreciation charge, the technical consultants engaged by the Authority will be asked to provide advice on the appropriateness of the assumptions Horizon Power makes with regard to asset lives and depreciation methodology.

The technical consultants will also advise the Authority on the level of 'efficient' operating and maintenance costs based on the investigations they conduct into Horizon Power's operating cost processes. If forecast operating and maintenance cost levels are not considered efficient then a decision will be required as to what the efficient level is. The inflation and cost escalation factors that contribute to operating and maintenance costs will need to be considered. These could be an issue for Horizon Power given the increased costs it may face as a result of maintaining operations in remote areas and competing with the resources sector for staff and materials.

The anticipated costs associated with the CPRS and the MRET policies will be provided for in the model to determine their influence, should they eventuate, upon the level of the revenue requirement and therefore cost reflective tariffs. Given the underlying uncertainty surrounding both policies the Authority intends to adopt the approach to modelling CPRS/MRET costs adopted by the Independent Pricing and Regulatory Tribunal (**IPART**) in New South Wales. This will involve calculating the revenue requirement and modelling cost reflective tariffs with additional CPRS and MRET costs included and then again with these costs excluded. This is explained in more detail in Section 5.2 below.

The Authority will determine the level of each building block when calculating the efficient revenue requirement for Horizon Power for the period 2009/10 to 2013/14. From this, the Authority will derive the level of cost reflective tariffs for each tariff class. Horizon Power's tariff classes are described in Table 6.1, later in this paper.

The shortfall between Horizon Power's efficient revenue requirement and the actual revenue it collects from customers will inform the Government's decision on the size of the TEC subsidy Horizon Power receives.

3.3 Cost Reflective Tariff Design

Electricity pricing involves a number of important issues. From an economic efficiency perspective, prices should encourage efficient use of the infrastructure supplying the electricity; namely the generation, transmission and distribution system. Prices also need to encourage efficiency in the use of the underlying energy resource.

To encourage economic efficiency it is important to make prices reflect the costs of supply and delivery. Consumers generally need to be aware of the cost of the service and the cost implications of consuming more electricity rather than less.

The minimum price that would encourage economic efficiency in consumption is equivalent to the 'avoidable' or direct costs. Direct costs relate to the costs involved in supplying electricity, such as generation, network, distribution and retail costs, including meter reading and billing, and an allowance for replacing the current infrastructure.

The direct cost pricing principle is consistent with the view that society is better off by only providing services to those customers who are willing to pay, at least, the costs that would be avoided if the service were no longer provided. This is designed to ensure customers value the service being provided. It is also an important measure for establishing whether alternative service providers could provide the service more economically. If customers are not willing to pay the avoidable costs then this indicates that they prefer a lesser quality service, or they would prefer to make alternative arrangements for their electricity

supply, such as switching to an alternative supplier or they would be willing to move to live closer to a cheaper electricity supply source.

This is important when considering growth in and of existing networks. Communities with fairly stable population and consistent demand will have a direct cost based on organic growth rates and the operating, maintenance and replacement costs of the existing infrastructure. Any growth or demand for electricity in addition to the historical level should have the costs associated with this growth allocated to the customers driving it: the 'user pays' principle. Therefore if existing customers increase their demand, for whatever reason, the direct cost will increase to recognise the capital and operating costs associated with enhancing the existing system to meet this increased level of demand.

For example, a new residential sub-development on the outskirts of an existing community will experience demand for electricity from the new customers connected to the network extension. In this situation the direct costs of operating the extended network will increase. This increase will include the costs associated with physically connecting to the existing network, any growth or capacity enhancement needed within the extended system to cover the new demand and the capital costs and operating costs associated with the extended network. The new customers connected to the system should bear at least the additional cost that they impose on the system, so that their decision to move to the town fully reflects the costs of doing so.

However, prices based on direct or avoidable costs would not cover all the costs Horizon Power incurs in supplying electricity to customers. The additional costs incurred include corporate overheads and depreciation. Horizon Power also needs to make a reasonable 'return' on its investment in infrastructure to ensure continued investment. If these additional costs are not covered by tariff revenue, this will have a detrimental effect on the underlying financial viability of Horizon Power and the service provider will have no incentive to invest in future electricity supply in the region.

Alternatives that can be considered when formulating electricity pricing structures are explained below:

- *Direct Cost Pricing* – customers in a particular district would be charged an amount that at least covered the direct costs that Horizon Power incurred in providing an electricity service to that district. As noted above, direct costs relate to the costs involved in supplying electricity such as generation, network, distribution and retail costs, including meter reading and billing.

  Such prices would not cover all the costs involved in electricity supply as Horizon Power incurs corporate overheads, depreciation and needs to make a reasonable 'return' on its investment in infrastructure. These costs need to be recovered but not necessarily from one particular class of customers over another. The difference between revenue generated by direct cost pricing on electricity use, and the revenue requirement calculated in the building block approach, can be recouped through a fixed (non-volumetric) charge.

- *Long Run Marginal Cost (**LRMC**) Pricing* – Customers could be charged for each additional unit of electricity at a price that is related to the LRMC of providing that service. The LRMC is calculated to reflect the cost of supplying an additional unit of electricity. It is a forward-looking cost in that it reflects the cost of supplying an additional unit of electricity through new source (generation) development and/or demand management. The difference between revenue generated by LRMC pricing on electricity use, and the revenue requirement calculated in the building block approach, can be recouped through a fixed (non-volumetric) charge.

Given that LRMC pricing is forward-looking, it assumes that all costs are variable in the long term. However, in reality, costs are certainly fixed in the short term as the service provider is operating with its existing infrastructure. Demand builds until an increase in capacity is necessary. Large amounts of capital investment are required to increase the capacity of an electricity supply network, such as building a new power station, significantly extending an existing network or building a new network. Using LRMC pricing ensures a smoother price path rather than if prices were reflective of the actual and irregular capital expenditure programme.

3.3.1 Horizon Power Specific Issues

Previous Governments, through adopting a uniform tariff policy, have chosen to not have all customers meet the direct costs of supplying them with electricity nor to have all customers pay a usage charge that reflects LRMC. Whilst the present Government is taking steps to address this, as outlined in Section 2.3.3 above, the future increased level of uniform tariff revenue is still unlikely to cover the cost of supplying electricity to Horizon Power's customers. Determining the revenue requirement for Horizon Power will identify the continued level of subsidy the company needs to finance its functions.

In accordance with the Terms of Reference, the Authority will determine cost reflective tariffs for each of the current retail tariff classes and investigate whether costs can be further allocated into sub-areas where similar cost structures exist.

Issues for this inquiry

1) Do you think that the regulatory approach to be taken is appropriate? If not, what alternative methodology should be considered?

2) Which tariff design approach, 'direct cost pricing' or 'LRMC pricing' is preferable to generate the cost reflective pricing structure and why?

