Discussion Paper

Annual Wholesale Electricity Market Report to the Minister for Energy

25 June 2010

Economic Regulation Authority
WESTERN AUSTRALIA

Contents

List of Tables ii

List of Figures ii

Invited Comments iii

1 Introduction 1

1.1 The Wholesale Market Objectives 2

1.2 Reporting requirements 2

1.3 Summary of the 2009 Minister's Report 3

1.4 Focus for the 2010 Minister's Report 3

1.4.1 Strategic considerations for market design review 4

1.4.2 The Mandatory Renewable Energy Target, renewable energy rebate schemes and intermittent generation 5

1.4.3 Network access – capital costs and contributions 5

1.5 How to make a submission 6

2 Outcomes in the Wholesale Electricity Market 7

2.1 The capacity market 7

2.2 The energy market 8

2.2.1 The Short Term Energy Market 10

2.2.2 Balancing 11

2.3 The retail market 12

3 Key Wholesale Electricity Market matters 13

3.1 Strategic considerations for market design review 13

3.2 The Mandatory Renewable Energy Target, renewable energy rebate schemes and intermittent generation 14

3.2.1 The Mandatory Renewable Energy Target 14

3.2.2 Renewable energy rebate schemes 14

3.2.3 Reserve Capacity and cost allocation for intermittent generation 15

3.2.4 Efficient network utilisation and capacity pricing 16

3.3 Network access – capital costs and contributions 18

3.3.1 Background 18

3.3.2 Capital contributions for shared network assets 19

Appendices 23

List of Tables

Table 1: Reserve Capacity prices 8

List of Figures

Figure 1: Reserve Capacity Credits assigned 7
Figure 2: SWIS Trading Interval maximum demand (per Trading Day) 9
Figure 3: Average peak period Trading Interval STEM price (per Trading Day) 10
Figure 4: Average Trading Interval STEM quantities (per Trading Day) 11
Figure 5: Average Trading Interval Balancing quantities (per Trading Day) 12
Figure 6: Average off-peak Trading Interval STEM price (per Trading Day) 24
Figure 7: Average Trading Interval STEM quantities bought, by Market Participant (per Trading Day) 25
Figure 8: Average Trading Interval STEM quantities sold, by Market Participant (per Trading Day) 26
Figure 9: Average peak Trading Interval MCAPs (per Trading Day) 27
Figure 10: Average off-peak Trading Interval MCAPs (per Trading Day) 27
Figure 11: Customer churn 28

Invited Comments

The Authority invites comment on any strategic, policy or high-level issues, including those raised in this Discussion Paper, that are impacting on the effectiveness of the Wholesale Electricity Market in meeting the Wholesale Market Objectives.

The Authority invites comment on the effectiveness of the Independent Market Operator, System Management and the Economic Regulation Authority.

The Authority invites comment on the impact of feed-in tariff and renewable energy rebate/buyback schemes, as they relate to the efficiency, reliability and security objectives of the Wholesale Electricity Market.

The Authority invites comment on the Reserve Capacity Credit allocation to Intermittent Generators.

The Authority invites comment on the existing and potential impact of intermittent generation on the Wholesale Electricity Market, including the need for cost reflectivity under the existing framework and Market Rules.

The Authority invites comment on the current framework for network access and the determination of capital contributions for augmentation to the shared transmission network provided by Western Power. In particular:

- **the impact that the current framework has on the effectiveness of the Wholesale Electricity Market;**
- **the impact on investment decisions, given the level of transparency and predictability in the current network access and connection charging regime; and**
- **the appropriate methodology for recovering transmission augmentation costs triggered by new generation in the South West interconnected system.**

1 Introduction

The purpose of this Discussion Paper is to assist interested parties in making submissions on any strategic, policy or otherwise high-level issues, including those raised in this Discussion Paper, that are impacting on the effectiveness of Western Australia's Wholesale Electricity Market (**WEM**)[1] in meeting the Wholesale Market Objectives (**Objectives**).

The Authority invites comment on any strategic, policy or high-level issues, including those raised in this Discussion Paper, that are impacting on the effectiveness of the Wholesale Electricity Market in meeting the Wholesale Market Objectives.

The Authority invites comment on the effectiveness of the Independent Market Operator, System Management and the Economic Regulation Authority.

Submissions on this Discussion Paper close at 4:00pm (WST) Friday 23 July 2010. See Section 1.5 for further information on how to make a submission.

The *Wholesale Electricity Market Rules* (**Market Rules**)[2] require that the Economic Regulation Authority (**Authority**) report to the Western Australian Minister for Energy (**Minister**), at least annually,[3] on the effectiveness of the WEM in meeting its Objectives (**Minister's Report**). The Authority provided its last Report (2009) to the Minister in February 2010[4] and released a public version of that Report in April 2010.[5] A summary of the 2009 Report is provided in Section 1.3.

Submissions from interested parties on issues impacting the effectiveness of the WEM will assist the Authority in preparing its 2010 Minister's Report.

After considering submissions received in response to this Discussion Paper and analysis of available WEM data,[6] the Authority will provide its 2010 Report to the Minister, which is anticipated to be in October 2010.[7]

[1] The WEM operates in the South West interconnected system (SWIS).

[2] See State Law Publisher website, http://www.slp.wa.gov.au/gazette/GAZETTE.NSF/searchgazette/43EDE36827EBE11F482571ED0023C9C5/$file/gg161.pdf

[3] Pursuant to Market Rule 2.16.11, the report must be produced at least annually, or more frequently where the Authority considers that the WEM is not effectively meeting its Objectives.

[4] See Section 1.3. Reported on the Market Surveillance Data Catalogue for the period 21 September 2006 to 31 July 2009 (Market Rules 2.16.2 and 2.16.4).

[5] The Authority must, after consultation with the Minister, publish a version of the report that has confidential and sensitive data aggregated or removed (Market Rule 2.16.15).

[6] Reporting on the Market Surveillance Data Catalogue for the period from 21 September 2006 to 31 July 2010 (Market Rules 2.16.2 and 2.16.4).

1.1 The Wholesale Market Objectives

The Market Rules requires that the Authority provide a report to the Minister for Energy on the effectiveness of the WEM in meeting the Wholesale Market Objectives. The Wholesale Market Objectives are:

- to promote the economically efficient, safe and reliable production and supply of electricity and electricity related services in the South West interconnected system (**SWIS**),[8]
- to encourage competition among generators and retailers in the SWIS, including by facilitating efficient entry of new competitors;
- to avoid discrimination in that market against particular energy options and technologies, including sustainable energy options and technologies such as those that make use of renewable resources or that reduce overall greenhouse gas emissions;
- to minimise the long-term cost of electricity supplied to customers from the SWIS; and
- to encourage the taking of measures to manage the amount of electricity used and when it is used.

1.2 Reporting requirements

Clause 2.16.12 of the Market Rules specifically requires that reports include the following information:

- a summary of the information and data compiled by the Independent Market Operator (**IMO**) and the Authority under clause 2.16.1;
- the Authority's assessment of the effectiveness of the market, including the effectiveness of the IMO and System Management in carrying out their functions, with discussion of:
  - the Reserve Capacity market;
  - the market for bilateral contracts for capacity and energy;
  - the Short Term Energy Market (**STEM**);
  - Balancing;
  - the dispatch process;
  - planning processes; and
  - the administration of the market, including the Market Rule change process;
- an assessment of any specific events, behaviour or matters that impacted on the effectiveness of the market; and

[7] A public version of the report will be published on the Authority's website following consultation with the Minister (Market Rule 2.16.15).

[8] The SWIS is defined in the *Electricity Industry Act 2004* and refers to the interconnected transmission and distribution systems located in the South West of the State, extending between Kalbarri, Albany and Kalgoorlie. See State Law Publisher website, http://www.slp.wa.gov.au/pco/prod/FileStore.nsf/Documents/MRDocument:17924P/$FILE/ElecityIndusAct2004_02-a0-00.pdf?OpenElement

- any recommended measures to increase the effectiveness of the market in meeting the Wholesale Market Objectives to be considered by the Minister.

1.3 Summary of the 2009 Minister's Report

In the 2009 Minister's Report, the Authority concluded that the WEM has generally operated effectively since market commencement, and that outcomes in the WEM are continuing to reflect increasing competition in both the generation and retail sectors.

Independent generators now account for approximately 40 per cent of the market and there are ongoing arrangements in place to ensure supply will meet demand.

Overall, the Authority found that the WEM was meeting its Objectives, but that various issues needed to be resolved or addressed to ensure that the market would continue to meet its Objectives. In summary, these issues were:

- With multiple reviews now under way, uncertainty about future policy on key issues will impact on investment decisions from potential and existing electricity operators. There is a need for a coordinated strategy to be put in place for the market's future development.
- The uncertainty created by climate change policies, which affects investment in new capacities.
- The absence of cost reflective electricity retail tariffs, which has an effect on the viability of Verve Energy.
- The impact of increased intermittent generators on the reliability and future structure of the market, and accounting for the associated costs.

The Authority recognised that while a range of issues affecting the WEM can be dealt with through existing frameworks there are a number of market design, regulatory and structural issues affecting the WEM that require high level input from policy makers.

The Authority reiterated its view that there needs to be a process put in place for delivering a strategy for the future development of the WEM (**WEM Future Strategy**), which further promotes the WEM Objectives. This strategy should be based on a transparent and consultative process, and be coordinated by the Office of Energy, so that the consideration of any changes (consistent with the Objectives) is at 'arm's length' from the perspective of State Government. Government decisions should be based on recommendations developed through a WEM Future Strategy process.

1.4 Focus for the 2010 Minister's Report

The Authority provided its 2009 Minister's Report to the Minister in February 2010 and the Authority intends to provide its 2010 Report to the Minister in October 2010. Given the short timeframe between Reports, stakeholders will have had only limited time to consider the recommendations set out in the 2009 Report.

The Authority acknowledges the key strategic matters (below) that are currently facing the WEM and which have been discussed in the Authority's previous reports.

- Low overnight load coinciding with high commitment of plant (number of plant on the system) / oversupply of energy (system generation) and potential decommitment (shutting down) of thermal plant.

- Improved Balancing mechanism / introduction of competitive Balancing in the WEM.
- Whether the Reserve Capacity Mechanism (**RCM**) promotes appropriate incentives (new investment and refunds), plant mix and funding of Supplementary Reserve Capacity.
- Whether the STEM is appropriately designed and efficient for price signalling or energy trading, primarily due to its day ahead timing. Consideration of moving STEM closer to "real time" or having multiple market gate closures.
- Closer alignment of gas and electricity nominations.
- Introduction of competition in the provision of Ancillary Services.

The Authority is aware that these matters, and others, are to be addressed in current or upcoming reviews and processes.

The Authority considers it appropriate that, rather than reiterating these issues, the 2010 Report focuses on other matters that were not considered in detail in the 2009 Report and which, in the Authority's view, are affecting the effectiveness of the WEM in meeting its Objectives. The matters for which an economic assessment would have value include:

- the Mandatory Renewable Energy Target (**MRET**), renewable energy generation and renewable energy rebate schemes; and
- issues relating to capital contributions.

