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Dear Lyndon

DISCUSSION PAPER: ANNUAL WEM REPORT TO THE MINISTER

Thank you for providing us with the opportunity to comment on your Discussion Paper regarding the Annual Wholesale Electricity Market Report to the Minister for Energy.

Attached please find the Independent Market Operator's comments on the Discussion Paper. I would welcome the opportunity to discuss with you our submission and other issues which arise in developing your report to the Minister for Energy.

Yours sincerely

ANNE NOLAN
CHIEF EXECUTIVE

7 September 2007

INDEPENDENT MARKET OPERATOR

COMMENTS ON DISCUSSION PAPER: ANNUAL WEM REPORT TO THE MINISTER

In general, the Independent Market Operator (IMO) supports the preliminary assessment and views expressed by the Economic Regulation Authority (ERA) on the key issues addressed by the paper. The IMO, like the ERA, considers that, in the absence of compelling evidence of fundamental problems with the design or the operation of the Market, it would be inappropriate to recommend fundamental changes to the Market at this early stage.

The IMO considers that this view is reinforced by the fact that the report, and comment from participants, focus mainly on procedural issues. These are of course important, but any fundamental change should also be guided by the Market outcomes and by the achievement, or not, of the Market Objectives. Twelve months operational data does not, in our view, provide sufficient direction for significant change.

Successful Market Start

The IMO would like to draw to your attention its report "Wholesale Electricity Market: Electricity Trading 2006/07" (attached) which provides an overview of Market developments and outcomes since the commencement of electricity trading on 21 September 2006.

This report notes that it is early days for the Market and market trends will take time to evolve. Nevertheless, strong positive developments in the industry are underpinned and highlight the successful commencement of the Wholesale Electricity Market.

The Market Objectives, set by the Electricity Industry Act 2004, provide strong guidance to the IMO and to the way it does business.

However, the responsibility for achieving these objectives extends well beyond the operations of the IMO. There are many influences and factors, which will impact on the effectiveness and efficiency of the Market.



These significant and far reaching industry objectives will take time to be fully realised. However, the Wholesale Electricity Market has already contributed towards the achievement of these objectives.

- Sufficient capacity has been secured to meet peak demand over the next three years, despite higher than previously expected peak demand growth.
- Market generators are placing strong focus on plant maintenance and availability, and forward scheduling of outages.
- The Market has attracted strong interest by investors, and the number of generators and retailers is increasing.
- At Market start Verve Energy accounted for around 90% of the capacity credits in the Market, by 2009/10 this percentage will be approximately 60%, with three new Market Participants having significant generation capacity.
- New entry in the Market emerges with a variety of plant sizes, technologies and fuel types.
- The Market has encouraged a number of cost efficient plant upgrades.
- Renewable energy contribution has substantially increased.

- The Market has enabled more cost reflective prices, including by recognising the cost of energy during system peaks.
- Risk mitigation strategies of Participants have been enhanced to reduce exposure, including by effective measures to reduce customer contribution to system peaks.

The above demonstrates that good progress has been made towards the achievement of the Market Objectives, and supports the ERA's view that in the absence of critical issues with the operation of the Market, it would be inappropriate to recommend substantial changes to the Market design at this early stage of market operation.

Effectiveness of IMO

However, while the IMO is supportive of the ERA's preliminary assessment and approach, it would like to clarify a number of issues raised in section 5.8 "Effectiveness of the IMO in carrying out its functions".

Adequacy of IT infrastructure

The IMO understands that some Rule Participants have commented that they considered that the IMO's IT systems are in need of upgrading.

The IMO would suggest that four market suspensions in the first year, given the nature of the market, is not indicative of lack of effectiveness.

The IMO would also draw to the ERA's attention that the fifteen-month development timetable for the IMO IT systems was one of the shortest timeframes achieved in the development of wholesale electricity market systems across the world.

A further key objective during the development and implementation of the Market was to minimise the implementation costs of the wholesale market systems while maintaining the Market effectiveness.

The IMO understands that its IT systems have significantly lower costs than other market systems implemented across the world. The principal gains of this were - lower overall cost of market implementation, and lower transition and ongoing costs for all Market Participants.

The IMO IT systems will evolve and be upgraded over time. The IMO is keen to obtain Participant's views as to which aspects of the systems need to be improved and the priority they place on these changes. The IMO established, in early 2007, a Change Management Working Group of all Market Participants to provide input on system changes. All system changes are subject to a cost benefit analysis.

At this early stage of market evolution changes will be focused on areas where there is support from the majority of Market Participants and there are clear efficiency gains and improvements to system effectiveness.

Usability of the IMO's IT system

The IMO understands that some Rule Participants have commented that they have been unable effectively to use the IMO's IT systems. For example, some Rule

Participants noted that the WEM Interface is difficult to use and lacks a comprehensive instruction manual.

The IMO conducted extensive system training and trials in the lead up to market start. It acknowledges, however, that new Participants and new Participant staff enter the new market regularly. The IMO has recently completed three two-day training programs which focused on the design and use of the Wholesale Electricity Market systems, including system interfaces. Further training sessions will be provided on a regular basis.

User guides, including Market Participant Interface User Guides, are available through the system reporting interfaces and on the IMO web site. The IMO plans to enhance and regularly update these User Guides and welcomes suggestions that would assist in improving their usability.

Invoicing

The IMO understands that some Rule Participants considered that there was a lack of transparency in the IMO's invoices, and raised concerns about invoice errors. The IMO offers the following detailed responses to these two separate issues:

Invoice Transparency

As prescribed under the Market Rules, the Wholesale Electricity Market settlement processes are relatively complex. This is quite normal in markets with relatively simple dispatch processes, where complexity is transferred to settlement resulting in significant volume of internal processing in order to determine settlement invoice amounts.

The Wholesale Electricity Market settlement processes require significant amounts of input data, considerable amounts of internal processing (resulting in a large number of internal processing variables), and produce a sizeable number of output variables. In order to reconcile settlement invoice amounts, Participants need to be able to understand the processes and variables.

In conjunction with all settlement invoices, the IMO also publishes:

- Settlement Statements; and
- Participant Information Reports (PIRs)

These statements and reports (when considered together) provide Participants with all of the input data, internal processing variables and output variables used in, and resulting from, the settlement calculations. Together, the process followed and reports provided by the IMO result in a fully transparent process.

The IMO has also provided Participants with the settlement configuration document (PCS) that fully explains all input, internal and product processing steps. Although necessarily complex, this document allows the reader to follow all settlement amounts from input right through to invoice result.

The settlement reports and this configuration document have been available to Participants since the commencement of the Wholesale Electricity Market. In addition, the IMO staff members have been more than happy to provide assistance to Participants experiencing difficulties in this area. We note that in many cases, assistance has not so far been sought.

The IMO will continue to provide assistance to Participants that are experiencing problems in reconciling their settlement invoices.

Invoice Errors

As noted, in comparison to comparatively simple invoicing processes in other markets (for example, the National Electricity Market), the Wholesale Electricity Market settlement processes are complex. As such, more errors are likely. The regular settlement adjustment processes in the Market Rules have been set up in an all-encompassing manner for this very reason.

Invoice errors and disagreements can fall under four generic categories:

- Disagreements that arise due to a misunderstanding in relation to the operation of the Market Rules;
- Errors that arise due to incorrect configuration of the settlement system;
- Errors that arise as the correct settlement process has not been followed; and
- Errors that arise due to incorrect (or disputed) input data.