4 Horizon Power's Service Standards

This chapter considers service standards in more detail. It covers Horizon Power's existing reported service standards and compares these with other service providers in Western Australia and the Eastern States. Section 4.3 reviews the recommendations in the Authority's earlier report on Horizon Power's performance standards and identifies how these could inform the inquiry.[35]

4.1 Current Service Standards

As a condition of its Integrated Regional Licence, Horizon Power has to provide any information the Authority requires to fulfil the Authority's functions under the *Electricity Industry Act 2004*. The Authority has specified the performance data it requires in accordance with Codes of Conduct issued by the OoE that place clear minimum standards on electricity suppliers. These codes are:

- *Electricity Industry (Network Quality and Reliability of Supply) Code 2005*. The performance measures associated with this code cover:
  - Customer Connections: information about the total number of connections on the distribution network and the proportion of new connections that have been established outside the prescribed time frames.
  - Network reliability: information about the frequency and duration of supply interruptions on the distribution network.
  - Street Lighting: measures the proportion of faulty streetlights that are repaired by a distributor within the prescribed standards.
  - Customer Service: information about customer satisfaction with the service provided by the distributor as measured by the level of complaints and customer contact centre responsiveness.
  - Compensation payments: information about the number of compensation payments made by distributors for failing to meet the service standards prescribed.
- *Code of Conduct for the Supply of Electricity to Small Use Customers 2008*. The performance measures associated with this code cover:
  - Affordability: information about the number of customers accessing special billing arrangements such as instalment plans, shortened billing cycles, being granted more time to pay a bill and the level of direct debit plan terminations.
  - Access: information about the rates of disconnection and reconnection of customers for non-payment of bills, with particular attention being paid to customers on instalment plans, receiving a government funded concession and those who have been previously disconnected within the past 24 months.

[35] Economic Regulation Authority (2008), Recommendation Report: Review of Regional Power Corporation's Code Standards.

- Customer Service: information about customer satisfaction with the service provided by their retailer, as measured by complaints and customer contact centre responsiveness.

- Compensation Payments: information about the number of compensation payments made by retailers for failing to meet the service standards prescribed.

If Horizon Power performs consistently badly against any of the above performance indicators and fails to provide a plan to restore performance to acceptable levels, the Authority can under the *Electricity Industry Act 2004*:

- serve a notice stating what has to be corrected and by when; and if this fails
- send a letter of reprimand, apply a monetary penalty up to $100,000 or resolve the problem themselves and charge the cost of this back to the licensee; or ultimately
- cancel the licence.

The Authority also asks Horizon Power, and other electricity suppliers, to report on the more widely used electricity industry standards of SAIDI and SAIFI. These are:

- SAIDI (System Average Interruption Duration Index) – the total of all customer interruptions in minutes divided by the total number of customer connections averaged over the year.
- SAIFI (System Average Interruption Frequency Index) – the total number of interruptions divided by the total number of customer connections averaged over the year.

These two measures differ from the supply interruption measures in the reliability code because certain outages, outside of the control of the electricity supplier, can be excluded.

The Authority publishes the information it collects in Annual Performance Reports; one for Electricity Distributors and one for Electricity Retailers.[36]

Horizon Power also reports against a set of key, critical business outcomes that have been established by Horizon Power to help it achieve its business objectives. These business outcomes are listed in Horizon Power's annual Statement of Corporate Intent which can be found on its website.[37]

Selected distribution performance standards for Horizon Power and Western Power are shown in Table 4.1 below.

[36] Copies of these reports can by found on the ERA website www.erawa.com.au.

[37] Horizon Power (2010), Statement of Corporate Intent 2010, p8.

Table 4.1 Selected Network Performance Standards for Horizon Power and Western Power 2008/09

Service provider	Other areas of state Reliability code measure – average interruption per customer	Total network Overall distribution SAIDI	Total network Normalised distribution SAIDI
Horizon Power	448 minutes	336 minutes	184 minutes
Western Power	590 minutes	399 minutes	225 minutes

Source: Economic Regulation Authority, 2008/09 Annual Performance Report – Electricity Distributors, pgs 9 and 12

The reliability code measure for supply interruptions is the average total length of interruptions to supply. That is total length of network interruptions divided by total number of customers. This is shown here calculated over 'other areas of the state' as Horizon Power does not supply any customers in the other defined areas, namely Perth CBD and other urban areas. This is calculated as an average of the previous four years of data.
Overall distribution SAIDI includes all sustained interruptions including transmission, and planned and unplanned load shedding.
Normalised distribution SAIDI excludes the following outages:

- not exceeding a threshold of 3 minutes;
- caused by exceptional or third party events;
- transmission outages, directed load shedding
- where the distributor cannot reasonably be expected to mitigate the event by prudent asset management

It is important to note that the network reliability code requires distributors to report on all supply interruptions, regardless of whether or not these are within their control. There is no methodology to exclude issues that are beyond the control of the service provider, such as extreme weather events or the actions of third parties. This methodology to exclude events is incorporated into the normalised distribution measure of SAIDI, which is the standard adopted by the majority of distribution service providers. As can be seen from Table 4.1 above, once outages outside the control of the service provider are excluded, the average supply interruption per customer reduces considerably. In the case of Horizon Power, the reduction is from 336 minutes per customer per year to 184 minutes per customer per year.

Selected retail performance indicators for Horizon Power and Synergy are shown in the two tables below. All retail performance standards relate to 'small use customers' which are those residential and commercial customers using less than 160 MWh of electricity per annum.

Table 4.2 shows complaint data with both retailers having billing as the major complaint issue amongst both residential and commercial customers. Synergy and Horizon Power both attribute this to the recent significant tariff increases and the economic climate making customers more sensitive to the size of their electricity bills.

Table 4.2 Selected Retail Performance Standards for Horizon Power and Synergy 2008/09 - Complaints

Retailer	Total number of complaints	Complaints per 100 customers	Complaints related to billing (% of total)	Complaints related to marketing (% of total)	Complaints related to transfers (% of total)	Complaints related to other (% of total)
Horizon Power						
- residential customers	124	0.40	51.6	0.8	0.0	47.6
- commercial customers	25	0.42	52.0	0.0	0.0	48.0
Synergy						
- residential customers	1903	0.22	83.8	8.5	0.0	7.7
- commercial customers	127	0.15	93.7	0.8	0.0	5.5

Source: Economic Regulation Authority, 2008/09 Annual Performance Report – Electricity Retailers, pgs 15-17

Table 4.3 shows data on the number of disconnections. Approximately half of the residential disconnections for both companies were reconnected within seven days, this falls to around a quarter to a third for commercial customers.

Table 4.3 Selected Retail Performance Standards for Horizon Power and Synergy 2008/09 – Disconnections for Failure to Pay a Bill

Retailer	Number of disconnections	Disconnection as percentage of customers
Horizon Power		
• residential customers	615	1.95
• commercial customers	33	0.56
Synergy		
• residential customers	4,188	0.49
• commercial customers	165	0.20

Source: Economic Regulation Authority, 2008/09 Annual Performance Report – Electricity Retailers, pgs 8-10

This is the fourth year the Authority has published performance data for electricity suppliers in Western Australia.