The Authority notes that Market Participants generally consider that the current reviews and processes may lead to a more efficient WEM design.[9] However, the Authority also notes that these review processes will need to be appropriately managed by the relevant stakeholders and decision makers, continue to feature a high level of public consultation with key stakeholders on proposed changes to the WEM design, and transparency of decision making regarding any changes. The multiplicity of reviews – and the integrated nature of short and long term issues in the electricity market – make it difficult to clearly delineate responsibility for recommendations on key issues.

The Authority will monitor and independently report on the progress and outcomes of these reviews and processes in due course. A list of the reviews and processes looking to address the above key strategic issues, which are under way or upcoming, is included in Appendix 2.

1.4.1 Strategic considerations for market design review

There are several review processes underway in WA that impact on the WEM, including the Strategic Energy Initiative (**SEI**) review, the implementation of recommendations from the Verve Energy Review, IMO Market Rules changes and the Generation Outlook. In the 2009 Minister's Report, the Authority concluded that with multiple reviews and processes now under way, there is potential for confusion among stakeholders about policy on key issues, which is having an impact on investment decisions from potential and existing Market Participants. The Authority identified the need for a coordinated strategy to be put in place for the market's future development.

The current reviews can be categorised as assessing changes to adapt the current market design (e.g. rule changes) or to adopt a new market design to suit the emerging market

[9] Adopting changes to the WEM's design and mechanisms is achieved by modification of the Market Rules, through the Market Rule Change process administered by the IMO.

situation and promote competition in the market. There are risks involved in undertaking changes to the WEM and the Authority considers that any changes should be carefully analysed to ensure the benefits exceed the costs.

The Authority notes that, to date, there appears to have been no explicit consideration of the impact of design changes on market power mitigation in the WEM. The understanding of the Authority is that market power mitigation mechanisms will be considered after recommendations on the redesign of market rules.[10] The Authority considers that during this period of review of key WEM mechanisms, high-level consideration of market power mitigation mechanisms (that suit the SWIS and policy context) is an essential component of market design and needs to be integrated into the review processes.

This matter and the related issues are discussed in Section 3.1.

1.4.2 The Mandatory Renewable Energy Target, renewable energy rebate schemes and intermittent generation

Reconciling the goals of MRET and renewable energy rebate schemes with economic efficiency is a key issue in the WEM. In the 2009 Report, the Authority noted that it intended to monitor these matters more closely in future.

As a matter of principle, the Authority considers that intermittent generators such as wind should be treated in a non-discriminatory manner under the Market Rules. That is, they should earn revenues in the WEM based on their contribution to the provision of energy and capacity and should pay charges based on any costs they impose on the rest of the system. Unless costs are allocated appropriately and transparently, there is a potential for inefficient investment in intermittent generation. The same principles apply to renewable energy buyback and rebate schemes.

This matter and the related issues are discussed in Section 3.2.

1.4.3 Network access – capital costs and contributions

Network access and connection charges continue to be issues raised by Market Participants. Generators seeking network access are required to pay direct connection costs and may be required to make capital contributions for augmentation to the shared network. The arrangements for determining these capital contributions for shared network assets, known as “deep connection charges”, can have a significant impact on investment in the WEM.

In this Discussion Paper, the Authority considers the key principles for guiding the setting of contribution charges and the key options for a future contribution regime.

The Authority has previously highlighted the interdependencies between the RCM, the connection charging approach and the unconstrained network planning approach.[11] This paper discusses these interdependencies, efficiency considerations and network options.

This matter and the related issues are discussed in Section 3.3.

[10] IMO Market Rules Design Team 2010, Market Rules Design Review: Q & A, Workshop 1, 10 May 2010.

[11] Under the existing ‘unconstrained’ transmission network planning approach used in the SWIS, new generators can only be connected where their connection will not lead to transmission limits being exceeded.

1.5 How to make a submission

Submissions on matters raised in this Discussion Paper or on issues that are impacting on the effectiveness of the WEM in meeting its Objectives should be in both written and electronic form (where possible) and addressed to:

Discussion Paper: Annual WEM Report to the Minister
Economic Regulation Authority
PO Box 8469
Perth Business Centre
PERTH WA 6849

E-Mail: publicsubmissions@erawa.com.au
Fax: (08) 9213 1999

Submissions must be received by **4:00 pm (WST)** on **Friday 23 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 *Economic Regulation Authority Act 2003*.

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 and, in particular, where the submission in whole or part contains information of a confidential nature and no duty of confidence will arise for the Authority in these circumstances.

Further information regarding this Discussion Paper can be obtained from:

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2 Outcomes in the Wholesale Electricity Market

The WEM consists of two components: a capacity market in which providers of capacity are paid for the capacity that they make available, and a wholesale energy market in which electricity market generators and market customers interact to supply and purchase electricity.

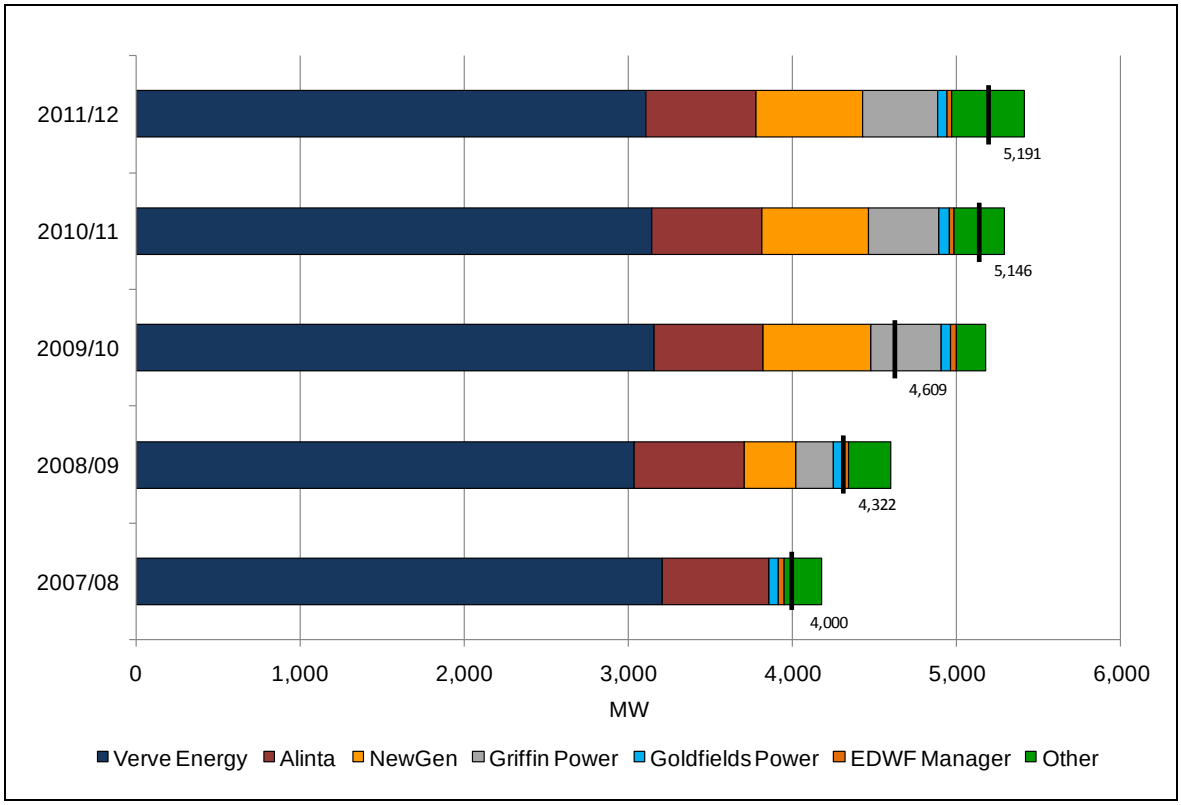
This section provides a brief overview of outcomes in the WEM from market commencement to the end of March 2010, and a review of outcomes in both the capacity market and the energy market.

2.1 The capacity market

The RCM has so far successfully secured sufficient capacity for each Capacity Year up to 2011/12. The IMO reports that projected new capacity entering the SWIS should meet projected demand until 2014/15.[12]

The Capacity Credits assigned to new entrants continues to increase. By 2011/12 Verve Energy is expected to provide around 57 per cent of the total SWIS generation capacity, compared to 90 per cent when the WEM commenced.[13]

Figure 1: Reserve Capacity Credits assigned



[12] See IMO website, Reserve Capacity Mechanism Review Report, May 2009, http://www.imowa.com.au/f875,52032/RCM_ReportV5_PUBLISHED_1_.pdf

[13] See IMO website, Wholesale Electricity Market: Request for Expressions of Interest for the 2010 Reserve Capacity Cycle, January 2010, http://www.imowa.com.au/f177,320491/Microsoft_Word_-_2010_Request_for_EOI_-_Final.pdf

Figure 1 provides a summary of the Capacity Credits assigned to participants in each of the Reserve Capacity Cycles, as well as the Reserve Capacity Requirement (**RCR**) for each year (shown as the vertical black line for each bar). For each Capacity Year, the number of Capacity Credits assigned to participants (in aggregate) has exceeded the Reserve Capacity Requirement. The level of excess capacity credits varies given there are discrete instalments of new capacity – coupled with the decommissioning and de-rating of existing capacity – while demand growth is more linear. Excess capacity credits were 12 per cent of the RCR in the 2009/10 Reserve Capacity Year, compared to 2 per cent of the RCR in 2010/11.

The IMO is currently in the process of securing new capacity that will be available for service in the 2012/13 Reserve Capacity Year. The IMO estimates that the Reserve Capacity requirement for 2012/13 will be 5,632 MW, with a need for 139 MW of additional capacity.[14] A total of sixteen Expression of Interests (**EOI**) for new generation and Demand Side Management (**DSM**) capacity were received by the IMO for the 2012/13 Reserve Capacity Year, totalling 644.3 MW of new capacity potential. Within this total, environmental approvals and network access offers have been completed for 84.6 MW of new capacity. EOI's were received for 57.5 MW of new intermittent generation capacity, 359.1 MW of new non-intermittent generation capacity and 227.7 MW of new DSM capacity.

The Reserve Capacity Prices over the period to the 2012/13 Capacity Year are set out in Table 1. While the Maximum Reserve Capacity Price for the 2012/13 Capacity Year has been determined by the IMO and approved by the Authority, the Reserve Capacity Price effective in the market for 2012/13 will not be known until the assignment of Capacity Credits for that year.