A large number of the disagreements and settlement related questions that have been lodged with the IMO fall under the first category. Once investigated and explained to the affected Participant, these have been largely resolved.

In the first few months of market operation, there were a number of errors and disagreements arising that fall under the second and third categories above. This was partly due to the complexity of the underlying process, as well as some bona-fide configuration errors. However, the IMO believes that these have now been resolved.

The IMO notes that more recently, some process order errors have resurfaced and have affected one settlement run in particular. We have now implemented procedures to prevent this from recurring.

The largest number of settlement errors have arisen due to the fourth item above errors input data can affect:

- Metering data
- SCADA data
- Facility Outage Data
- Dispatch Instructions
- Dispatch Volumes
- Ancillary Service Data
- Other data

Metering data has resulted, and will continue to result in settlement errors. This issue is common to electricity markets across the globe. While Meter Data Agents endeavour to provide the highest quality meter data, the amount of time series and standing data involved leads to an expected statistical level of error that will need to continue to be addressed with adjustment settlement runs.

A number of the errors that have been experienced since market start have been due to missing or incorrect SCADA data. SCADA data is inherently poor and likely to result in a significant level of settlement errors. It is for this reason that most markets

will not consider its use for settlement purposes. This data will improve as proper interval meters are rolled out to all SWIS power stations.

There have been a number of disagreements submitted to the IMO in relation to Facility outages being inconsistent with those recorded by Participants. This affects many facets of the settlement process and has arisen largely due to the involvement of a number of parties (the Participant, System Management and the IMO) under the timeframes required in the Market Rules. Both the IMO and System Management have been improving processes and procedures to improve the quality of this settlement input data. However, errors due to problems in this data are unlikely to be fully eliminated.

The IMO would also like to note that the interactive nature of the Wholesale Electricity Market settlement processes results in changes to invoice amounts for all Participants, even where only one Participant's input data has been affected. For example, consider the case in which a Facility outage amount was incorrect. When settlement is adjusted, the affected Participant's reserve capacity refund amount will be adjusted. However, all Market Customers will also receive a change to their refund rebate amounts. This concept also affects the balancing and reconciliation segments.

In summary, the IMO would like to emphasize that the high reliance on relatively complex volatile input data and the highly interactive nature of the settlement processes results in a settlement invoicing process with a large number of adjustments.

While the IMO acknowledges that a number of errors at Market commencement were due to bona-fide system/process errors, adjustments due to changes to input data will continue, and are, to a large extent, outside the control of the IMO.

Market Training by the IMO

The IMO understands that some Rule Participants expressed the view that the IMO should provide more training to Rule Participants. Some Rule Participants have also acknowledged that the IMO is responding to this issue and is currently organizing further market training sessions for parties involved in the Market.

In the lead up to the commencement of the Energy Market, in 2006, the IMO conducted extensive training to potential Rule Participants. The training material can be found on the IMO web site.

As noted above, the IMO has now provided three series of training involving a two-day interactive training program that covers most operational aspects of the Market. Importantly, it takes a very close look at the price setting and settlement processes.

This training program has been well regarded by participants that have attended (approximately fifty attendees so far). The IMO will seek expressions of interest in three months to gauge interest in further similar courses. The IMO intends to run this course on a regular three to six monthly basis, depending on interest from the Market.

As the current course delves deeply into the complexities of the Wholesale Electricity Market, the IMO is also considering running a more basic course. Already, the IMO has provided many presentations on the basic design of the market.

However, the IMO is a small organization with constrained resources, which somewhat limits its ability to provide training to extensively cater for needs at every level of understanding of the Market.

Appropriateness of the IMO's Requirements for Small Rule Participants

We understand that there was a comment that the Austraclear system is very costly and adds little value to the business operations of the Participant.

Under the Market Rules, the IMO must nominate that an electronic funds transfer (EFT) facility is to be used by all Market Participants for the purpose of settlements. The use of electronic funds transfer facility is important to ensure that settlements can be completed efficiently and within the timeframes prescribed by the Rules.

Prior to the start of the energy market, the IMO presented available options for the electronic funds transfer facility to the Transitional Market Advisory Committee. The Committee, which had wide representation from the WA electricity industry, agreed to use Austraclear as it was considered the least expensive option and used widely across Australia.

Conclusion

In conclusion, the IMO welcomes the ERA's Annual Wholesale Electricity Market Report to the Minister for Energy. Over time, such Reports are likely to be influential in the evolution of the Wholesale Electricity Market.

It is the IMO's expectation that the electricity industry will change significantly over the next few years which will in turn drive further development of the Market. Similarly, further development of the Market and other external policy settings are expected to drive the establishment of a competitive electricity industry.

Risk and uncertainty can have a very strong impact on investors, particularly in the early stages of a market. The IMO considers that it would be inappropriate to recommend fundamental changes to the Market at this early stage.

September 2007

Independent Market Operator

Wholesale Electricity Market
Electricity Trading 2006/07

July 2007

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DISCLAIMER

To the extent that this report expresses any views of the IMO, those views represent the IMO's current views only and the IMO reserves the right to alter its views and its acts and omissions based on those views at any time without notice.

To the extent permitted by law, the IMO and its employees are not liable for any loss, damage, costs or expenses suffered or incurred by any person in relation to or in connection with any actions taken in reliance on this report or for any error in or omission from (in each case whether arising by negligence or otherwise) this report.

1. INTRODUCTION

Trading of electricity in the Western Australian Wholesale Electricity Market (WEM) successfully commenced on 21 September 2006.

The smooth launch of the energy market was the culmination of a massive effort by the entire industry. The Independent Market Operator (IMO) attributes much of the success of the launch of the market to industry's drive, commitment and cooperative effort.

Over the last nine months, electricity has been traded through the market mechanisms provided under the Market Rules on a daily basis to meet the needs of the community and industry.

This report provides an analysis of the market over the period 21 September 2006 to 30 June 2007. The report also provides an early assessment of progress towards the electricity industry market objectives.

2. MARKET OVERVIEW

All electricity markets are unique, being designed to meet the unique needs of the communities and industry they serve. It is common for electricity markets to evolve and develop over time.

However, electricity markets can generally be divided into two broad categories.

- Gross pool electricity markets in which all energy is traded through a “Pool” and settled by the central market operator.
- Net pool electricity markets where the majority of energy is traded and settled between Market Participants through a variety of bilateral instruments, and the balance is traded and settled by the market operator.

The Western Australian Wholesale Electricity Market is a net pool electricity market and is made up of two main components:

- A reserve capacity market where providers of capacity are paid for making available Generation or Demand Management capacity (regardless of whether they are providing energy at the time).
- An energy market where suppliers are paid for electricity produced and customers are charged for electricity consumed.

Both the reserve capacity market and the energy market are treated as net markets where the majority of trades occur on a bilateral basis.

Energy Market

In the Wholesale Electricity Market energy is traded through three separate processes and time frames.

Bilateral Trades

The majority of electricity is traded bilaterally through contracts negotiated between suppliers and consumers of energy. Bilateral trades are settled directly between Market Participants.

Bilateral trade quantities are submitted to the IMO by Market Generators between eight days and one day prior to each trading day. These trades are scheduled and facilities are then dispatched to meet the quantities. The IMO has no knowledge of the price of these bilateral contracts.