4.2 Other Electricity Suppliers' Service Standards

4.2.1 Western Australia

Synergy, as a retail licence holder, reports on the same performance indicators as Horizon Power, in accordance with the *Code of Conduct for the Supply of Electricity to Small Use Customers 2008*, with the same consequences for continual and uncorrected underperformance.

Western Power reports on the performance of the transmission and distribution elements of its network as part of its access arrangement.[38] The access arrangement, in turn, is based on the *Electricity Networks Access Code 2004*. The performance indicators that are included in Western Power's access arrangement are listed below.

- Distribution performance indicators:
  - SAIDI; and
  - SAIFI.
- Transmission performance indicators:
  - Circuit availability – the percentage of total possible hours available;
  - System Minutes Interrupted – the number of minutes that power is available but cannot be sent out because of faults on the transmission equipment; and
  - Loss of Supply Events – the number of incidents where loss of supply exceeds 0.1 or 1.0 system minutes. This only relates to unplanned outages.

At Western Power's next access arrangement review, which begins in October 2011, the Authority will apply a financial penalty or reward to Western Power based on its actual performance against a previously agreed benchmark level for SAIDI and SAIFI. Therefore Western Power's service delivery has a direct influence on the amount of revenue it is able to collect through its network charges.

Western Power, as a network licence holder, also reports against parameters in the *Electricity Industry (Network Quality and Reliability of Supply) Code 2005.* However these parameters intended to place clear minimum standards on electricity suppliers and as such are less comprehensive and less well defined than parameters existing in the network access code.

4.2.2 Eastern States

Electricity providers in the Eastern States have different performance standards depending upon their function. Typically, companies are classed as transmission network providers or distribution network providers each with their own Service Target Performance Incentive Scheme. The scheme is devised and managed by the Australian Economic Regulator (**AER**) and comprises four components:

- reliability of supply (including SAIDI and SAIFI);
- quality of supply;
- customer service; and
- guaranteed service level.

[38] Transmission generally relates to the network from the generating power station to zone sub-stations, located at key points around the supply area. Distribution generally relates to the network from the zone sub-station to the customer's premises.

Each of the four components has an associated benchmark, set at the individual company level. Performance against benchmarks can elicit an increase or decrease in revenue, or a payment the service provider must make to customers. Under the guaranteed service level component, payments are made directly to customers where the service received by customers does not meet a specified service standard. This would cover such instances as:

- total number of interruptions per annum;
- total duration of interruptions;
- time taken to repair streetlights;
- timing of new connections; and
- notice of planned interruptions to supply.

Guaranteed service level payments range from $25 to $300 depending upon the service standard.

Electricity retailers in Eastern Australia are currently regulated by the appropriate state regulator, such as the Victorian Essential Services Commission or the Independent Pricing and Regulatory Tribunal in New South Wales. These regulators monitor the compliance of electricity licensees with their licence conditions and regularly report on retailers' performance. State regulators have similar enforcement powers to those of the Authority and can publish enforcement orders or impose penalties on retailers for poor performance and ultimately vary or revoke a licence if performance does not improve.

The current arrangements will be changing in the near future. Amendments to the proposed new legislation being implemented as part of the National Energy Customer Framework will transfer non-price distribution and retail regulatory functions from state and territory jurisdictions to the AER (except in Western Australia and the Northern Territory in respect of electricity). Effective transfer of these functions is likely to occur on an incremental basis from the middle of 2011.

4.3 Review of Regional Power Corporation's Code Standards

Section 39A of the *Electricity Industry Act 2004* establishes the requirement for the Authority to conduct a review of Horizon Power's code standards. These are the power quality and reliability standards that apply under the reliability code described in Section 4.1 above. The Authority is required to review Horizon Power's standards having regard for the service standards that apply to Western Power in its current Access Arrangement.

In the course of the review, the Authority compared code standards in the reliability code with service standards applying to Western Power under its access arrangement. A full list of the issues identified during the review and the Authority's proposed approach to addressing the issues can be found in the recommendation report published in October 2008 and available on the Authority's website.[39]

[39] Economic Regulation Authority (2008), Recommendation Report: Review of Regional Power Corporation's Code Standards, October 2008.

With the exception of standards relating to the reliability of the transmission network,[40] the Authority generally recommended that the service standards applying to Horizon Power be aligned with those applying to Western Power under the Access Arrangement. However the Authority has acknowledged that, although similar service standards would be adopted, a set of Horizon Power specific benchmarks need to be established to reflect the different operating conditions of Horizon Power compared to Western Power.

As this review of service standards was undertaken only recently, the Authority proposes to take forward the recommendations of its report into this inquiry.

Issues for this inquiry

3) Do you agree with the range of performance measures Horizon Power currently reports against?

4) What alternative performance measures could be considered?

5) Do you think that Horizon Power's performance around a set of benchmarks should attract a financial penalty or reward for the company?

[40] Transmission network standards are the exception because of the short length, only 464 km, of the transmission network in regional Western Australia is owned by Horizon Power. The benefits of implementing a system to record and report transmission standards, on such a short length of network, would be outweighed by the costs incurred.

5 Horizon Power's Costs

The sections below give a brief overview of Horizon Power's financial planning process and resultant capital and operating cost programmes.

5.1 Financial Planning

Horizon Power's planning studies forecast the demand on the transmission, distribution and generation systems. District Asset Management Plans (**DAMPs**) are developed to identify the plans and budgets necessary to meet that demand and maintain and operate Horizon Power's assets. The DAMPs also identify those assets requiring replacement and the new projects necessary for the achievement of operational and service goals.

The acquisition of new assets goes through an internal 'gating' process that prescribes the submission, review and approval steps for considering both the business and engineering aspects of a proposed project. The process begins with a high level proposal which, if approved, has a draft business case prepared. Then, depending upon project value, the business case is reviewed and signed off through the management structure and, if of significant value, Horizon Power's Board.

Horizon Power then collates the DAMPS and associated capital and operating expenditure into an overall budget plan and submits this to the Department of Treasury and Finance (**DTF**), annually by the end of October, to flow into the State Budget Forecast. A five year Strategic Development Plan is submitted to the Minister for Energy which contains the financial outlook and expected outcomes if the expenditure plans are adopted.

DTF comments on the proposed Horizon Power budget and then the Minister for Energy presents this to the Expenditure and Economic Review Committee which approves or rejects the budget. Once approved, Horizon Power prepares Operations Management Action Plans to implement the approved projects.