Table 1: Reserve Capacity prices

Period	Reserve Capacity Price (per MW per year)	Maximum Reserve Capacity Price (per MW per year)
21/09/06 to 01/10/06	$127,500.00	$150,000
01/10/06 to 01/10/07	$127,500.00	$150,000
01/10/07 to 01/10/08	$127,500.00	$150,000
01/10/08 to 01/10/09	$97,834.92	$122,500
01/10/09 to 01/10/10	$108,458.57	$142,200
01/10/10 to 01/10/11	$144,235.38	$173,400
01/10/11 to 01/10/12	$131,804.58	$164,100
01/10/12 to 01/10/13	-	$238,500

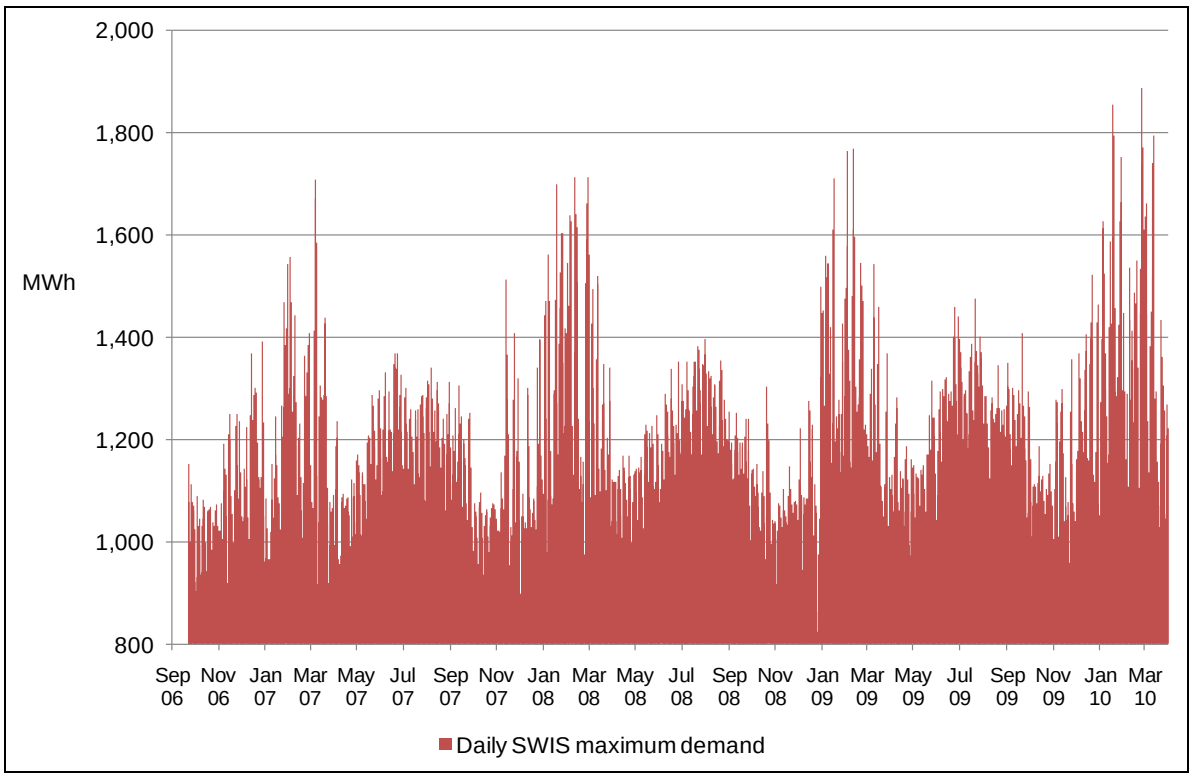
2.2 The energy market

Figure 2 illustrates maximum SWIS demand (measured in MWh per Trading Interval) for each day from 21 September 2006 to 31 March 2010. Peak demand days occur in January, February and March. As shown in Figure 2, there has been a steady increase in

[14] See IMO website, Wholesale Electricity Market: Request for Expressions of Interest for the 2010 Reserve Capacity Cycle, January 2010, http://www.imowa.com.au/f177,320491/Microsoft_Word_-_2010_Request_for_EOI_-_Final.pdf

daily SWIS maximum demand from market commencement (21 September 2006) to 31 March 2010.

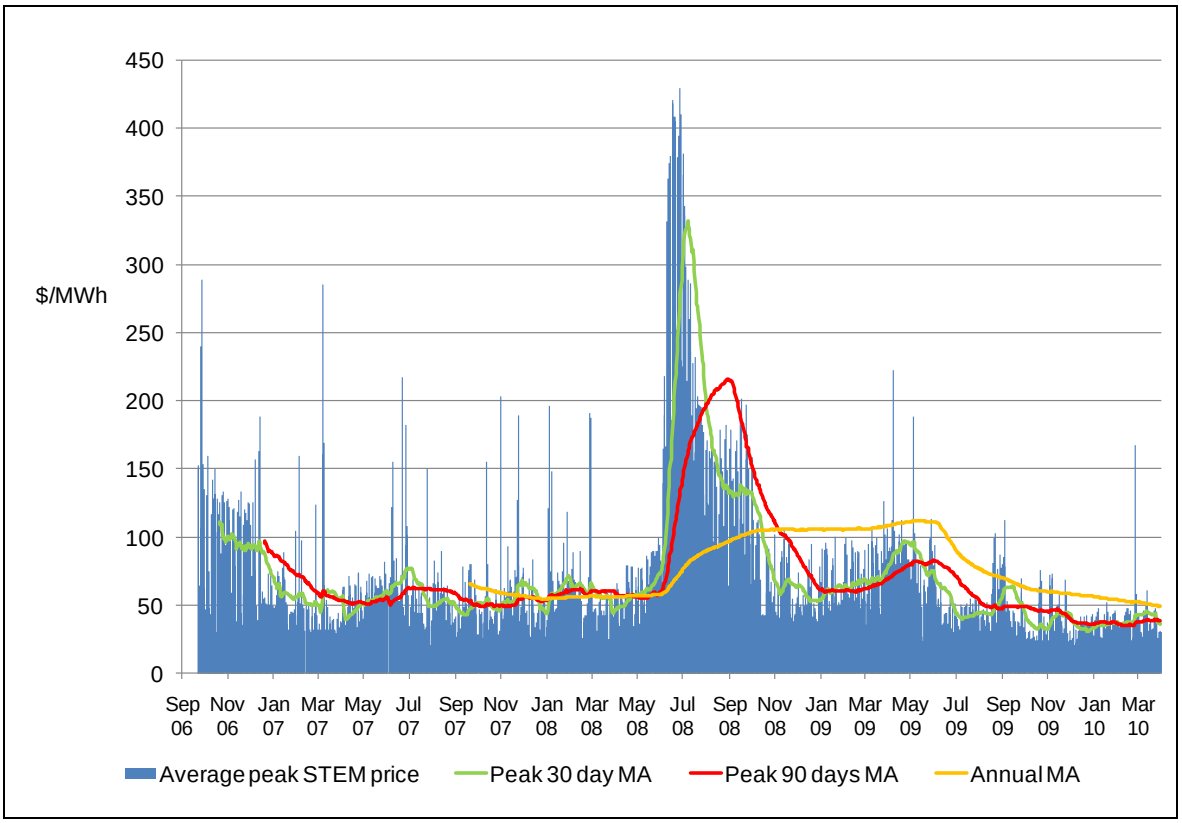
Figure 2: SWIS Trading Interval maximum demand (per Trading Day)



2.2.1 The Short Term Energy Market

Figure 3 illustrates the average daily peak STEM prices for each day from market commencement (21 September 2006) to 31 March 2010, as well as 30-day, 90-day and annual moving averages of these prices.

Figure 3: Average peak period Trading Interval STEM price (per Trading Day)[15]

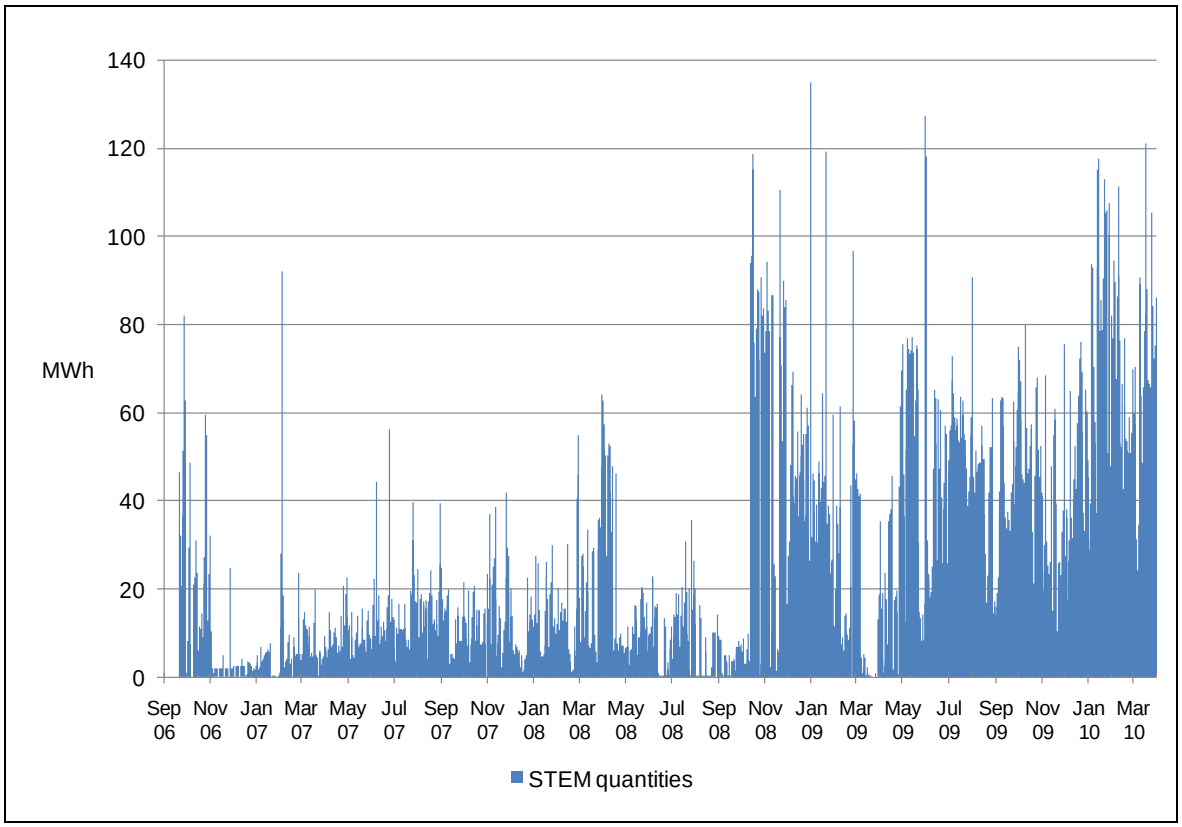


STEM prices were relatively constant in 2007 and in 2008 prior to the Varanus Island incident. Prices then increased significantly in June 2008, peaking at a daily average of $429/MWh for peak periods. Prices have trended down since that time, with a daily average of around $40/MWh for peak periods in 2010. Off-peak period followed a similar trend as can be seen in Figure 6 of Appendix 1.

Average volumes of energy traded in the STEM for each day from market commencement to 31 March 2010 are illustrated in Figure 4. Average trading volumes were relatively constant in 2007 and 2008, until the restoration of gas supply after the Varanus Island incident. During the spring and summer of 2008/09, average trading volumes increased sharply with the last day of 2008 reaching a maximum of 135 MWh. Traded STEM quantities in 2009 and 2010 are generally higher than previous years, reflecting the entry of NewGen and Griffin Power into the market.

[15] The average prices illustrated in Figure 3 are simple averages, not volume weighted averages.