STEM Trades

The Wholesale Electricity Market design provides a day ahead Short Term Energy Market (STEM) so Market Participants can change their market position (through buying or selling energy in the STEM) on the day before each Trading Day.

Market Participants submit offers to sell electricity, and bids to buy electricity that consist of quantities and applicable prices. The IMO clears offers to sell against bids to buy and establishes, for each half hour of the Trading Day, a STEM price and quantity cleared.

STEM trades are transparent and are settled by the IMO. The sum of a Market Participant's Net Bilateral Position and STEM trades for any half hour is referred to as their Net Contract Position.

Balancing Market Trades

A Market Participant's actual supply or consumption of electricity during any half hour will deviate from the Net Contract Position due to a number of reasons including:

- Unexpected deviations in demand
- Unplanned plant outages

Energy consumed or supplied in deviation from a Market Participant's Net Contract Position is traded on the Balancing Market.

The price of energy in the Balancing Market is generally set equal to the price in the STEM, unless the total exposure to the balancing market increases beyond a certain value. In this case, the balancing price is recalculated using the original set of supply and demand curves submitted in the STEM. The IMO calculates balancing prices and settles balancing trades.

Published Information

The IMO publishes a large amount of non-confidential market information on a daily and weekly basis. This includes:

- STEM results - <http://www.imowa.com.au/StemQtyPrice.htm>
- Balancing results - <http://www.imowa.com.au/BalancingPricesQuantities.htm>
- Weekly trading report - <http://www.imowa.com.au/WeeklyReport.htm>

3. MARKET COMMENCEMENT AND OPERATIONS

Establishment and Operation of the Wholesale Electricity Market

Through an immense effort by industry, government and the IMO, trading of wholesale electricity in Western Australia successfully commenced on 21 September 2006.

Now that this milestone has been achieved, focus has turned to improving the on-going operation and development of the market. All industry participants and the IMO continue to work cooperatively to ensure that these improvements and developments are aligned to achieve the objectives of the market in the most efficient manner.

System Performance

The Wholesale Electricity Market system has performed very well since market commencement.

- Since the market start system issues have resulted in market suspension on only four occasions, which is better than expectation.
- The IMO system outage times are well below expectation.
- While some teething issues have occurred in relation to settlement accuracy, the results have nonetheless exceeded expectations. All initial problems are being addressed in settlement adjustments.
- Feedback to the IMO regarding its systems and processes has generally been positive. The IMO has established an operations desk that also provides a Market Participant helpdesk service. Feedback regarding this helpdesk has also been positive.

The IMO, in conjunction with Market Participants, are now placing significant focus on the development of market systems to improve the operation of the market.

Market Rules

The Market Rules have generally stood up well to the operation of the market.

- Some early fine-tuning of the Rules occurred prior to the handover of the rule change processes under the Market Rules to the IMO.
- The formal process for making changes to the Rules commenced on 15 December 2006, with the IMO having a prime role in processing rule changes and industry providing important input on Rule Change Proposals.

- Anyone may propose changes to the Market Rules under which the market and the IMO operate. All Market Rule change proposals are assessed by the IMO as to how they further the objectives of the market.
- In mid December 2006, the IMO established the Market Advisory Committee (MAC). The purpose of the Committee is to advise the IMO in regard to rule changes, procedure changes, and electricity market operation matters in general.
- The Committee has 12 members and one observer from various industry bodies. Its composition will be reviewed on an annual basis. The IMO provides secretariat support to the Committee. The IMO has developed the constitution for the Market Advisory Committee and this, together with MAC meeting minutes and working papers, are available on the IMO's website.
- In consulting on a Rule Change Proposal, the IMO convenes the Market Advisory Committee (MAC) and regularly meets with interested parties. It has also established technical working groups drawing on industry representatives where this was considered necessary to appropriately develop or evaluate changes.
- The first formal Rule Change Proposal (titled Synchronisation Approval, which proposed changes to Market Rules 7.9.1, 7.9.2, 7.9.4, 7.9.5, 7.9.6, 7.9.8, 7.9.11 and 7.9.12) was received by the IMO in late March from System Management and was processed through the "fast track" mechanism in the Rules. The Market Rule change was made by the IMO on 30 April 2007 and commenced operation on 10 May 2007.
- Three Rule Change Proposals:
 - Intermittent Generator Downward Dispatch Amendment (affected rules: 6.17.6 (c), 7.7.5A and 7.7.5B), submitted by Alinta Sales;
 - Treatment of DSM in outage planning and PASA (affected rules: 3.16, 3.17, 3.18 and 3.1), submitted by System Management; and
 - Requirements for Registration as a Market Participant (affected rules: 2.28.6 (changed), 2.28.8A (new)),

were submitted to the IMO on 3 May 2007. The IMO is processing these Rule Change Proposals through the Standard Rule Change processes under the Market Rules. Draft Rule Change Reports regarding these three proposals were published by the IMO on 20 July 2007. These are now open for a second round of public submissions which closes on 17 August 2007 and a Rule Change Report will be published on 14 September 2007.

- On 26 June 2007, Alinta Sales submitted a Rule Change Proposal to the IMO titled IRCR for new meters – customer peak load diversity (affecting Appendix 5 of the Market Rules). This is being progressed by the IMO through the Fast Track process under the Market Rules. The consultation period on this Rule Change proposal closed on 25 July 2007. The time frame for this process was extended by fifteen days due to the need to conduct additional analysis on the proposal. The IMO will publish its report on 1 August 2007.

- The IMO also monitors the external environment to identify trends, which may influence market development. The IMO has also developed a number of Market Rule changes, which it considered will enhance the achievement of the market objectives, as follows:
 - On 11 May 2007, the IMO submitted a Rule Change Proposal titled Reserve Capacity Refund Shortfall Formula (affecting rules: 4.26.2). This proposal was progressed using the Fast Track process under the Market Rules. The Market Rule Change was made by the IMO on 16 June 2007 and commenced on 1 July 2007.
 - The first public submission period on the following three proposals, submitted by the IMO on 11 June 2007, closed on 31 July 2007:
 - STEM Timeline Flexibility (affected rules: 6.4.6 (new), 6.5A.1 and 6.12.1 (changed))
 - Discretion of IMO to Decide Whether to Issue Warning (affected rules: 2.13.10)
 - Calculation of Reserve Capacity Refund (affected rules: 4.26.1 and 4.26.3)
- There are a number of Rule Change Proposals in different stages of development (preliminary to advanced) which are currently the subject of discussions between the IMO and various Rule Participants.

4. MARKET TRENDS

As the market evolves, analysis of the market outcomes can assist in fostering an understanding of market movements and trends. This report adds to the analysis provided in the previous six monthly report published in April 2007.

The operation and outcomes of the electricity market is affected by a number of external and internal factors which impact on the demand and supply of electricity including:

- Climate/weather
- Generator and Demand Side Management availability
- Bidding strategies and behaviour
- Fuel supply
- Load variations

The following discussion of market trends needs to be seen in the context of these internal and external factors, which dynamically impact on market outcomes.

It is still early days in electricity trading in Western Australia and it will take time for long term trends to be established and patterns in behaviour to be detected.

However, already positive benefits have emerged from electricity trading and Market Participants have been both proactive in their trading strategies as well as reactive to daily market outcomes.