A review of Horizon Power's Asset Management Plan is regularly conducted to assess Horizon Power's level of compliance with the conditions of its licence. Section 14(1)(c) of the *Electricity Industry Act 2004* requires Horizon Power to provide the Authority with a report by an independent expert on the effectiveness of Horizon Power's Asset Management System. The review generally comprises a document review and then meetings between the independent experts and key Horizon Power staff both at Head Office and in the regions.

Issues highlighted in the latest asset management system review for the period 1 April 2008 to 30 September 2009 include the following:

- some of the district level procedures, such as those detailing demand management and data back-up, are inconsistent and not fully documented;
- some inaccurate data exists in the asset management system, for example some assets are missing or not recorded on the asset register and no one system contains all requisite asset details;
- asset disposal and under-utilisation is not fully reflected in DAMPs;

- overall, document control and revision procedures require improvement, this has led to DAMPs being incomplete or inaccurate prior to approval; and

- no strict control on due dates for Asset Management Plan (**AMP**) reviews and substation inspections causing some planning studies and inspections to fall overdue.

The review also highlighted that each district plan needs a clear strategy on how the loss of supply from a private generator would be managed and to identify where, when, how and to what extent alternatives would be available. This is particularly important given Horizon Power's reliance on private generation and, whilst performance in some districts was affected by the operation of private generators, there was no obvious reporting of their performance against regulatory standards.

Overall however, the review found that Horizon Power's asset management system is comprehensive, detailed and soundly based on corporate policies and strategies. The core issues identified in previous reviews have largely been resolved and plans implemented to address the further issues identified. Independent reviews will continue as part of Horizon Power's licence conditions to ensure all issues are ultimately addressed and that an acceptable level of asset management is maintained.

5.2 Operating and Capital Expenditure Programmes

Horizon Power's Budget forecasts for its operating and capital expenditure programmes are shown in Table 5.1 below.

Table 5.1 Horizon Power's Forecast Operating and Capital Expenditure

Programme ($ million)	2009/10 Estimated expenditure	2010/11 Estimated expenditure	2011/12 Forward estimate	2012/13 Forward estimate	2013/14 Forward estimate
Total Operating Expenses	117.10	128.40	141.00	154.50	170.60
Capital Expenditure	145.316	155.619	128.874	57.292	36.128

Source: 2010/11 Budget Paper No. 2, Volume 2, p 594 and with additional information by email from Horizon Power 26 May 2010

The figures in Table 5.1 do not include forecasts for additional expenditure resulting from potential implementation of the CPRS and MRET policies.

In its Statement of Corporate Intent for 2010, Horizon Power has identified the main drivers of operating costs as:

- changes to the maintenance costs for generation and network assets;

- the increased cost of housing employees;

- additional audit and compliance costs; and

- delivery of a state-wide demand-side management programme.

The main drivers for the 2009/10 capital programme are listed in Table 5.2 below.

Table 5.2 Main Drivers of Horizon Power's Capital Programme for 2009/10

Driver	Project examples	2009/10 ($M)	Percentage of total capital programme
Network enhancement	Additional transmission and distribution capacity to meet increased demand.	52.057	35.8
Asset replacement due to age	Includes $21.348 m for the refurbishment of Marble Bar and Nullagine Power stations by June 2010.	29.592	20.4
Other	To support business infrastructure.	19.587	13.5
Safety driven	Remedial replacements for distribution assets to address public safety in overhead networks.	13.420	9.2
Pilbara Underground Power Project	Moving transmission and distribution lines underground.	11.500	7.9
Customer driven	New connections, these are fully funded by the customer.	8.614	5.9
Reliability driven	Includes initial funding for the planned refurbishment of Carnarvon power station, starting in 2009/10.	7.358	5.1
Government Policy or Initiative	Includes State and Federal funding for the Aboriginal and Remote Communities Power Supply Project.	2.480	1.7
SCADA	Supervisory Control and Data Acquisition system.	0.708	0.5
TOTAL		145.316	100

Source: 2010/11 Budget Paper No. 2, Volume 2, p 595 and with additional information by email from Horizon Power 26 May 2010

Some of Horizon Power's capital projects are funded by the State or Federal Governments, examples include the Aboriginal and Remote Communities Power Supply Project, or solely State funded such as the Town Reserves Regularisation Project and funding received from the Royalties for Regions programme to underground the supply network in Karratha, South Hedland, Onslow and Roebourne. Other elements of the capital programme, such as funding for the initial stages of a new substation in Broome, completion of the interconnection of the West Pilbara power station and the acquisition of transmission interconnection assets in Port Hedland, are debt funded.

There remains uncertainty around the extent and timing of the introduction of the proposed CPRS programme. Consequently the Authority is intending to forecast and model the costs associated with these schemes in line with the approach taken by IPART in its recent paper 'Review of Regulated Retail Tariffs and Charges for Electricity 2010-2013' for electricity retailers in New South Wales.

The CPRS is the main driver of the Federal Government's plan to reduce Australia's greenhouse gas[41] emissions. Approximately 1,000 Australian companies are responsible for around 75% of Australia's greenhouse gas emissions. Under the CPRS, these companies will purchase (or be issued with) permits equivalent to their greenhouse gas emissions each year. The Federal Government will set an overall limit or cap on the total amount of carbon emitted, which will gradually reduce over time. Companies with greenhouse gas emissions will then have the choice to either revise their technology or operations to reduce their overall emissions or purchase the number of permits they require, at increasing prices as the total number of permits decline, depending on which is cheaper for the company. This is the essence of a 'cap and trade' scheme. To soften the impact of the scheme upon participating companies, the Federal Government has fixed the carbon permit price at $10 per tonne for the first year of the scheme. The scheme had been expected to start in 2011/12. However, on 27 April 2010, the Prime Minister announced that the start of the CPRS will be delayed until after the end of the current commitment period of the Kyoto Protocol (2012) and until there is further clarification on the actions of other major economies.[42] The costs associated with the CPRS involve the cost of trading in carbon permits and the costs of revising technology or procedures to reduce overall carbon emissions.

The MRET is another Federal scheme to reduce carbon emissions by encouraging additional generation of electricity from renewable resources. Electricity generated in this way, such as from wind farms, geothermal sources and solar or wave technology, typically does not involve burning carbon and so avoids generating greenhouse gases. In the case of biomass, carbon is expended but is then replaced by replanting the source material. The Federal Government has committed to ensuring 20% of Australia's electricity will come from renewable resources by 2020. This imposes annual renewable power percentages on retailers of electricity such that a given percentage of the electricity they purchase must come from renewable sources. If retailers cannot buy the required percentage of electricity from renewable sources they are legally obliged to purchase Renewable Electricity Certificates (**RECs**) from accredited renewable generators to cover the shortfall, or incur a penalty charge. With current technologies, renewable energy is more expensive to produce than fossil fuel generated electricity.