Figure 4: Average Trading Interval STEM quantities (per Trading Day)

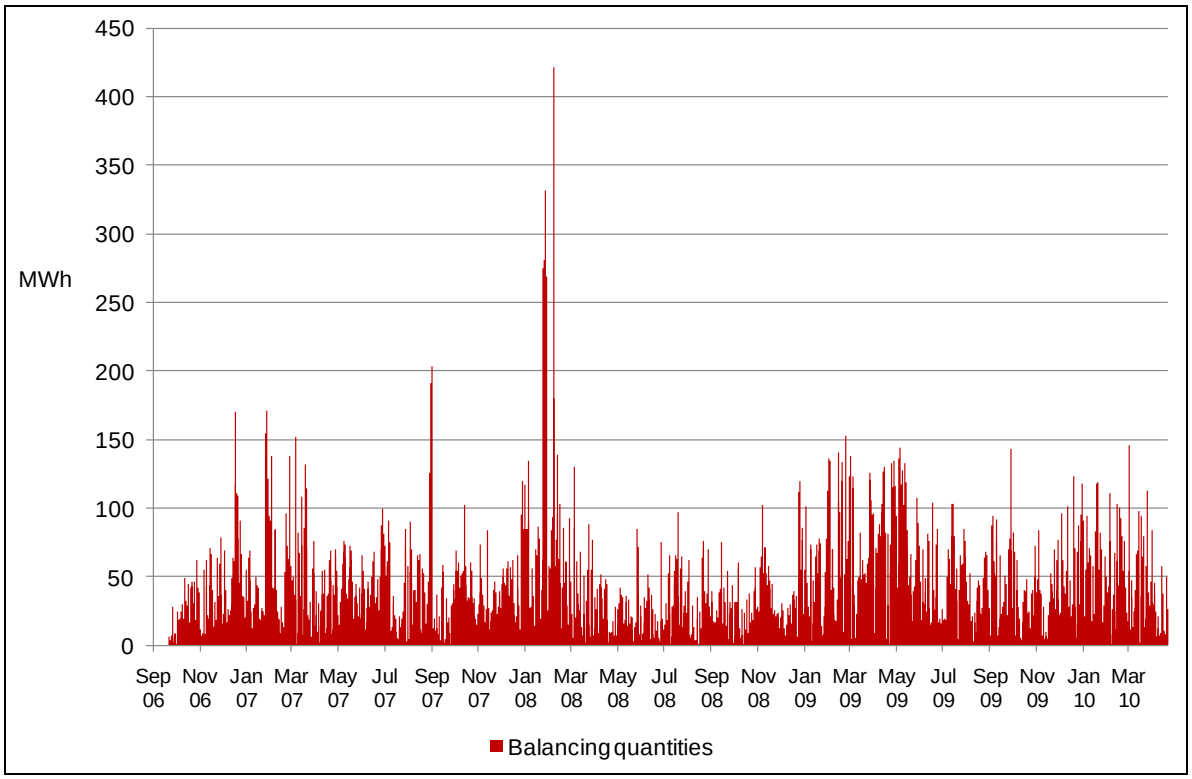


2.2.2 Balancing

Average daily Balancing quantities measured in MWh from market commencement to 31 March 2010 are illustrated in Figure 5. Comparing Figure 4 to Figure 5 shows that Balancing volumes are generally greater than STEM volumes. During February 2008, Balancing volumes spiked at a daily average of 421.2 MWh per Trading Interval, but have been relatively stable since then. Similar to the SWIS daily maximum demand, Balancing volumes tend to be higher during the hot season.

For each Trading Interval a Marginal Cost Administrative Price (**MCAP**) is calculated by the IMO and used to settle purchases and sales of energy in the Balancing market. The MCAP differs from the STEM price in that it reflects the actual system load, any load curtailments and deviations from the Independent Power Producers' planned production. Average daily peak and off-peak MCAPs are displayed at Figure 9 and Figure 10 of Appendix 1.

Figure 5: Average Trading Interval Balancing quantities (per Trading Day)



2.3 The retail market

The electricity market in Western Australia has been progressively opened to retail competition since 1997. Since January 2005, all customers with annual consumption in excess of 50 MWh have been contestable. Currently, there are approximately 20,000 retail customers in Western Australia that are contestable,[16] compared to a total market of approximately 1 million retail customers. Figure 11 at Appendix 1 illustrates the rate at which customers have switched or 'churned' between retailers since market commencement.

[16] See ERA website, 2008/09 Annual Performance Report Electricity Retailers, February 2010, http://www.erawa.com.au/cproot/8362/2/20100215 2008-09 Annual Performance Report Electricity Retailers.pdf

3 Key Wholesale Electricity Market matters

3.1 Strategic considerations for market design review

In previous Reports to the Minister, the Authority has continued to highlight strategic issues in the WEM that needed to be resolved or addressed to ensure that the market would continue to effectively meet its Objectives. The Authority recognises that a range of issues affecting the WEM can be dealt with through existing frameworks. There are, however, a number of market design, regulatory and structural issues affecting the WEM that require high level input from policy makers. These issues include:

- A need for a coordinated strategy – based on a transparent and consultative process – to be put in place for the market's future development.
- The level of uncertainty created by climate change policies and the impact on investment in new capacity.
- The impact of increased intermittent generators on the reliability and future structure of the market, and accounting for the associated costs.

There are several review processes under way in Western Australia that impact on the WEM, including the SEI review, the implementation of recommendations from the Verve Energy Review, IMO Market Rules changes and the Generation Outlook. Further information on these reviews and processes is provided in Appendix 2.

The current reviews can be categorised as assessing changes to adapt the current market design (e.g. rule changes) or adopt a new market design to suit the emerging market situation in order to promote competition in the market.

There are risks involved in undertaking fundamental changes to the design of the WEM (such as an energy-only market). The Authority is concerned that without a rigorous cost benefit analysis, any changes to the market design could lead to inferior outcomes in terms of the market achieving its Objectives. The Authority's continuing view is that, while the market design has been effective in meeting its Objectives, there are opportunities to provide progress towards the better achievement of the Objectives. Outcomes in the WEM reflect increasing competition in both the generation and retail sectors. Independent generators now account for approximately 40 per cent of the market and there are ongoing arrangements in place to ensure supply will meet demand.

Market power mitigation continues to be an issue in electricity markets that have greater maturity and competitive elements (e.g. interconnections, generator diversity) than the WEM. A feature of the WEM is the continuing dominance of Verve Energy, by virtue of its incumbent market position and generation portfolio. The Authority has previously highlighted that any changes to the WEM, including incremental modifications, will raise issues of market power. For example, design changes being considered by the review process include moving the STEM closer to real-time and introducing multiple gate closures ("rebidding").[17] Allowing rebidding has implications for the potential use of market power by dominant participants.

The Authority notes that, to date, there appears to have been no explicit consideration of the impact of design changes on market power mitigation in the WEM. The understanding of the Authority is that market power mitigation mechanisms (including a requirement to

[17] Reduces inefficiencies associated with Balancing services in the current day-ahead WEM.

bid at short run marginal cost) will be considered after recommendations on the redesign of the Market Rules. The Authority considers that during this period of review of key WEM mechanisms, high-level consideration of market power mitigation mechanisms (that suit the SWIS and policy context) are an essential component of market design and need to be integrated into the review processes.

3.2 The Mandatory Renewable Energy Target, renewable energy rebate schemes and intermittent generation

3.2.1 The Mandatory Renewable Energy Target

The original intention of the Federal Government was to introduce a carbon pollution reduction scheme (**CPRS**) in 2011/12, with a $10 fixed permit price. In April 2010, the Government announced that the planned introduction of an Emissions Trading Scheme (**ETS**) will be re-assessed in late 2012, after the conclusion of the current Kyoto commitment period.[18]

Generally, the implementation of some form of carbon pricing (e.g. a CPRS) is likely to provide the best mechanism for having investment and operating decisions take account of the negative externality associated with carbon emissions. In contrast to a CPRS, an expanded MRET deliberately favours certain generation plant technologies over others. The expanded MRET is more likely to promote investment in renewable generating plant (particularly wind) that would not be justified if the prevailing price of carbon was incorporated into the relative generation costs.

3.2.2 Renewable energy rebate schemes

There are two key renewable energy rebate schemes used in Australia for small-scale solar systems. Solar Credits (Renewable Energy Credits) are provided to owners who install new photovoltaic systems and are typically worth around $6,000 for a 1.5kW solar panel.[19] In addition to this upfront rebate, premium rates are paid for the electricity generated by small scale renewable systems. Feed-in tariff (**FIT**) schemes currently operate in all Australian jurisdictions, with the exception of Western Australia and Tasmania. New South Wales and the Australian Capital Territory (ACT) have gross FIT schemes, while the other operating schemes are net tariffs.[20] Western Australia is due to commence a net FIT scheme on 1 August 2010. This scheme will apply to photovoltaic, wind, and micro-hydro technologies at residential premises, with recipients receiving FIT payments for 10 years. The net tariff will be 40c/kWh, which is in addition to the payment from the Renewable Energy Buyback (**REB**) scheme offered through Synergy and Horizon Power. To be eligible for FIT payments, an applicant must also be eligible for and participate in the REB scheme. The REB rate will be a minimum of 7c/kWh from 1 August 2010. The FIT scheme will be reviewed every three years or when the uptake reaches 10MW of new generation.[21]

Balancing the goals of the MRET and renewable energy rebate schemes with economic efficiency is a key issue in the electricity market. REB and renewable energy rebate

[18] K. Rudd P.M., Interview 27 April 2010, http://www.pm.gov.au/node/6708

[19] Department of Climate Change 2010, 'Enhancing the Renewable Energy Target', Discussion Paper, March 2010.

[20] With net tariff schemes, a tariff is paid on all excess electricity exported to the grid, while gross tariff schemes pay for each kilowatt of generated electricity.

[21] See the Office of Energy website, http://www.clean.energy.wa.gov.au/pages/re_feed-in_tariff.asp

schemes (for small-scale generation) may lead to inefficient investment and utilisation of resources. As the number of small-scale renewable generators increases, there may also be power system control and operational issues that need to be addressed in the longer term.

The Authority invites comment on the impact of feed-in tariff and renewable energy rebate/buyback schemes, as they relate to the efficiency, reliability and security Objectives of the Wholesale Electricity Market.

3.2.3 Reserve Capacity and cost allocation for intermittent generation

3.2.3.1 Reserve Capacity for intermittent generation

Stakeholders have previously informed the Authority of their view that the WEM offers stronger incentives for new plant than the energy-only National Electricity Market (**NEM**). Wind plant, in particular, was viewed as benefiting from the RCM. One identified issue is the potential over-allocation of Capacity Credits to intermittent renewable plant that seldom operates at full capacity during peak demand times. The IMO currently grants Capacity Credits to wind farms based on an average output over three years (actual output for existing plant or estimated for new capacity) – typically 37 per cent of installed capacity. In contrast, System Management estimates that the level of output that can be reliably delivered at peak times is around 20 per cent of the installed capacity of a wind farm.[22]

In the 2009 Report, the Authority noted that the treatment of intermittent generation is an issue for the market and that any significant changes to the treatment of intermittent generation in the WEM will have implications for investor certainty. The Authority considers that future changes are more likely to be negative from the perspective of intermittent generation interests. In the 2009 Report, the Authority recommended that the IMO Market Advisory Committee's (**MAC**) Renewable Energy Generation Working Group (**REGWG**) should consider the provision of a clear transition regime to manage such changes. The REGWG is currently assessing the treatment of intermittent generation in the RCM and the reliability contribution of intermittent plant.[23] The REGWG is also examining dispatch, cost incidence, technical rules and the impacts from State and National Policy.[24] The Authority will continue to monitor the progress of the REGWG.