Figures 1 to 4 below illustrate the South West Interconnected System (SWIS) demand as maximum daily values and as a load duration curve and presents monthly energy use and peak demand for the nine months since the commencement of the market.

- During the 2006/07 summer period the previous maximum demand was exceeded on three separate occasions.
- This summer the maximum demand occurred early in March while other hot temperature periods drove demand up late in January and early February.
- Maximum demands fell away significantly from March to April, and then started to increase once more with the onset of winter.
- The extent of peak demand on the SWIS can be seen from the Load Duration curve – the last 400 MWh (23% of the maximum demand) occurred less than 3% of the time.

SWIS Demand

Figure 1.

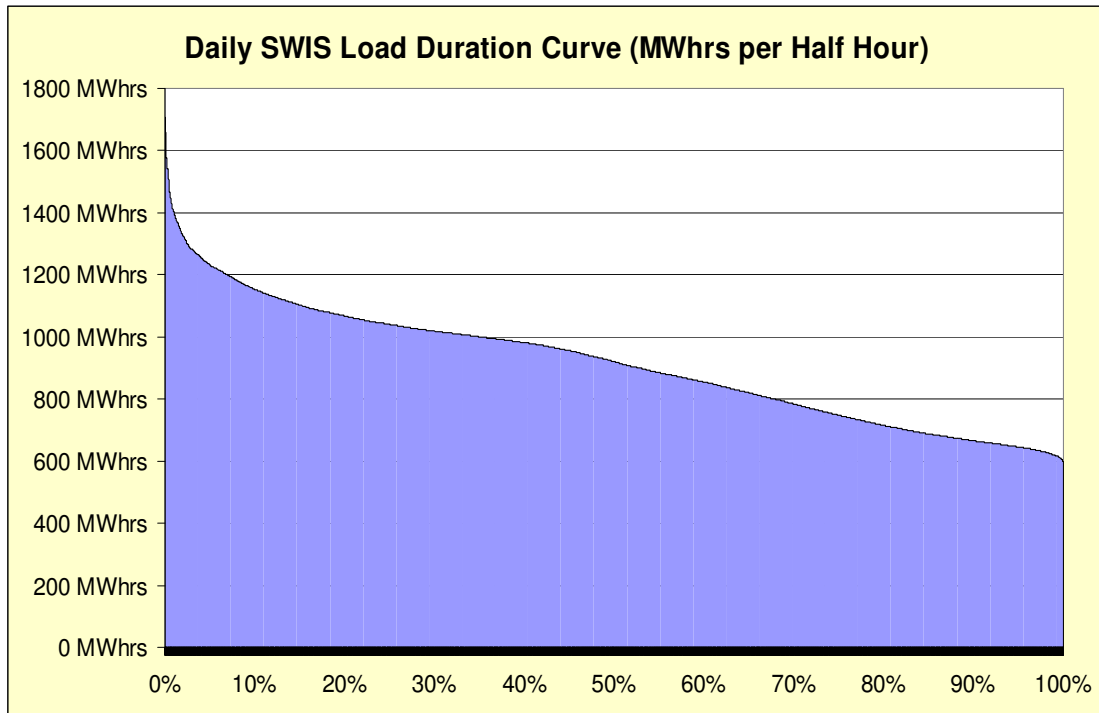


Figure 2.

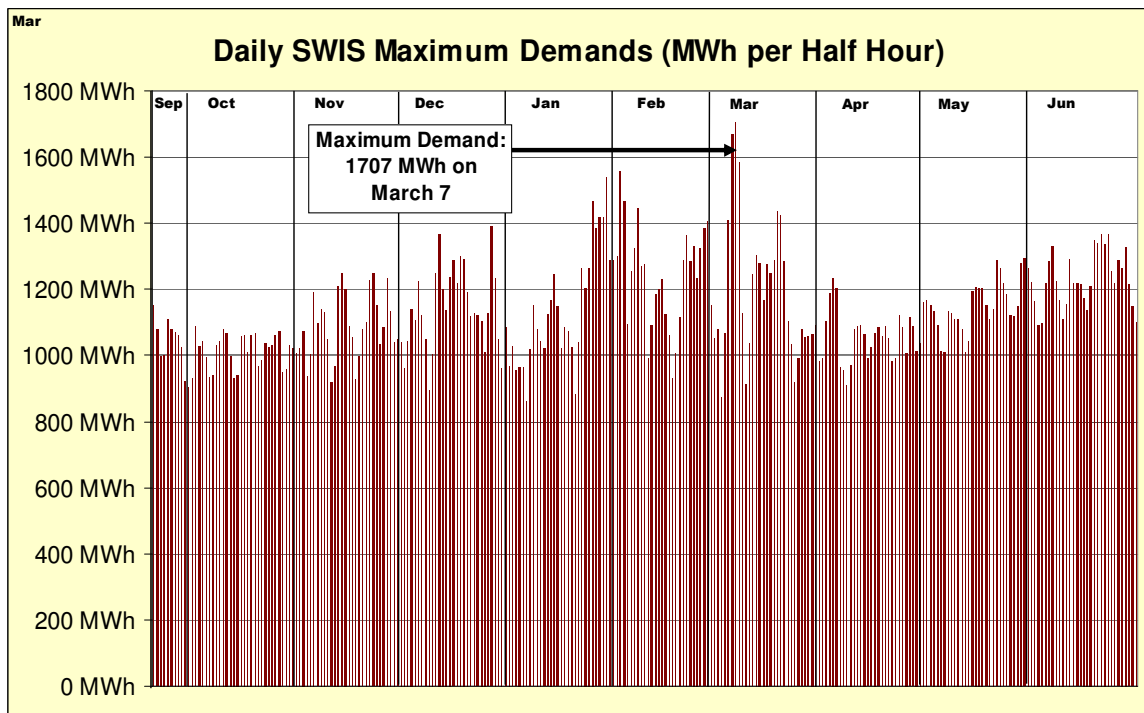


Figure 3.