IPART modelled the additional costs associated with the CPRS and the MRET, assuming the previous start date of 1 July 2011, in its recent determination of regulated retail electricity tariffs for New South Wales. The methodology it adopted is simple, transparent and takes into account the uncertainty around the introduction and timing of the CPRS. Consequently, the same methodology will be adopted by the Authority in the inquiry, although reflecting the further delay in the start date, unless interested parties can suggest a better approach.

IPART calculated the additional costs associated with the CPRS and the MRET and incorporated them into the LRMC and market-based calculation of energy purchase costs that comprise part of the regulated retail electricity tariff in New South Wales.

The 'cost' of the CPRS was calculated as the product of the Commonwealth Treasury's carbon price forecasts at October 2008 adjusted to reflect nominal prices ($10 per tonne for 2011/12 and $26 per tonne for 2012/13) and the emissions intensity for each generator. The emissions intensity is the amount in tonnes of carbon dioxide equivalent emitted (tCO2e) per megawatt hour of electricity generated (MWh).

[41] There are six main greenhouse gases covered by CPRS, these are carbon dioxide, methane, nitrous oxide, sulphurhexafluoride, hydroflurocarbons and perflurocarbons.

[42] Department of Climate Change and Energy Efficiency website, http://www.climatechange.gov.au/en/media/whats-new/cprs-delayed.aspx

The 'cost' of the MRET scheme was calculated as the product of the cost per REC ($ per MWh of electricity generated from renewable sources) and the annual renewable power percentage for each retailer.

In adopting the IPART approach, the Authority will need to assume a revised start date in 2013, and roll forward the carbon price forecasts accordingly.

In reviewing Horizon Power's operating costs overall, the Authority will initially consider Horizon Power's level of base operating costs. These are the operating costs associated with continuing to provide the average level of service to customers as determined at a set point in time. To encourage Horizon Power to operate more efficiently, the Authority is likely to set an efficiency target for this level of base operating costs. Such an efficiency target will typically be defined as a percentage reduction in base real operating expenditure per connection, per year.

Any operating costs associated with increasing service above the defined average level, as required by customers or the government would be separately funded by a CSO payment.

To help the Authority determine an efficient level of base and future operating costs the Authority will instruct its technical consultants to:

- compare Horizon Power's actual operating expenditure to the projected operating expenditure and to investigate the reasons for any substantial differences between projected and actual expenditures; and

- examine projected operating expenditure, cost drivers and processes, and determine the scope for efficiency gains in comparison to past performance and other service providers.

Issues for this inquiry

6) How could Horizon Power be encouraged to operate more efficiently?

6 Horizon Power's tariffs

6.1 Current tariffs

Horizon Power's regulated tariffs are shown in Table 6.1 below.

The uniform tariffs Horizon Power can charge its customers are determined by the *Energy Operators (Regional Power Corporation) (Charges) By-Laws 2006 – Schedule 1;* an identical schedule exists for Synergy's uniform tariffs. Any increases in these tariffs, or changes to tariff structure are determined by the Government and published in the *Government Gazette* as required.

Table 6.1 Horizon Power's Regulated Tariff Classes

Tariff	Short description	Charges as at 26 March 2010	Available to
A2	Residential	*Fixed charge:* 34.7537 cents/day for the first dwelling; and 26.9847 cents/day for each additional dwelling. *Consumption charge:* 18.9319 cents/unit	Customers in dwellings used solely for residential purposes.
L2	Small business	*Fixed charge:* 32.98 cents/day *Consumption charges:* 21.6753 cents/unit for first 1,650 units/day 19.5586 cents/unit for all units exceeding 1,650 units/day	Small commercial customers requiring low to medium voltage (240/415V), who consume less than 50 MWh per annum.
L4	Medium to large business	*Fixed charge:* 34.5527 cents/day *Consumption charges:* 22.704 cents/unit for first 1,650 units/day 19.7005 cents/unit for all units exceeding 1,650 units/day	Medium to large commercial customers who require a low to medium voltage, who consume over 50 MWh per annum.
M2	Large businesses	*Fixed charge:* 34.5527 cents/day *Consumption charges:* 21.9354 cents/unit for first 1,650 units/day 19.7005 cents/unit for all units exceeding 1,650 units/day	Large commercial customers requiring high energy voltage who consume over 50 MWh per annum.
C2	Special community service tariff	*Fixed charge:* 31.7383 cents/day *Consumption charges:* 17.3 cents/unit for first 20 units/day 21.6753 cents/unit for next 1,630 units/day 19.5586 cents/unit for all units exceeding 1,650 units/day	Charitable organisations.
D2	Special tariff for certain premises	*Fixed charge:* 31.7383 cents/day If there is deemed to be more than one equivalent domestic residence in the premises, a charge of 24.6433 cents/day for each equivalent domestic residence except the first that is deemed to be in the premises.** *Consumption charge:* 17.3 cents/unit	Charitable organisations offering residential accommodation other than for commercial gain.

Tariff	Short description	Charges as at 26 March 2010	Available to
K2	Mixed business and residential	*Fixed charge:* 34.7537 cents/day *Consumption charges:* 18.9319 cents/unit for first 20 units/day 23.7328 cents/unit for next 1,630 units/day 21.4269 cents/unit for all units exceeding 1,650 units/day	Customers in dwellings used for residential and commercial use.
N2	Regional non-integrated system	*Fixed charge:* 31.31 cents/day *Consumption charge:* at the rate calculated by the following formula R=[18.7797+((8.5552 x P)/39.18)] x 1.1 Where R is the rate to be calculated, and P is the Singapore Gas Oil 0.5% midpoint of the Product Price Assessments for Singapore/Japan cargoes*	Commonwealth or foreign government institutions.
P2	NWIS	*Fixed charge:* 40.7318 cents/day *Consumption charge:* 27.0148 cents/unit	Commonwealth or foreign government institutions supplied from the NWIS.
W2	Traffic light installations	A charge of $4.0192/day per kW of installed wattage.	N/A

Source: Energy Operators (Regional Power Corporation) (Charges) By-laws 2006 – Schedule 1. Synergy has the corresponding tariffs of A1, L1, L3, M1 and W1.

* As amended from time to time and published by Platt's in the Oilgram Price report, and as expressed in Australian dollars per litre and including the rate of duty imposed by item 10.10 of the Schedule to the *Excise Tariff Act 1921* (Commonwealth).

** The number of equivalent domestic residences deemed to be in particular premises is ascertained by dividing the facility's total bed capacity by 5 and, where the quotient is not a whole number, by increasing it to the next highest whole number.

The OoE is conducting a review of the electricity retail market which considers electricity retail tariff arrangements, the introduction of full retail contestability in electricity and the roll out of smart meters. The OoE published its final recommendation report on the first part of this review − electricity retail tariff arrangements − in January 2009.[43] A key message from the report was that current retail electricity prices were not cost reflective but they should be. This is desirable in order to capture the additional costs associated with new policies such as the CPRS, send appropriate price signals to consumers to encourage energy efficiency, and to ensure both the financial viability of electricity market participants and the security of electricity supply. The report also notes that concessions and rebates should be increased in line with tariffs to mitigate the effects on low income and disadvantaged consumers.