[22] System Management notes that this methodology is in line with the Australian Energy Market Operator, which calculates the capacity contribution of wind farm generation to the NEM during system peak at a 95 per cent level of availability (which accounts for a 5 per cent forced outage rate). System Management 2010, Comments on the Work Package 2 Report 'Valuing the Capacity of Intermittent generation in the SWIS', REGWG Papers, Meeting 12, 27 May 2010.

[23] REGWG 2010, Reserve Capacity and Reliability Impacts – Work Package 2.

[24] REGWG 2010, Work Packages 1-4.

3.2.4 Efficient network utilisation and capacity pricing

A Reserve Capacity Price (**RCP**) is paid per MW per year for Capacity Credits held by generators. The RCP is derived from the Maximum Reserve Capacity Price (**MRCP**)[25] and network connection costs are factored into the determination of MRCP. For the 2010 MRCP, transmission connection costs were 24 per cent of total capital costs.[26]

Installed wind capacity in the SWIS will increase from 190 MW in 2009 to 390 MW in 2011. Currently, the Authority understands that Western Power has access requests for around 3 GW of wind capacity. The majority of proposed wind farms are located at the boundaries of the SWIS, where there is limited spare transmission capacity. Connecting large quantities of wind capacity would require significant network reinforcement.[27]

The WEM's mechanisms[28] and its systems were originally designed to accommodate the current "unconstrained" transmission network planning approach. The rationale for unconstrained connection is linked to system-wide benefits of reliability and security. Under this approach, new generators can only be connected when their connection will not lead to transmission limits being exceeded.[29]

Under the RCM, system reliability and security is premised on having all generators being able to deliver their capacity during peak periods. However, at peak demand times, intermittent generation does not always operate at full capacity. The transmission capacity allocated to intermittent generation is then not fully utilised, as there is no reallocation mechanism of "spare" short-term capacity in the current "unconstrained" approach. The Authority notes that the WEM Market Rules have no direct influence on network utilisation. However, under utilisation of the network does impact on the WEM to the extent that it causes delays of new connecting generation due to the need for network augmentations and results in higher connection costs for new generators.

Looking at market circumstances now and in the near future, in particular a high growth scenario of wind generation penetration, this method of operating the network may not make the most efficient use of the transmission assets in the SWIS. Regarding more efficient use of capacity in the WEM, the Australian Energy Markets Commission (**AEMC**) noted that generators could be connected on a non-firm, or "potentially constrained" basis, rather than being delayed until network augmentation allows unconstrained access.[30] The Authority understands that any move to constrained network connections will have significant operational impacts for the dispatch of generation, which will impact on System Management.

[25] A MRCP is set for each Reserve Capacity Year (Market Rule 4.16.1) and determines the expected cost of new entrant peaking plant and other costs required to establish plant capable of supplying electricity to the SWIS (Market Rule 4.16.4).

[26] The MRCP includes all reasonable costs expected to be incurred in the development of a notional power station, defined in the MRCP Market Procedure as a 160 MW open cycle gas turbine.

[27] System Management 2010, Effects of increased penetration of intermittent generation in the SWIS, January 2010.

[28] In particular, the RCM.

[29] The unconstrained approach requires that a new connection will not lead to network ratings or allocated power transfer capacity being exceeded under the worst credible load and generation patterns and the most critical credible contingency events. See Technical Rules 2.3.7.1(a).

[30] AEMC Final Report 2009. Review of Energy Market Frameworks in Light of Climate Change Policies.

The Authority invites comment on the Reserve Capacity Credit allocation to Intermittent Generators.

3.2.4.1 Cost allocation

The Authority has previously highlighted some of the implications of higher levels of intermittent generation in the SWIS. Most of these implications flowed from the intermittent nature of the energy source and the often remote location of wind generators. The isolated nature and relatively small size of the SWIS means that technical problems, such as frequency and voltage control issues, caused by the significant and rapid penetration of intermittent plant as a result of an enhanced MRET scheme would be amplified.

Another cause for concern with the high levels of intermittent generation is that the SWIS has low levels of overnight load. Rapid penetration of intermittent technologies could have a significant impact on the operational regimes of existing base load plant overnight and, as a result, the reliability of the system. With intermittent generation spilling[31] into the market there may be an increased risk of operational failures if base load plant needs to be decommitted overnight and then fails to start when demand on the system increases the following day. With intermittent generators able to input higher than forecast electricity into the SWIS, Verve Energy, which provides the primary market Balancing role, is exposed to the downside risk, including the costs associated with shutting down and restarting conventional base load generation plant.[32]

Faced with similar issues, the NEM has undergone a series of changes to account for the NEM's wind generation:

- the AEMC enacted a series of changes to essentially introduce a degree of controllability to the output of intermittent generation;[33]
- the NEM's *National Electricity Rules* were amended to establish a new "semi-scheduled" category of generation to allow wind generators to participate in the NEM's central dispatch processes;
- the arrangements for recovering the cost of ancillary services were improved; and
- the AEMC implemented a more advanced wind forecasting system.

Regarding cost-reflectivity in the WEM, the AEMC noted that:[34]

> The recovery of costs could also be reviewed, with the aim of more accurately reflecting costs back to causers. Currently, intermittent generation has no incentive to notify an accurate position to System Management, and is not exposed to any of the costs that its un-notified and variable output creates. (pg. 134)

[31] "Spilling" refers to a generator being able to dispatch its entire energy output into the network as and when it is generating as opposed to being dispatched in accordance with a proposed resource plan/production schedule.

[32] There has been recent acknowledgement that the market designs makes it difficult to move Independent Power Producer's from Resources Plans and therefore contributes to excess overnight supply.

[33] AEMC Public Forum on AEMC Review of Energy Markets in Light of Climate Change Policies: WEM Issues, Perth, 8 May 2009.

[34] AEMC Final Report 2009. Review of Energy Market Frameworks in Light of Climate Change Policies.

The Authority notes that appropriately targeting the relevant costs would lead to increased network and Ancillary Services costs for intermittent generation. As intermittent generation increases in the generation mix, the Load Following Reserve Ancillary Service[35] requirement increases, which in turn has implications for dispatch.[36]

The Authority seeks to better understand the views of stakeholders regarding intermittent generators paying for the costs they impose on the power system. The Authority has previously recommended allocating these costs on a causer pays basis as a means of promoting efficiency and the effectiveness of the market in meeting its Objectives.

The Authority invites comment on the existing and potential impact of intermittent generation on the Wholesale Electricity Market, including the need for cost reflectivity under the existing framework and Market Rules.

3.3 Network access – capital costs and contributions

3.3.1 Background

To participate in the Reserve Capacity Cycle and receive Capacity Credits, potential new generators must have a firm network access offer from Western Power. The *Electricity Networks Access Code 2004* (**Access Code**) requires that queuing rules apply when there are competing applications for new connections. This requirement imposes an administrative process as a rationing device, rather than requiring an efficiency framework for assessing new connections. A major cause for delays in connecting new generators is the length of the network connection applications queue operated by Western Power, which generally operates on a first come first served basis.

Potential generators will only receive a firm network access offer once they have moved towards the top of the queue and have then been assessed (a technical assessment to determine the costs of connecting to the network in the specified location) by Western Power and provided with an access offer. Stakeholders have in the past expressed concerns about the time taken to receive a network access offer from Western Power, which could delay participation in the RCM and possibly discourage generation investment more generally.

The queuing system raises issues regarding not only the timing of access offers but also the costs arising from augmentation of the shared transmission network to facilitate the connection of a new generator or load. These costs are commonly referred to as “deep connection costs” and will be referred to as such herein.

[35] Market Rules define ‘Load following’ as the primary mechanism in real-time to ensure that supply and demand are balanced. Load following accounts for the difference between scheduled energy and actual load and intermittent generation. Load following resources must have the ramping capability to pick up the load ramp between scheduling steps as well as maintain the system frequency.

[36] With the introduction of the Collgar wind farm, System Management estimates that the Load Following Reserve requirement needs to increase from +/- 60 MW to +/- 150 MW (McLennan Magasanik Associates 2009. Margin Peak and Margin Off-Peak review, Final report v4.0, 10 December 2009). ROAM Consulting estimated that the Load Following Reserve requirement could increase from +/- 60 MW to as high as +/- 300 MW in 2030, depending on the location and added capacity of wind farms (ROAM Consulting 2010. Scenarios for Modelling Renewable Generation in the SWIS, March 2010).

3.3.2 Capital contributions for shared network assets

An issue related to connecting generators requiring a network access offer is the charging of contributions for the associated costs of shared network assets. Stakeholders have noted in the past that these contributions may apply for new connecting generators depending on the order their network access applications are dealt with in the Western Power queue. In requiring an applications and queuing policy the Access Code has inadvertently created potential inefficiencies in dealing with applications. With the "first come first served" policy, access offers to new generation may not be processed using efficiency or net benefit criteria and may also not be timely. The Authority is aware that Western Power is in the process of addressing some of the queue issues and has proposed changes to its Application and Queuing Policy.[37]

Currently, Western Power is required to determine contributions for augmentations to the shared network taking into account the New Facilities Investment Test (**NFIT**), which determines the value of the augmentation that should be recovered by network tariffs and the value that requires a contribution from the party seeking access. The Authority is aware that Market Participants have previously raised concerns that there is a lack of transparency and rigour in the current process for determining the contribution for deep connection costs.

Stakeholders have previously put forward the view that Western Power does not sufficiently consider the net benefits component of the NFIT when applying the test to determine deep connection charges triggered by new generation-driven network investment. The application of the NFIT by Western Power has in the past not explicitly taken into account the benefit that third parties (those who generate, transport or consume electricity) might receive in facilitating the connection of new generators.

The Authority has no direct role in the process of determining the contribution paid by connecting generators. Western Power may, if it so wishes, lodge an NFIT application with the Authority to determine the value of the augmentation investment which can be added to the network capital base[38] and hence indirectly identifies the contribution that should be charged (i.e. the costs that do not meet the NFIT).

If Western Power does not seek an NFIT pre approval, the Authority will assess the new facility investment at the time it next considers proposed revisions of Western Power's Access Arrangement. However, the Authority does not assess whether the past level of contributions (including for deep connection charges) was appropriately calculated other than for the purpose of ensuring that only expenditure that passes the NFIT is rolled into the capital base.

3.3.2.1 Determining an efficient capital contributions methodology

Broadly, the Authority notes that the Access Code objective provides guidance for Western Power in the setting of network connection charges. It encapsulates the principles of efficiency, equity, and good regulatory practice.

Efficiency, in this context, refers to the setting of prices in such a way so as to maximise the net benefits to society. Efficient pricing can ensure that:

[37] Western Power released the 'Proposed Revisions to the Applications and Queuing Arrangements for access to the South West Interconnected Network' in December 2009. Stakeholder submissions were invited, with a closing date of 12 February 2010.