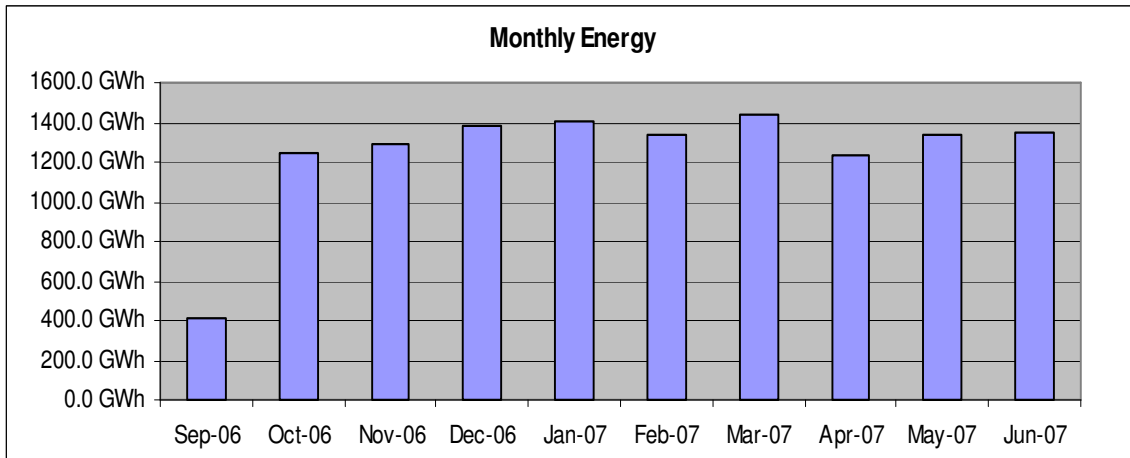
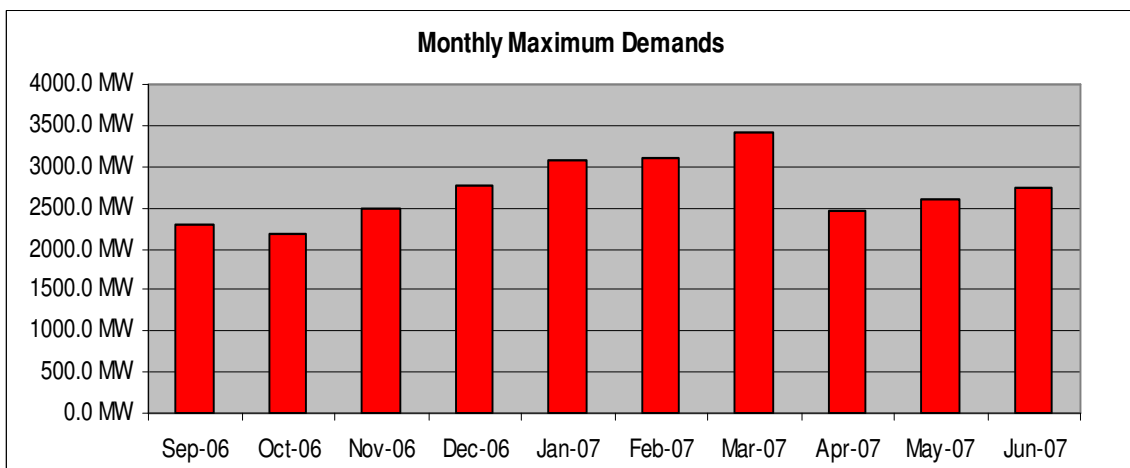


Figure 4.



STEM Prices

Figures 5 and 6 show the daily average STEM prices since the commencement of the market, both in total terms and then separated into average peak and off peak prices.

- The Western Australian market design enables transparency in the price of energy traded in the STEM (but not the bilateral market). However, given that Market Participants have the option to trade bilaterally or in the STEM, it is reasonable to assume that over time there will be a correlation between bilateral contract prices and average STEM prices.

- Since the commencement of the market energy prices in the STEM have reflected the factors influencing the energy industry. As such, the STEM price has been effective in signalling the cost in the market:
 - For the first three months of market operation, the STEM prices were high due to fuel restrictions and low levels of generator availability;
 - As generator availability increased and fuel restrictions were lifted, STEM prices dropped accordingly;
 - There were some brief periods of high prices around February and March due to the extreme demands at this time;
 - More recently, prices have risen slightly as a result of increased plant outages due to maintenance, and further fuel restrictions;
 - As expected, high prices have been most apparent in the peak periods.

Figure 5.

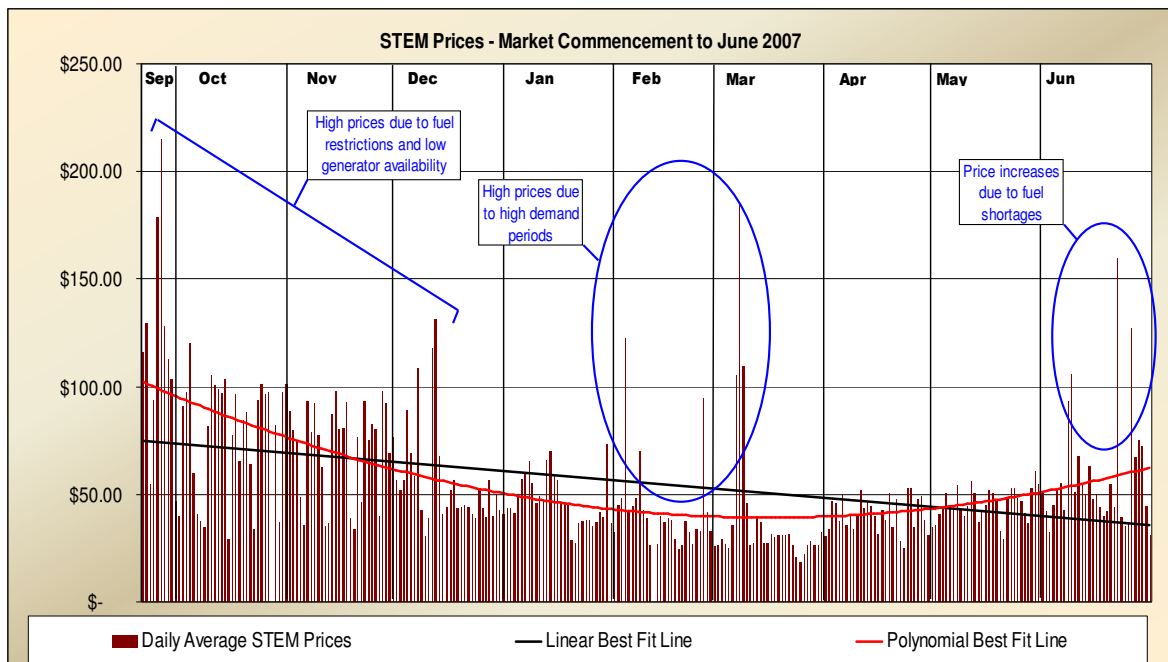
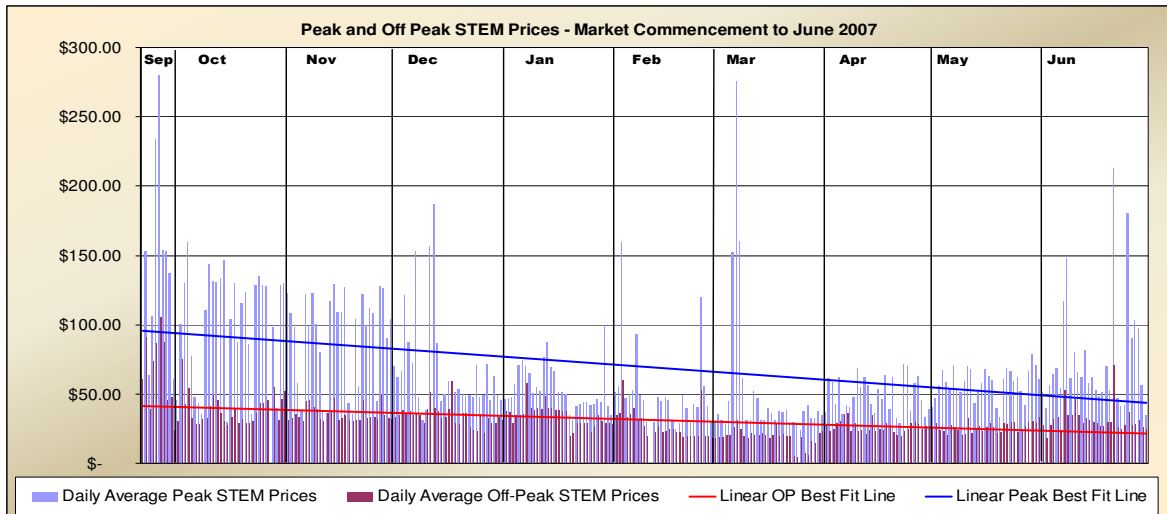


Figure 6.