In March 2010, the Minister for Energy announced a further review to examine alternative electricity pricing structures for West Australian households to help ease the financial impact of rising energy prices. This was one of a number of assistance measures which includes additional funds being made available for rebate schemes and financial assistance packages.[44]

[43] Office of Energy (2009), Electricity Retail Market Review: Final Recommendations Report, Review of Electricity Tariff Arrangements, January 2009.

[44] Minister for Energy (2010), Media Statements – Review of electricity pricing to help ease financial pressure on WA households, 19 March 2010.

6.2 Allocation of Costs

To move to truly cost reflective tariffs, the specific costs of supplying particular groups of customers need to be identified and the fixed and variable elements of a tariff set to reflect these costs. This ensures that the subsequent tariff revenue generated exactly covers the costs incurred in supplying that group of customers with electricity.

Horizon Power has isolated the operating and maintenance costs associated with supplying electricity to the districts across its supply area. This information is shown in Section 6.2.2 below and presented as a unit cost for each district. This is the total operating and maintenance costs incurred in supplying the particular district divided by kWh sold.

It is also important to consider the individual elements that constitute the overall unit cost to supply. Horizon Power has identified these as generation costs, network costs, depreciation cost and overheads. The contribution of each of these cost classes to the overall unit cost of supplying electricity to the five geographic regions in Horizon Power's supply area is shown in Table 6.2 below. By analysing the different elements that constitute total supply costs and then comparing these by geographic location, type of generation source and network configuration, the inquiry will look for similar cost structures which can then be used as a basis for determining a cost reflective tariff structure.

6.2.1 Analysis of the Elements of Unit Cost to Serve

Horizon Power has provided the Authority with a breakdown of regional unit cost to supply in Table 6.2 below.

Table 6.2 Analysis of the Elements of Horizon Power's Cost to Supply 2008/09 by region in $ per kWh

Region	Generation Fixed cost	Generation Variable cost	Network Fixed cost	Network Variable cost	Depreciation	Overhead	Total
Pilbara	0.02	0.11	0.01	0.01	0.01	0.11	0.26
Kimberley	0.15	0.13	0.01	0.01	0.01	0.10	0.42
Gascoyne	0.17	0.17	0.01	0.02	0.02	0.10	0.50
Esperance	0.22	0.13	0.02	0.02	0.02	0.10	0.51
Mid West	0.12	0.34	0.01	0.03	0.06	0.11	0.67

Source: Horizon Power

The districts that are included for each region are listed in Appendix C.

From the analysis of unit costs at the regional level, the individual contribution of generation, network, depreciation and overhead costs to the overall cost to serve is observed. The percentage contribution of each element is illustrated in Table 6.3 below (percentages may not add to 100 due to rounding).

From the table below, the cost of generation is clearly the largest contributor to overall unit cost to serve. This ranges from 50 per cent of unit cost in the Pilbara to 68.7 per cent in Esperance and the Mid West.

Table 6.3 Percentage Contribution of Individual Elements of Unit Cost to Supply at the Regional Level

Region	Generation	Network	Depreciation	Overhead
Pilbara	50.0	7.7	3.8	42.3
Kimberley	66.7	4.8	2.4	23.8
Gascoyne	68.0	6.0	4.0	20.0
Esperance	68.7	7.9	3.9	19.6
Mid West	68.7	6.0	9.0	16.4

Source: Horizon Power data with Economic Regulation Authority analysis

Horizon Power only generates around 13 per cent of the electricity it supplies to its customers; the remaining 87 per cent is purchased from private generators, or Verve, through Power Purchase Agreements (**PPAs**). Horizon Power anticipates that any additional costs incurred by private generators, such as increases in raw material costs or as liable entities under any CPRS scheme, will be passed on to Horizon Power through these PPAs and directly influence unit cost to supply.

The other key contributor to overall unit cost to serve is the overhead element. This covers the retail and business costs such as centralised accounting, compliance and regulation, human resources, management costs, finance lease costs of generation and planning tasks that cannot easily be allocated to the district level. Also included in overhead costs are some direct costs associated with the generation, network and retail functions but because of its vertically integrated nature Horizon Power finds these difficult to specifically allocate.[45]

6.2.2 Unit Cost to Serve at the District Level

A list of Horizon Power's indicative unit costs to serve at the district level is given in Table 6.4 below. This has been further enhanced by listing the underlying generation fuel type, generator and approximate installed capacity of the power station.

From the information shown in Table 6.4 below, reasonably clear relationships can be seen between:

- cost and fuel type – conventional natural gas is the least expensive fuel and diesel the most expensive;
- cost and generator capacity – the larger the generator, the cheaper to supply; and
- distance from infrastructure – in particular for diesel generators, the further away from a major town for distribution of diesel the more expensive the supply cost.

Diesel is generally used to power low capacity generation plant (0.4 MW to 10 MW), with the cost to supply ranging from $0.52 per kWh in Marble Bar to more than $1.50 per kWh in Gascoyne. Communities in more remote areas, such as Ardyaloon, Djarindjin and Beagle Bay in the Kimberley, exhibit higher costs due to the distance required to transport diesel by road.

Gas in various forms, piped, liquid or condensed, appears a cheaper fuel source across the range of generation capacities with cost to supply ranging from $0.38 per kWh in

[45] Horizon Power (2010), email from Horizon Power dated 11 May 2010.

Carnarvon to $0.61 per kWh in Halls Creek. This cost of supply falls to just $0.26 per kWh in the NWIS. This cost reduction results from economies of scale of the 400 MW generation capacity available in the system, the larger customer base in the region and the transport and technology cost variations reflected at each location, in particular the nearness of domestic gas terminals and generators which minimise transport costs.

Large scale and large capacity renewable generators, such as the wind farms at Esperance have comparative unit cost to serve figures ($0.49/kWh) to gas generators. However, this low unit cost is probably a function of the capacity of the generator which, at 35 MW, is the second highest capacity generator in Table 6.4 below.

However, unit cost information in a particular year should be viewed with caution. The business case Horizon Power develops for determining the type of generation, thermal (e.g., diesel or gas) or renewable (e.g., wind or solar), in any particular district or community is calculated using lifecycle costing. This is the initial capital and ongoing operating and maintenance costs over the whole life of the asset, generally taken to be around 30 years. Therefore, the efficiency or fitness for purpose of a particular generation type in a given district is not necessarily reflected in the unit cost to supply in any one year.

Further analysis will be undertaken to consider any relationships that may exist between costs and generator fuel source, generator capacity, distance of generator from supporting infrastructure or any other variables. This analysis can then inform the potential allocation of costs within tariff classes that may form the basis of developing cost reflective tariffs for Horizon Power.