[38] The network capital base is a key element in the determination of network tariffs, given Western Power receives a rate of return on the asset value and a return of the depreciated value of these assets.

- services are provided at least cost (technical or productive efficiency);
- resources are allocated to their most productive use in the Western Australian economy, by setting prices that reflect the opportunity cost of the resources (allocative efficiency); and
- investments are optimal over the long term, in their timing and location (dynamic efficiency).

In addition, the principles of good regulatory practice relate to how a regime of contribution charges is implemented, including the degree of public consultation, independent scrutiny, and the transparency of the charging methodology.

An important efficiency principle, in the case of connection charges, is the establishment of a link, or nexus, between the charges faced by a new connecting generator and the net costs/benefits of this connection. This nexus is clearer for some types of costs than others. For example, it is appropriate that the generator pays for the direct transmission connection assets as the need for the expenditure is entirely driven by the project. However, in respect of investment in shared transmission assets, the electricity end users in part create a need for these investments and share the benefits from those investments. It is then more difficult to accurately identify the contribution new connecting generators should make towards investing in shared transmission assets.

In the AEMC review of the impact of climate change policies on the NEM and the WEM, the AEMC made a number of recommendations for the WEM, including improvements to the efficiency of the network charging methodology.[39]

Economic and best regulatory practice principles require capital contributions to be based on a transparent and easily understood methodology, which is stable and predictable. While noting that deep connection charges were considered by some stakeholders as an integral part of effective locational signals, the AEMC considered that the transparency and effectiveness of such signals could be improved.

3.3.2.2 Future charging options

The key options for a connection charging regime are:

- stay with the status quo with Western Power determining deep connection charges, albeit with increased transparency in the charging process; or
- move to a shallow connection charges regime, which could include a process for smearing costs across users.

In the 2009 Minister's Report, the Authority noted that one future option would be a move away from deep connection charges to a shallow connection charging regime. Under such an approach, new generators are only required to pay for the direct costs of infrastructure required to connect their plant to the existing transmission system and not the costs of downstream augmentations needed to ensure that network capacity for other generators is not diminished. However, arrangements would need to be implemented to allocate the costs of new shared network augmentations (presently recovered through deep connection charges).[40] For example, the costs of such shared augmentations could be 'smeared' across all network customers. In this instance, Western Power would be required to (at least partly) fund new network infrastructure and recover the costs through

[39] AEMC Final Report 2009. Review of Energy Market Frameworks in Light of Climate Change Policies.

[40] Without deep connection enhancements, a new generator could be able generate to meet its load at the demand centre, while another generator could be unable to generate because of lack of network capacity.

tariffs. New investment may then be delayed because of funding constraints on Western Power.

Moving to a shallow connection charging regime, with a constrained network planning approach, would result in an immediate ability to connect new generators without associated augmentation costs. However, moving to a constrained approach would reduce the reliance that could be placed on generators being able to deliver the energy during peak periods of demand (a critical aspect of the RCM) and require modifications to network planning criteria and the RCM to ensure there is no reduction in the reliability/security of the electricity system for end users.

If a constrained network approach is adopted then the RCM and capacity payment process needs to be redesigned. In the current unconstrained model, system reliability and security is premised on all generators being able to deliver their capacity during the peak period, i.e. to meet maximum demand, which then determines how much generating capacity receives capacity credits. Generators are paid if they offer/make available all their capacity to the market for each half-hour trading interval. The Authority notes that determining the net benefits of the network planning approaches and an efficient connection charging regime would require extensive analysis (both qualitative and quantitative) by an appropriate agency.

Because of the potential interdependencies between the deep connection charging approach and the network planning approach, the Authority recommended, in the 2009 Minister's Report, that the appropriate approach for deep connection charges be considered as part of changes to the network planning approach and should occur within the context of a broader review of network planning undertaken pursuant to the Authority's proposed WEM Future Strategy process.

In the most recent MRCP determination,[41] the Authority recommended that the IMO should give due consideration to the procedure that requires Western Power to estimate network connection costs (which include deep connection costs), particularly in respect of ensuring that estimated network connection costs (charged to generators) do not include the costs that meet the NFIT prescribed in the Access Code[42] and which can then be recovered through tariffs charged to network users.

Network pricing aspects (including transmission connection characteristics) are being reviewed within the IMO's five yearly review of the methodology and process for determining the MRCP. The MRCP Working Group is assisting the IMO in this review and anticipates that draft results will be presented in September 2010.[43]

[41] See ERA website, Decision on the Maximum Reserve Capacity Price proposed by the Independent Market Operator for the 2012/13 Reserve Capacity Year, http://www.erawa.com.au/cproot/8314/2/20100129 Decision on the Maximum Reserve Capacity Price proposed by the IMO for the 2012-13 Reserve Capacity Year.pdf

[42] The NFIT is set out under section 6.52 of the *Access Code*.

[43] MRCP Working Group 2010, Draft MRCPWG Work Programme Calendar, http://www.imowa.com.au/MRCPWG

The Authority invites comment on the current framework for network access and the determination of capital contributions for augmentation to the shared transmission network provided by Western Power. In particular:

- **the impact that the current framework has on the effectiveness of the Wholesale Electricity Market;**
- **the impact on investment decisions, given the level of transparency and predictability in the current network access and connection charging regime; and**
- **the appropriate methodology for recovering transmission augmentation costs triggered by new generation in the South West interconnected system.**

APPENDICES

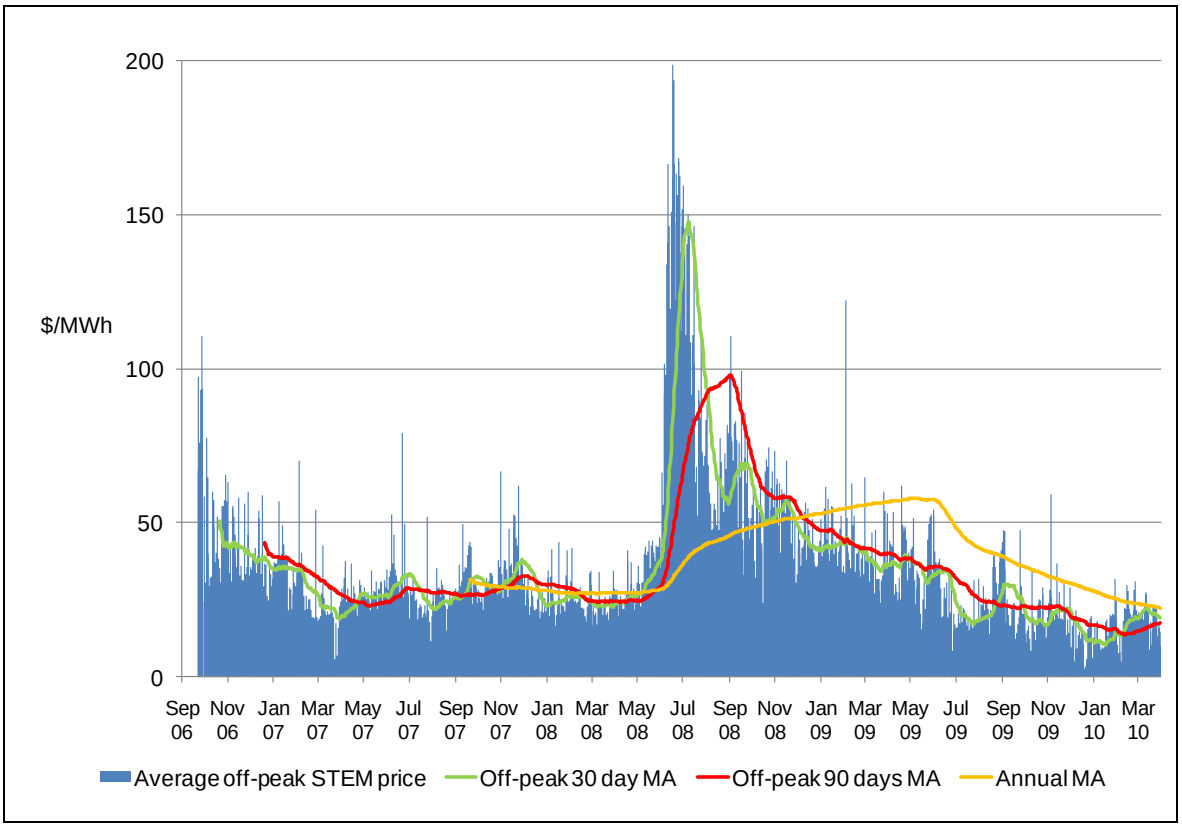
Appendix 1 Summary of Market Surveillance Data Catalogue

The Short Term Energy Market

Figure 6 illustrates the average daily off-peak STEM prices for each day from market commencement (21 September 2006) to 31 March 2010, as well as 30-day, 90-day and annual moving averages of these prices.

STEM prices were relatively constant in 2007 and in 2008 prior to the Varanus Island incident. Prices then increased significantly in June 2008, peaking at a daily average of $198/MWh for off-peak periods. Prices have trended down since that time, with a daily average of around $17/MWh for off-peak periods in 2010.

Figure 6: Average off-peak Trading Interval STEM price (per Trading Day)



The major buyers in the STEM have varied significantly since the commencement of the market. Alinta was an active buyer from February 2007 until June 2008. Although other purchases were made subsequent, it wasn't until September 2009 that Alinta again became a major buyer. Griffin Power has been a notable major buyer since March 2009 up to the present day, while Verve Energy has been consistently active since market start with a noticeable increase in STEM volume purchased throughout the months of summer 2008/09. Figure 7 illustrates weekly average quantities bought in the STEM by Market Participants.