Balancing Prices

Figures 7 to 9 provide daily average balancing prices, peak and off peak balancing prices as well as the STEM and balancing price duration curves.

Balancing market prices have been, on average, higher than STEM prices, particularly in the period up until around March. This is likely to reflect the initial tendency by Market Participants to ‘buy’ more energy in balancing than the STEM. This led to higher demand in real time than projected the day ahead, which led to the upward recalculation of balancing prices.

More recently however, Market Customers have tended to enter bilateral positions that exceed their load and then sell energy back into the balancing market. This has resulted in average balancing prices more closely matching STEM prices since March.

Figure 7.

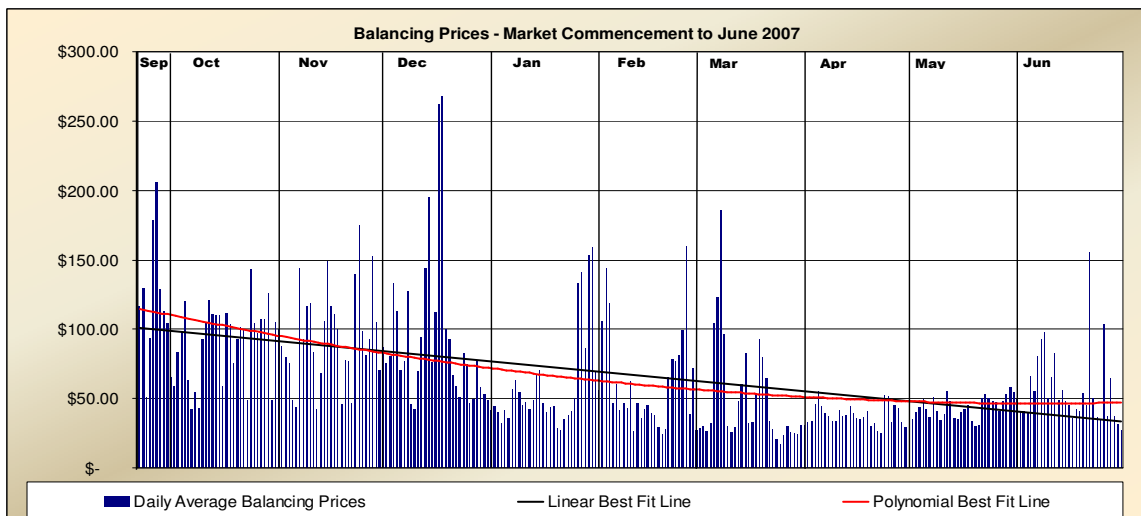


Figure 8.

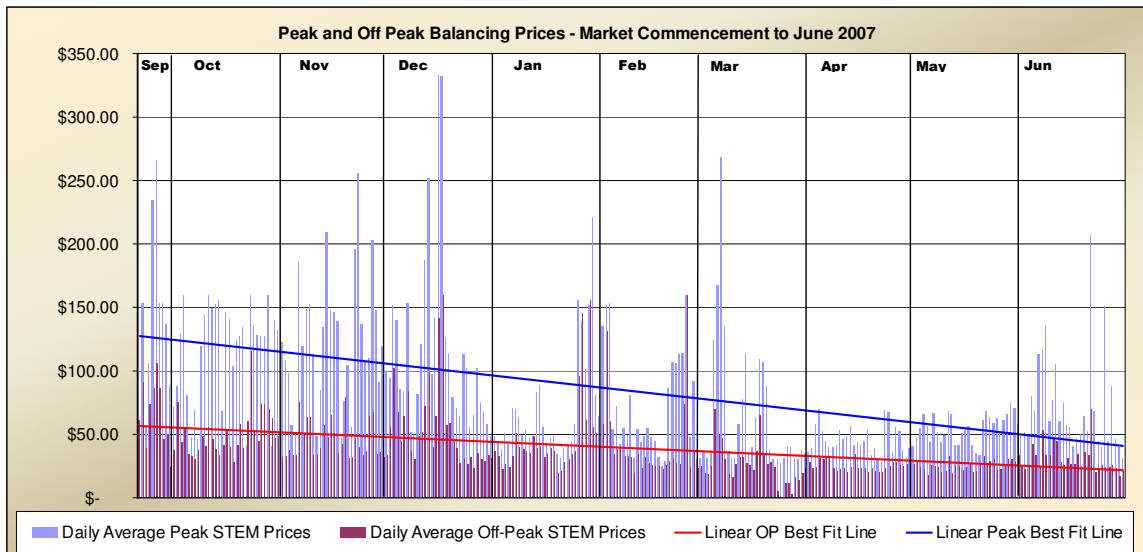
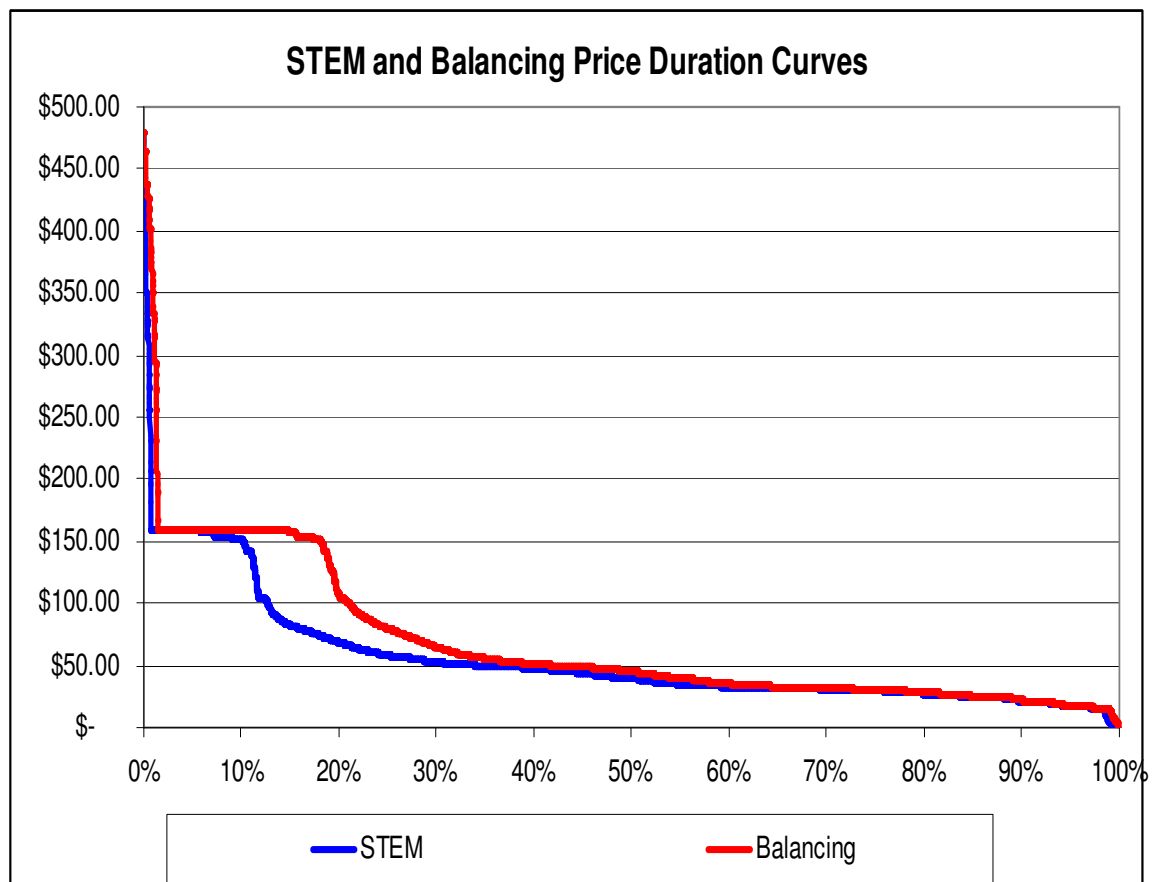


Figure 9.