Table 6.4 Horizon Power's Indicative Unit Cost to Serve Districts for 2008/2009

District	$ per kWh excluding GST	Fuel Type	Approximate installed capacity MW
NWIS	0.26	Gas	400
Kununurra*	0.26	Hydro	30
Carnarvon	0.38	Gas (Horizon Power)	16
Broome	0.40	Liquid Natural Gas	50
Onslow	0.46	Gas	4
Derby	0.47	Liquid Natural Gas	15
Mount Magnet	0.48	Gas	2
Leonora	0.49	Gas (ENGEN)	3
Esperance	0.49	Gas/Wind	35
Marble Bar	0.52	Diesel (Horizon Power)	1
Norseman	0.54	Diesel	10
Denham	0.56	Diesel/Wind (Horizon Power and Verve)	2
Fitzroy Crossing	0.58	Liquid Natural Gas	5
Exmouth	0.59	Compressed Natural Gas	8
Halls Creek	0.61	Liquid Natural Gas	4
Cue	0.66	Diesel	1
Camballin	0.70	Diesel	1
Laverton	0.71	Diesel	2
Nullagine	0.72	Diesel (Horizon Power)	1
Hopetoun	0.78	Wind/Diesel (Horizon Power)	2
Meekatharra	0.81	Diesel	3
Wiluna	0.82	Diesel	1
Bidyadanga	0.91	Diesel	1
Warmun	0.96	Diesel	1
Yalgoo	0.96	Diesel	<1
Sandstone	1.01	Diesel	<1
Ardyaloon	1.14	Diesel	<1
Beagle Bay	1.21	Diesel	<1
Djarindjin	1.28	Diesel	<1
Menzies	1.31	Diesel	<1
Gascoyne Junction	1.53	Diesel	<1
Coral Bay	1.65	Wind/Diesel (Horizon Power)	2

Source: Horizon Power

This district (*) is supplied by the Ord River Hydro Project operated by Pacific Hydro. The hydro power station has a generation capacity of 30MW and transmits electricity via its own 132 kV transmission line. Horizon Power and the Argyle Diamond Mine purchase the electricity generated by the plant.

Issues for this inquiry

7) How could costs of supply be grouped together to produce a sub-set of cost reflective tariffs inside existing tariff structures?

8) How else could Horizon Power deliver its service in remote regions?

9) Are there any issues that you believe need to be brought to the Authority's attention as part of this inquiry?

7 Summary of Issues for this Inquiry

The Authority invites submissions from interested parties on the matters raised in this issues paper or relevant to the Terms of Reference. A summary of the issues raised in this issues paper is presented below.

1) Do you think that the regulatory approach to be taken is appropriate? If not, what alternative methodology should be considered?

2) Which tariff design approach, 'direct cost pricing' or 'LRMC pricing', is preferable to generate the cost reflective pricing structure and why?

3) Do you agree with the range of performance measures Horizon Power currently reports against?

4) What alternative performance measures could be considered?

5) Do you think that Horizon Power's performance around a set of benchmarks should attract a financial penalty or reward for the company?

6) How could Horizon Power be encouraged to operate more efficiently?

7) How could costs of supply be grouped together to produce a sub-set of cost reflective tariffs inside existing tariff structures?

8) How else could Horizon Power deliver its service in remote regions?

9) Are there any issues that you believe need to be brought to the Authority's attention as part of this inquiry?

APPENDICES

Appendix A: Terms of Reference

INQUIRY INTO THE FUNDING ARRANGEMENTS OF HORIZON POWER

FINAL TERMS OF REFERENCE

I, COLIN BARNETT, Treasurer, pursuant to Section 32(1) of the *Economic Regulation Authority Act 2003*, and in accordance with section 129E(1) of the *Electricity Industry Act 2004*, request that the Economic Regulation Authority (the Authority) undertake an inquiry into the funding arrangements, and operating and capital expenditure programmes of the Regional Power Corporation (Horizon Power).

In doing so, the Authority is expected to consider and develop findings on:

- The cost reflective retail tariffs that would apply in the areas of operation of Horizon Power, for the purpose of determining the efficient expenditure required to supply customers on regulated retail tariffs located in these areas. This will inform the setting of the amount of the Tariff Equalisation Contribution (TEC), which will be determined by Government.

- The cost reflective retail tariffs should be determined for the period 2009/10 to 2013/14.

- A cost reflective retail tariff should be determined for each of the retail tariffs currently provided by Horizon Power, being the A2, K2, L2, M2, N2, W2 and Streetlight tariffs (as detailed in the Energy Operators (Regional Power Corporation) (Charges) By-laws 2006).

- The Authority is to determine whether the area that Horizon Power operates in should be separated into sub-areas, given the different cost structures of the systems that Horizon Power operates, for the purpose of determining cost reflective retail tariffs. If this is the case, the Authority is to:

  - define the sub-areas (minimising the number of sub-areas as much as possible); and

  - determine a different cost reflective retail tariff (for each tariff class) for each sub-area.

- The Authority is also to take into account the following costs when determining the retail tariffs, but is not limited to considering only these costs:

  - the efficient generation costs applicable in the area Horizon Power operates in or each sub-area, if applicable, taking into account the current and committed stock of generation;

  - the efficient network costs applicable in the area Horizon Power operates in or each sub-area, if applicable, taking into account the current network infrastructure;

  - the efficient level of retail costs that would be applicable in the area that Horizon Power services (both operating and capital costs);

  - the efficient net retail margin that would apply;
  - the efficient costs related to the national Mandatory Renewable Energy Target (MRET), including the expanded MRET if applicable; and
  - the efficient costs related to the proposed Carbon Pollution Reduction Scheme (CPRS), including the carbon intensity that should be applied in determining CPRS costs that would be incorporated into the cost reflective retail tariffs.

- The Authority is also to consider and incorporate incentives for Horizon Power to develop and implement efficiency measures, such as gain sharing mechanisms between customers and Horizon Power, in determining cost reflective retail tariffs if the Authority considers this would minimise costs within the area that Horizon Power operates in.
- The efficiency of Horizon Power's procurement processes.
- The efficiency of Horizon Power's operating and capital expenditure programmes, including opportunities of alternative arrangements for service delivery in remote regions.

The Authority should note the following:

- The TEC refers to the amount payable by the Electricity Networks Corporation (Western Power) to the Tariff Equalisation Account to contribute towards maintaining the financial viability of Horizon Power, as set out in part 9A of the *Electricity Industry Act 2004*.
- The Department of Treasury and Finance and the Office of Energy are currently in the process of developing a revised framework for determining the TEC amount, including a post adjustment mechanism to vary the TEC set for 2009/10 to 2011/12.

The Authority will release an issues paper as soon as possible after receiving the reference. The paper is to facilitate public consultation in the basis of invitations for written submissions from industry, government and all other stakeholder groups, including the general community.

A draft report is also to be made available for public consultation.

The Authority will complete a final report on the findings of the inquiry no later than 18 March 2010.