Figure 7: Average Trading Interval STEM quantities bought, by Market Participant (per Trading Day)

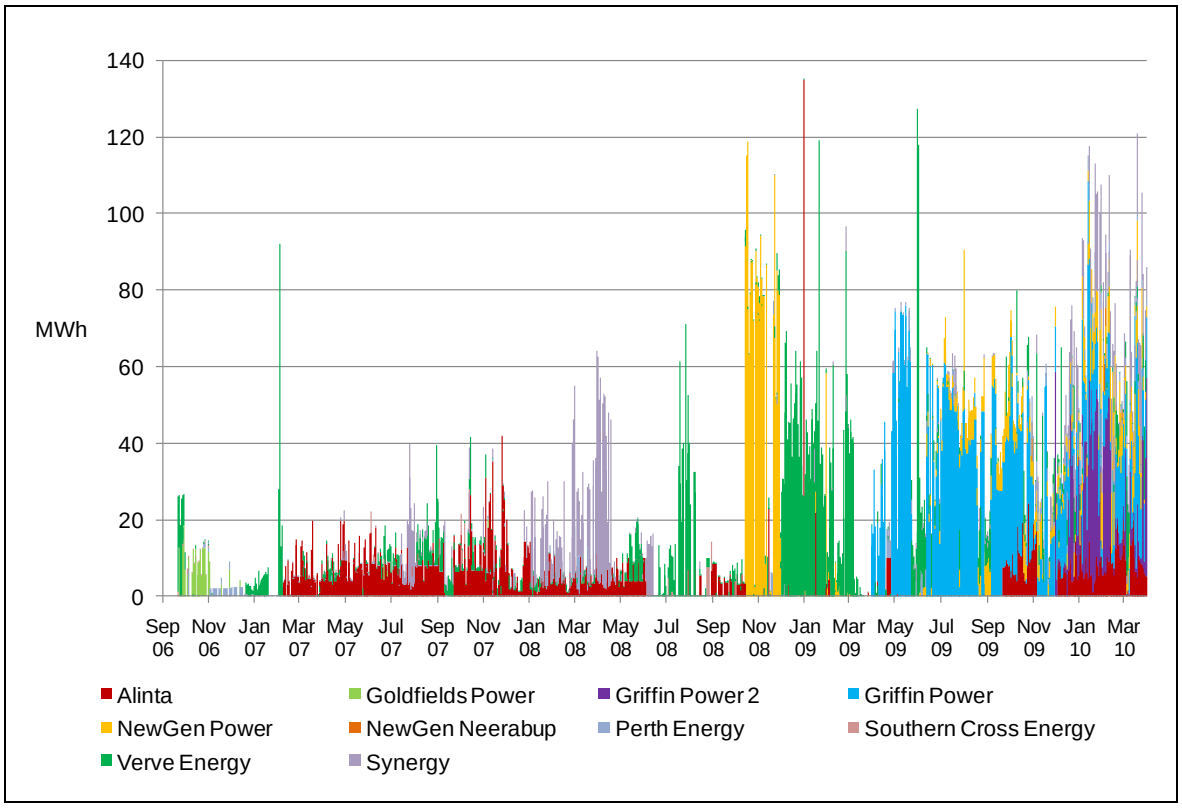
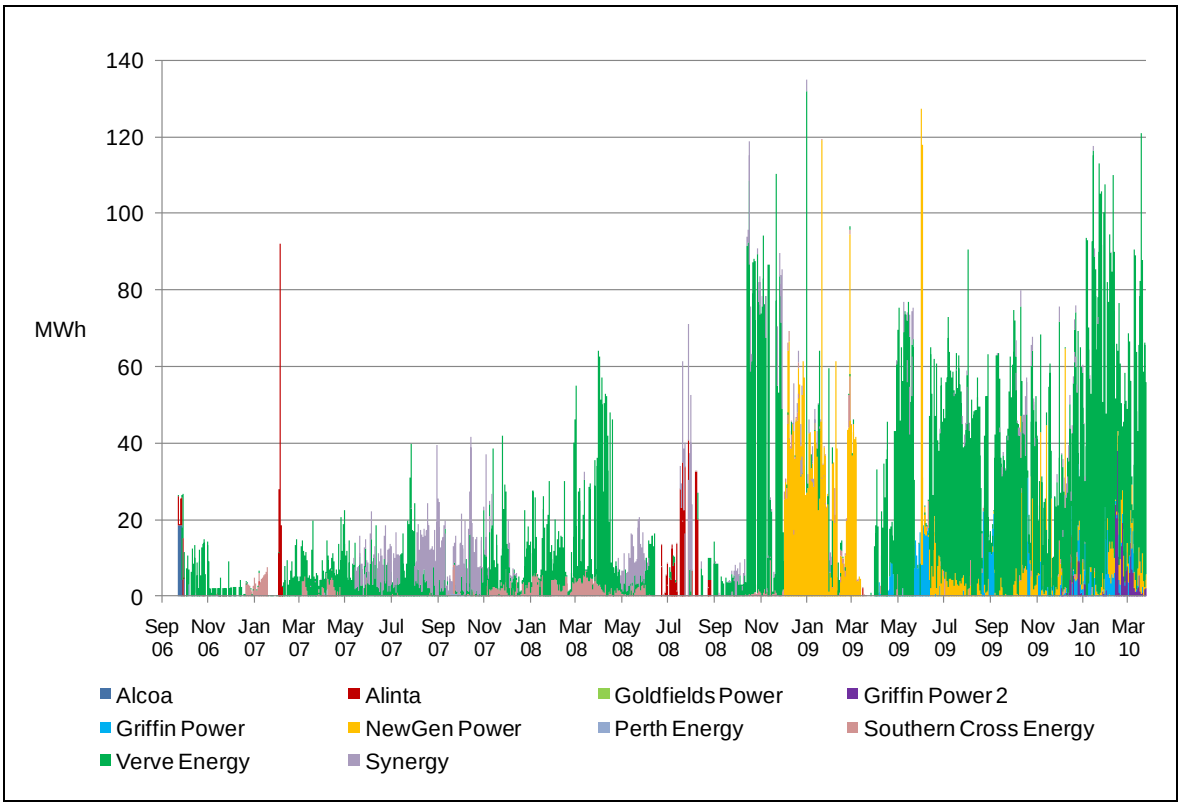


Figure 8 illustrates weekly average quantities sold in the STEM by Market Participants. Verve Energy is clearly seen from the commencement of the market as selling the greatest share of volume traded in the STEM. With sales starting in December 2008 NewGen Power has accounted for the next largest share of volume sold in the STEM since market start.

Figure 8: Average Trading Interval STEM quantities sold, by Market Participant (per Trading Day)



Balancing

Figure 9 and Figure 10 illustrate, respectively, the average daily peak and off-peak MCAP for each day from market commencement to 31 March 2010, as well as 30-day, 90-day and annual moving averages of these prices. The MCAPs have broadly followed a similar pattern to STEM prices. Both peak and off-peak MCAPs were relatively constant in 2007, before increasing in the period following the Varanus Island incident. MCAP's have subsequently returned to lower levels with average prices at or below those experienced before the Varanus Island incident.

MCAPs exhibit greater variability than STEM prices. Both peak and off-peak MCAPs have more frequent (and relatively higher) spikes than STEM prices, reflected in greater variability in the 30-day moving averages for MCAP, compared to the moving average for STEM prices.

Figure 9: Average peak Trading Interval MCAPs (per Trading Day)[44]

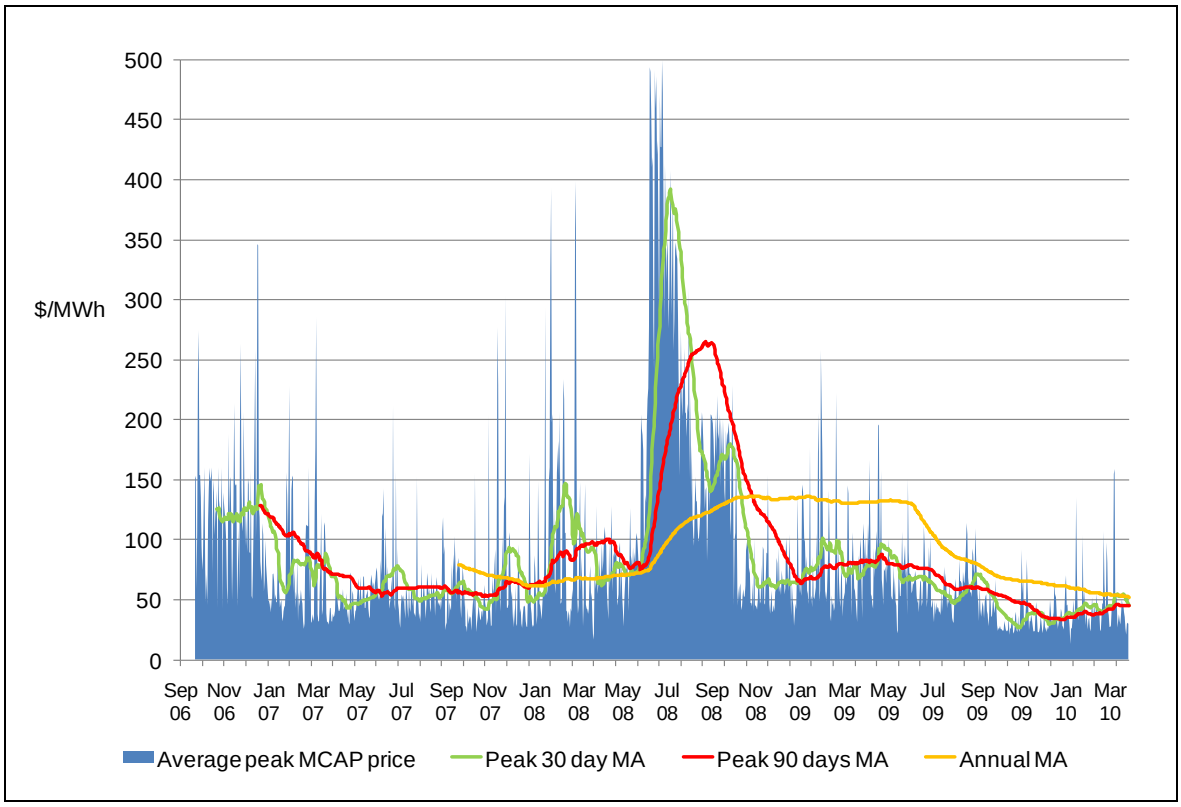
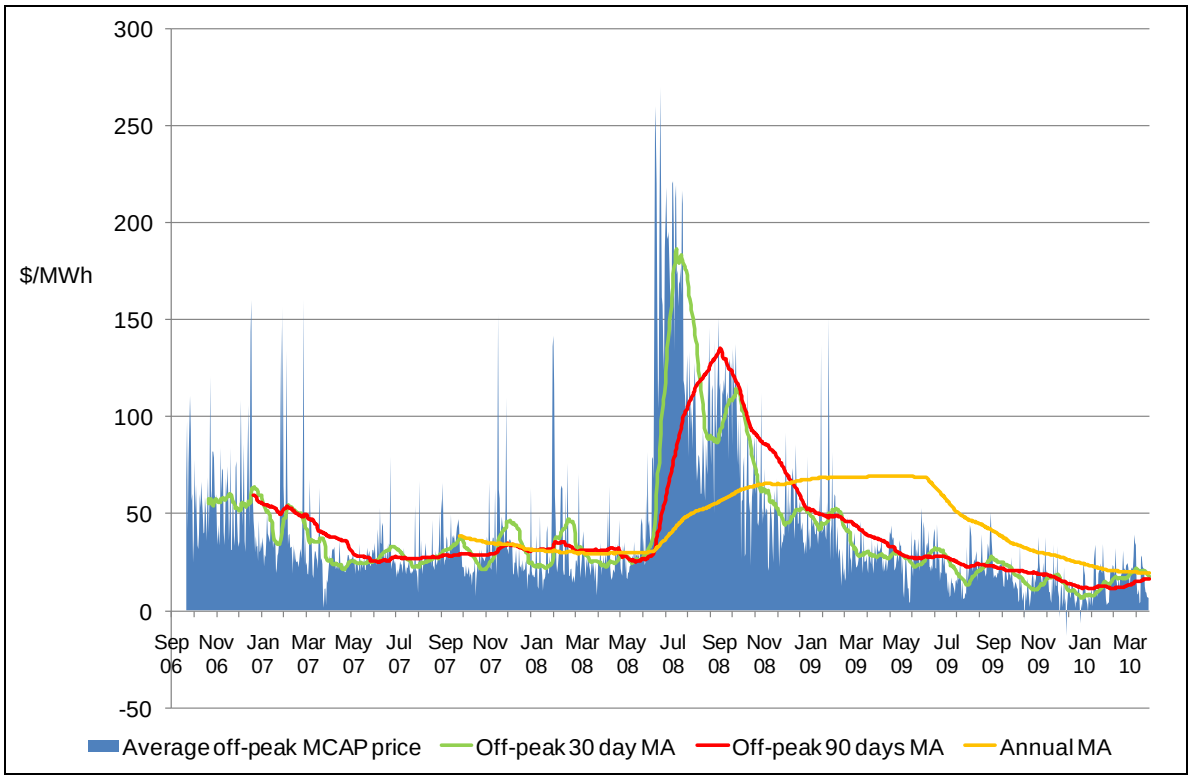