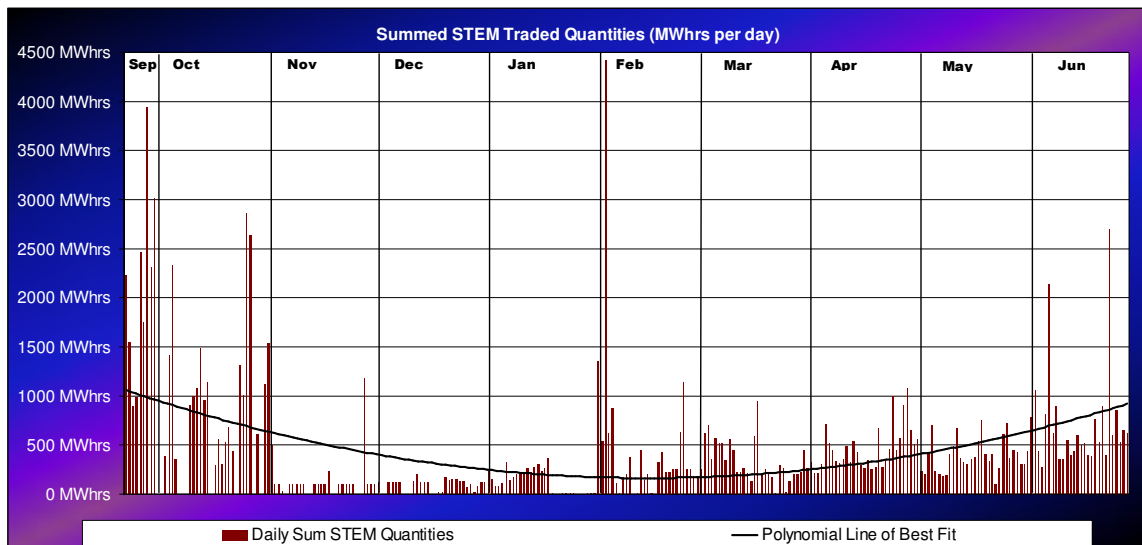
STEM Trades

Figure 10 illustrates the sum of daily STEM trades that have occurred since the commencement of the market.

- There was relatively strong trading activity in the STEM at the start of the market, as traders developed their strategic approach to trading. As the market progressed, STEM trades declined considerably. However, more recently, STEM trades have increased once again.
- A large number of these STEM trades are between generators. This suggests that the STEM is being used by generators to access lower cost plant, a positive benefit from the establishment of the market.
- The vesting contract between Verve Energy and Synergy currently provides good risk coverage for Synergy muting competition and liquidity of trade. As the vesting contract cover is reduced (as it is scheduled to) competition and liquidity is expected to increase.

The amount of trade through the STEM should not be seen as an indicator of market success. Trade through the STEM is just one means for Market Participants to manage risk in the Western Australian Wholesale Electricity Market.

Figure 10.

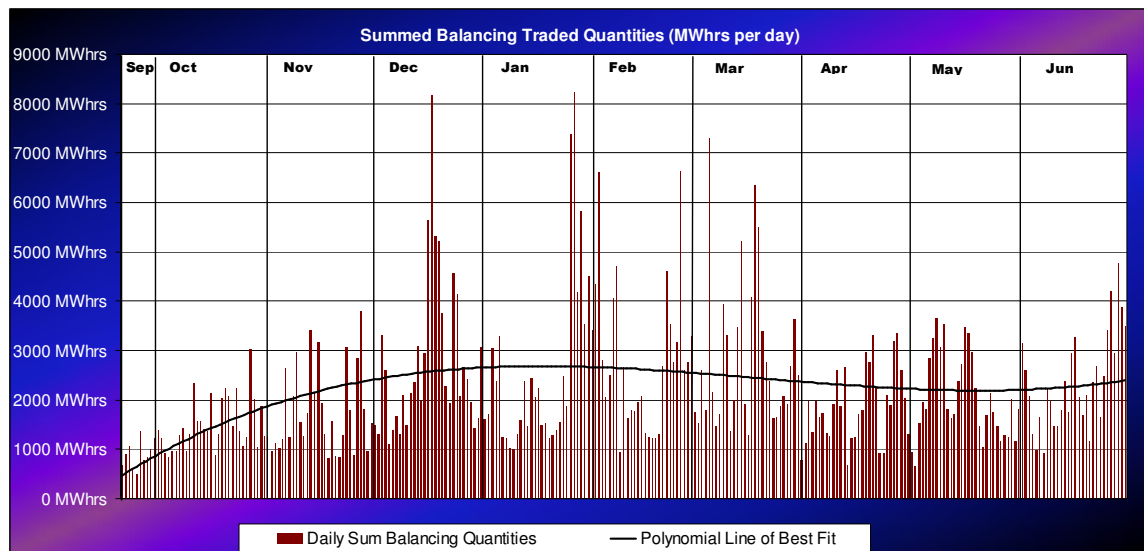


Balancing Trades

Figure 11 illustrates trades in the balancing market. This diagram only shows net balancing market trades. Both positive net balancing exposure (customers buying energy from balancing) and negative net balancing exposure (customers selling energy to balancing) are represented as positive values. This may not be representative of individual Market Participant balancing market trades as individual trades can net out against each other.

- Net exposure to the balancing market increased steadily over the last months of 2006. It then peaked in the summer and fell away again in April. More recently, balancing market exposure has started to increase once again.
- During the first six months of the market, net balancing market exposure was due, reasonably evenly, to positive and negative net exposure. However, the tendency over recent months for Market Participants to enter bilateral positions that exceed their actual demands has resulted in negative balancing exposure becoming predominant.
- While exposure to the balancing market may be a strategic decision by Market Participants, this exposure can be largely driven by factors outside of the control of Market Participants (such as forecasting errors). Consequently, it is difficult to draw indications of market efficiency from balancing market exposure.

Figure 11.