COLIN BARNETT MLA
PERMIER; TREASURER

Appendix B: Rebates and Subsidies Available for Horizon Power's Residential Customers

The table below lists current rebates and subsidies. Eligible customers are required to apply to Horizon Power and supply any required documentation to receive the appropriate subsidy or rebate.

Table B.1 Rebates and Subsidies Available for Horizon Power's Residential Customers

Rebate or subsidy available	Customers eligible
Reduced fees on meter testing	Holders of Centrelink Health Care Cards, Pensioner Concession Cards and holders of Veteran Affairs Gold Cards
Rebate on the Account Establishment Fee	As above
Rebate on the Supply Charge	As above and Holders of Seniors Cards
Rebate on a proportion of the Energy Charge	Customers with dependant children who also receive the Supply Charge rebate
Rebate to offset the electricity costs of operating an air conditioner	Holders of Seniors Cards and customers receiving dependant child rebates
Rebate on the Supply Charge in multiple residences	In a multiple residence where electricity is supplied through one main meter
Life Support Equipment Electricity Subsidy	To compensate financially disadvantaged persons for the electricity costs of operating life support equipment at home
Thermoregulatory Dysfunction Energy Subsidy Scheme	To help pay for domestic heating or cooling systems for people who suffer from chronic medical conditions which prevent them from regulating their body temperature
Hardship Assistance Package	Customers experiencing financial hardship may be eligible for assistance through the Hardship Utilities Grant Scheme to help pay their utility bills and avoid disconnection

Source: Horizon Power web site

Appendix C: Districts Included in Each Region in Section 5

Table C.1 Districts by Region for Horizon Power's Supply Area

Region	Towns included
Kimberley	Halls Creek, Kununurra, Wyndham, Lake Argyle, Warmun, Ardyaloon, Beagle Bay, Bidyadanga, Broome, Camballin/Looma, Derby, Djarindjin/Lombadina, Fitzroy Crossing
Pilbara	Marble Bar, Nullagine, Karratha, Onslow, Port Hedland
Gascoyne	Carnarvon, Coral Bay, Denham, Exmouth, Gascoyne Junction
Esperance – Goldfields	Esperance, Hopetoun, Norseman
Mid West	Cue, Laverton, Leonora, Meekatharra, Mount Magnet, Sandstone, Wiluna, Yalgoo, Menzies

Source: Horizon Power

Appendix D: Glossary and Abbreviations

7.1 Act	*7.2 Economic Regulation Authority Act 2003*
7.3 AER	Australian Economic Regulator (for the Eastern States)
AMP	Asset Management Plan
Authority	Economic Regulation Authority (Western Australia)
Biomass	Renewable organic materials, such as wood, agricultural crops or wastes, and municipal wastes, especially when used as a source of fuel or energy. Biomass can be burned directly or processed into biofuels such as ethanol and methane.
CNG	Compressed Natural Gas
Cost Reflective Tariffs	Tariffs applying to a certain class of customers that generate revenue that exactly covers the cost of supplying electricity to that class of customers.
CPI	Consumer Price Index
CPRS	Carbon Pollution Reduction Scheme
CSO	Community Services Obligation
DAMPs	Horizon Power's District Asset Management Plans
Distribution	Distribution generally relates to the electricity network that extends from the zone sub-station to the customer's premises.
DTF	Department of Treasury and Finance
ERA	Economic Regulation Authority (Western Australia)
Gifted Assets	Those assets owned by the service provider but which were funded through an external source, such as developer contribution or government funding.
GSL	Guaranteed Service Level – generally these are accompanied by a penalty payment, payable to customers, who have experienced performance from an electricity supplier, below a given level.
GST	Goods and Services Tax
GTE	Government Trading Enterprise

GW	Gigawatt, 1 billion watts or 1000 megawatts
GWh	Gigawatt hour
IPART	Independent Pricing and Regulatory Tribunal (in New South Wales)
kW	Kilowatts, 1000 watts
kWh	Kilowatt hour
LNG	Liquid Natural Gas
LRMC	Long Run Marginal Cost - the change in the long-run total cost of producing a good or service resulting from a change in the quantity of output produced. There are no fixed inputs in the long run. As such, there is only variable cost. This means that long-run marginal cost is the result of changes in the cost of all inputs.
MRET	Mandatory Renewable Energy Target
MW	Megawatts, 1 million watts or 1000 kilowatts
MWh	Megawatt hour
Network charges	The fees charged by a network operator and paid by generators and retailers for use of the network operator's network to transport electricity.
NWIS	North West Interconnected System – the system of generation, network and distribution centring around Karratha and Port Hedland in the far north west of Western Australia.
OoE	Office of Energy
PPAs	Power Purchase Agreements – between Horizon Power and independent generators of electricity.
Pre-payment meters	Electricity meters that allow customers to purchase credit and load this credit onto the pre-payment meter. The prepayment meter then allows the customer to consume electricity up to the value of the amount of the credit. Once the amount of the credit is exhausted, the pre-payment meter discontinues the supply of electricity.
REC	Renewable Energy Certificate
Renewable energy	Energy that is generated from renewable sources such as wind, solar or water (hydro).
Revenue requirement	A level of revenue, to be collected from regulated tariffs, that covers the efficient costs of providing a utility service to a required performance

	standard.
SAIDI	System Average Interruption Duration Index – the total of all customer interruptions in minutes divided by the total number of customer connections averaged over the year.
SAIFI	System Average Interruption Frequency Index – the total number of interruptions divided by the total number of customer connections averaged over the year.
SWIS	South West Interconnected System – the system of generation, networks and distribution supplying the area between Kalbarri in the north and Albany in the south and stretching out to Kalgoorlie in the east.
Synergy	The state-owned Electricity Retail Corporation, operating in the SWIS.
Transmission	Transmission generally relates to the electricity network from the generating power station to zone sub-stations, which are located at key points around the supply area.
TEC	Tariff Equalisation Contribution − paid by Western Power's customers through their network charges, to Horizon Power to fund the shortfall between the uniform tariff revenue and the cost of supplying electricity to customers.
Uniform Tariff	A state government policy which ensures all small use customers pay the same tariffs regardless of where they live in Western Australia.
Verve	Verve Energy − the state-owned Electricity Generation Corporation, operating in the SWIS.
WACC	Weighted Average Cost of Capital - is the minimum return that a company must earn on existing asset base to satisfy its creditors, owners, and other providers of capital, or they will invest elsewhere. It is generally calculated as the proportion of debt and equity funding used by the company compared to market risk free rates.
Watt	the SI (International System of Units) unit of power, equivalent to one joule per second and equal to the power in a circuit in which a current of one ampere flows across a potential difference of one volt.
WEM	Wholesale Electricity Market – for the trading of electricity between generators and retailers in the SWIS.
Western Power	The state-owned Electricity Networks Corporation, operating in the SWIS.