Figure 10: Average off-peak Trading Interval MCAPs (per Trading Day)

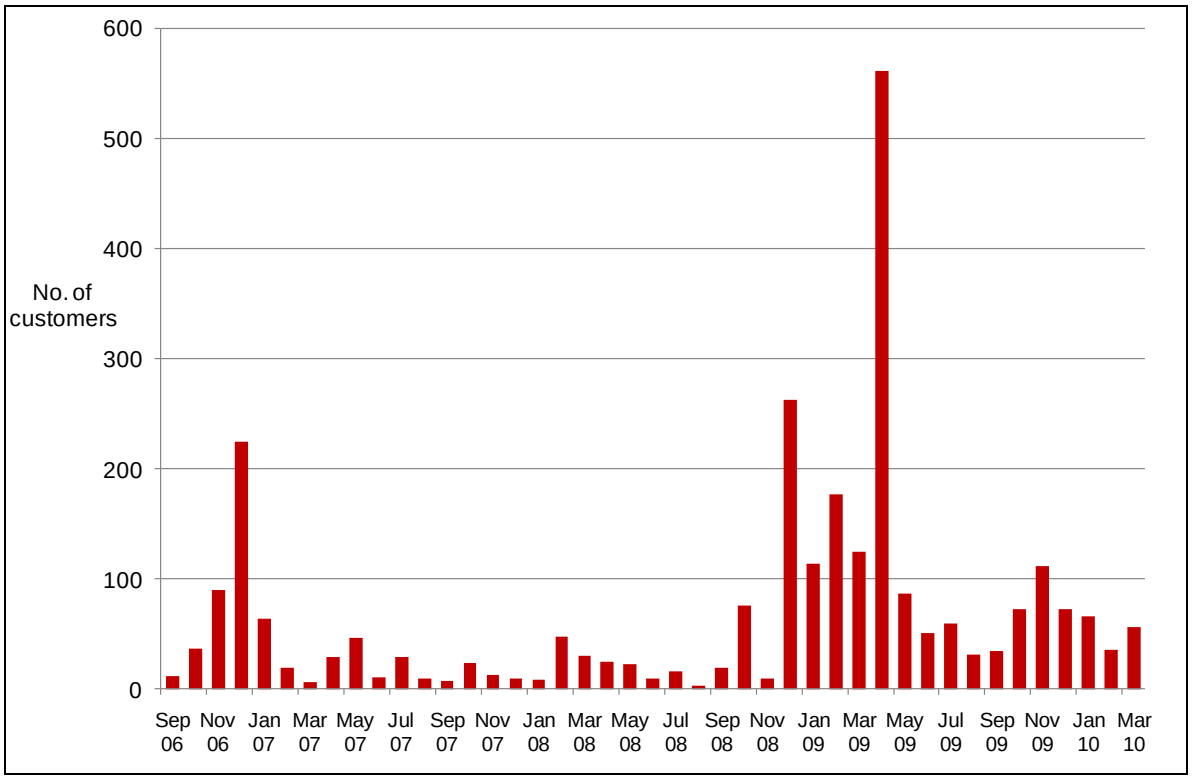


[44] The average prices illustrated in Figure 9 and Figure 10 are simple averages, not volume weighted averages.

The Retail Market

Levels of customer churn spiked in the first few months following market commencement, with over 200 customers churning in December 2006. Churn rates then moderated and remained relatively low throughout 2007 and the majority of 2008. Since December 2008, average monthly churn rates have increased, which may reflect the Government's announcement of tariff increases that took effect during 2009. Churn rates spiked in April 2009, reaching a peak of 561 customers before moderating again, although at average rates greater than pre December 2008 levels.

Figure 11: Customer churn[45]



[45] Customer churn is measured by the number of National Meter Identifiers (NMIs) transferred between retailers.

Appendix 2 Current initiatives and reviews

There are several initiatives and reviews underway by different organisations, primarily originating in Western Australia, that impact on the WEM. This section outlines these initiatives and reviews.

Strategic Energy Initiative

The Government has commenced work on the SEI for the development of the energy sector in Western Australia out to 2030. In the Office of Energy's SEI Issues Paper (December 2009), the stated key objective is to outline those policies and initiatives that will improve the reliability of our future energy systems, noting that electricity supply reliability is a major problem for customers located in remote areas or at the edge of power grids.

Regarding competition, the Office of Energy identified issues including reforms to the WEM to improve the efficiency of the market and the appropriateness of longer term State Government ownership of major energy corporations (Verve Energy, Synergy, Western Power and Horizon Power) while it is facilitating the development of competitive energy markets.

Verve Energy (Oates) Review implementation

The Minister for Energy has commissioned a committee to implement the recommendations of the Oates Review.[46] This work includes changes to the Market Rules, replacing the Vesting Contract between Synergy and Verve Energy, and developing a Generation Outlook.

In the 2009 Minister's Report, the Authority emphasised that the current design of the market is only one and a potentially minor factor affecting Verve Energy's financial performance. In the Authority's view, the key factor impacting the financial performance of Verve Energy is the lack of cost-reflectivity in regulated retail tariffs in Western Australia. While changes to the Vesting Contract could re-assign this financial impact, or part of this financial impact, to Synergy, financial losses will still be incurred at some point along the supply chain. Analysis in the Oates Review suggests that the combined effect of increases in retail tariffs and a subsidy for any shortfall between retail tariffs and cost-reflective tariffs would be sufficient for Verve Energy to return a profit.

Market Rules review

The recommendations of the Oates Review and the IMO's Market Rules Evolution Plan (**MREP**)[47] identified the need for an evaluation of the Market Rules for a number of aspects of the WEM's design. As a consequence of these two streams of work, the Market Rules Design Team (**MRDT**) was established to undertake an evaluation of the common short term issues that have been identified. Changes to the Market Rules relating to day ahead planning and real time dispatch reflected in the operation of the STEM, Balancing market and Ancillary Services are being considered.

[46] See Office of Energy website, Verve Energy Review – August 2009, http://www.energy.wa.gov.au/cproot/1571/14895/Verve Energy Review Final Report August 2009.pdf

[47] The Market Rules Evolution Plan reflects the IMO's most important Market Rules evolution issues to be addressed over the coming three years. See IMO website, http://www.imowa.com.au/rule-changes

The MRDT members include representatives from the IMO,[48] System Management and Oakley Greenwood consultants (for the Oates Review Committee). The MRDT coordinates its interactions with stakeholders through the IMO's existing arrangements, including its MAC.

The MRDT has released a concept paper setting out four options to improve the arrangements with the Market Rules. These options include enhancements to the current 'hybrid' design or moving to a gross or net dispatch arrangement.[49] Public and industry consultation on these concept options is ongoing.

Generation Outlook

On 23 April 2010, the Minister for Energy announced the development of a Generation Outlook. The Minister for Energy said:

> The Generation Outlook is crucial to ensure the Government has the ability to identify emerging power issues before they arise and to make the necessary adjustments to policy and market settings.
>
> The plan is not intended to see a return to centralised decision-making, rather it will provide the Government and industry with a better medium-term outlook for the sector as a whole.

Vesting Contract review

The review of the Vesting Contract is nearing completion and it is anticipated that a new Contract will be in place by late 2010. The new Contract is expected to be priced at commercial levels.

Independent Market Operator reviews

- The program for the IMO's MREP has two broad categories:
  - short term issues, including improving the STEM and the Balancing mechanism, closer alignment of gas and electricity nominations and introducing markets in ancillary services. These issues are being addressed in conjunction with the Oates Review Committee/MRDT; and
  - the medium term issue of reviewing the RCM, which is scheduled for commencement in 2011.
- The IMO MAC's Renewable Energy Generation Working Group was nominated on 12 March 2008. The group's scope is to consider and assess system and market issues arising from the increase in the national MRET to 45,000 GWh by 2020. In particular, the REGWG focuses on issues related to intermittent renewable energy generation; Capacity Credits allocated to intermittent generators through the RCM; and the impact on demand for ancillary services and system security at times of low load.
- The IMO MAC's MRCP Working Group. Each year the IMO is required to conduct a review of the MRCP. The Market Procedure for the determination of MRCP

[48] The IMO's consultant, Concept Consulting, is also a member of the MRDT.

[49] See IMO website, Oates Review Implementation Concept Paper version 2.0 (April 2010), http://www.imowa.com.au/Design_Review

details the methodology and process for determining the MRCP.[50] The IMO is required to review this Market Procedure at least once in every five year period (Market Rule 4.16.9). To assist in undertaking this five year review, the MAC has agreed that the MRCP Working Group be established to consider, assess and develop any necessary change to the Market Procedure during 2010.

The Australian Energy Market Commission's Review of Energy Market Frameworks in Light of Climate Change Policies

In the AEMC review of the impact of climate change policies on the NEM and WEM, the AEMC made a number of recommendations for the WEM.[51] In addition to those discussed earlier (network augmentations), these included:

- Assessing the inefficiency cost of the current Balancing regime, considering greater transparency in Balancing dispatch decisions and the introduction of competitive Balancing.
- Scheduling intermittent generation – intermittent generators would be required to submit a notified position and any divergence would be settled using deviation prices rather than MCAP. A fundamental element of this option would be the facilitation of more accurate Resource Plans for wind generators, perhaps through the production of deemed schedules from a centralised wind forecasting system or by moving gate closure closer to real time.
- A review of the Network access queuing process.

[50] See IMO website, http://www.imowa.com.au/f711,414698/Market_Procedure_for_Maximum_Reserve_Capacity_Price.pdf

[51] AEMC Final Report 2009. Review of Energy Market Frameworks in Light of Climate Change Policies.

Appendix 3 Acronyms

AEMC	Australian Energy Market Commission
CPRS	Carbon Pollution Reduction Scheme
DSM	Demand Side Management
EOI	Expression of Interest
ETS	Emissions Trading Scheme
IMO	Independent Market Operator
MAC	Market Advisory Committee
MCAP	Marginal Cost Administrative Price
MRCP	Maximum Reserve Capacity Price
MRDT	Market Rules Design Team
MREP	Market Rules Evolution Plan
MRET	Mandatory Renewable Energy Target
MSDC	Market Surveillance Data Catalogue
MW	Megawatt
MWh	Megawatt hour
NEM	National Electricity Market
NFIT	New Facilities Investment Test
REB	Renewable Energy Buyback
RCM	Reserve Capacity Mechanism
RCP	Reserve Capacity Price
RCR	Reserve Capacity Requirement
REGWG	Renewable Energy Generation Working Group
SEI	Strategic Energy Initiative
STEM	Short Term Energy Market
SWIS	South West interconnected system
WEM	Wholesale Electricity Market