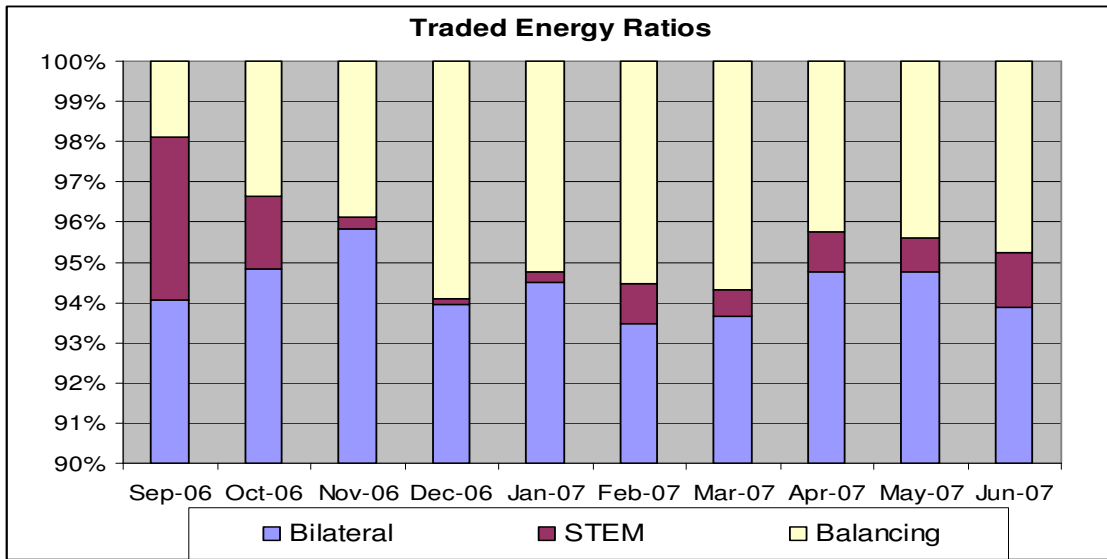


Energy Traded Through the Market

Figure 12 shows the percentage of energy traded through the various market mechanisms.

- Energy traded in the STEM and balancing markets has ranged from a low of around 4.5% to a maximum of 6.5%.
- This is consistent with expectations prior to market start.

Figure 12.

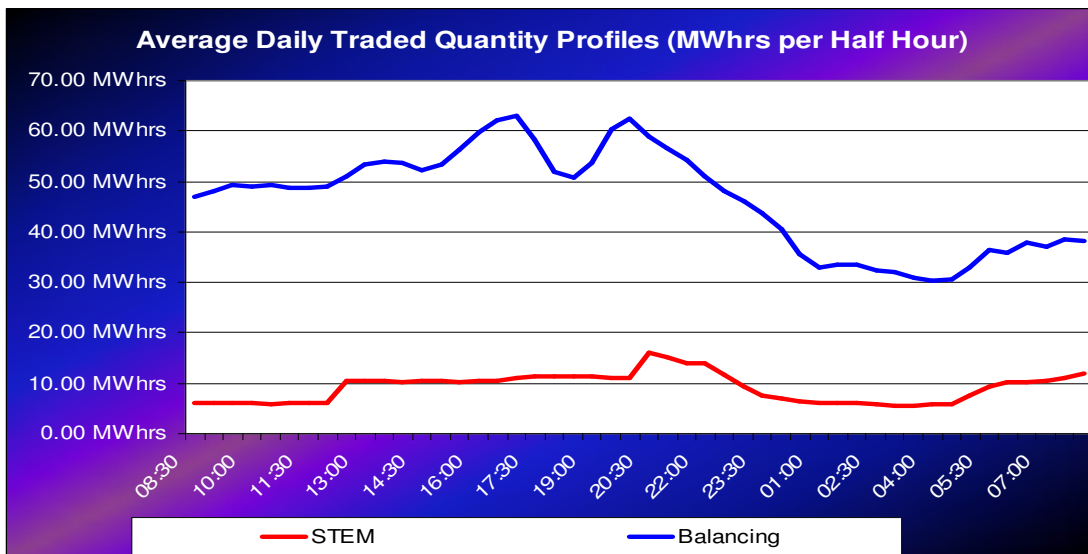


Daily STEM and Balancing Profiles

Figure 13 provides the average STEM and balancing market trades over each half hour of the day. (For example, the value shown for interval X is the average trades for interval X over all days since market commencement).

- Although this diagram continues to indicate larger STEM trades and balancing market exposure over the daily peak periods, this has been largely driven by significant peak trades during the few months following market commencement. More recently STEM trades have been more predominant during off-peak periods, and during weekends, and balancing trades have not followed an identifiable pattern.

Figure 13.

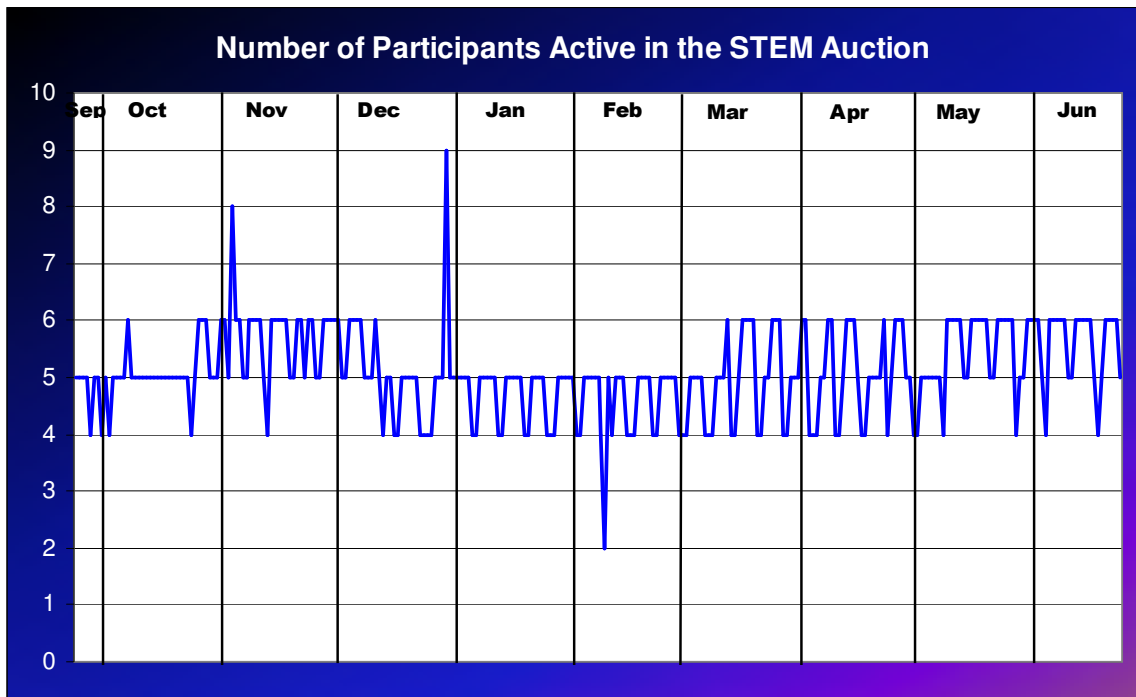


Competition

Figure 14 illustrates the number of Market Participants placing STEM submissions (although not all are cleared) on a daily basis since the commencement of the market.

- The number of Market Participants seems to fluctuate in most cases between four and seven, suggesting that given the limited number of total Market Participants, the STEM is relatively active despite limited quantities traded.
- It is difficult to measure the level of competition in the bilateral contract market. However, it is reasonable to assume that increases in the number of registered operating participants may result in increases in bilateral contract liquidity.

Figure 14.



Customer Churn

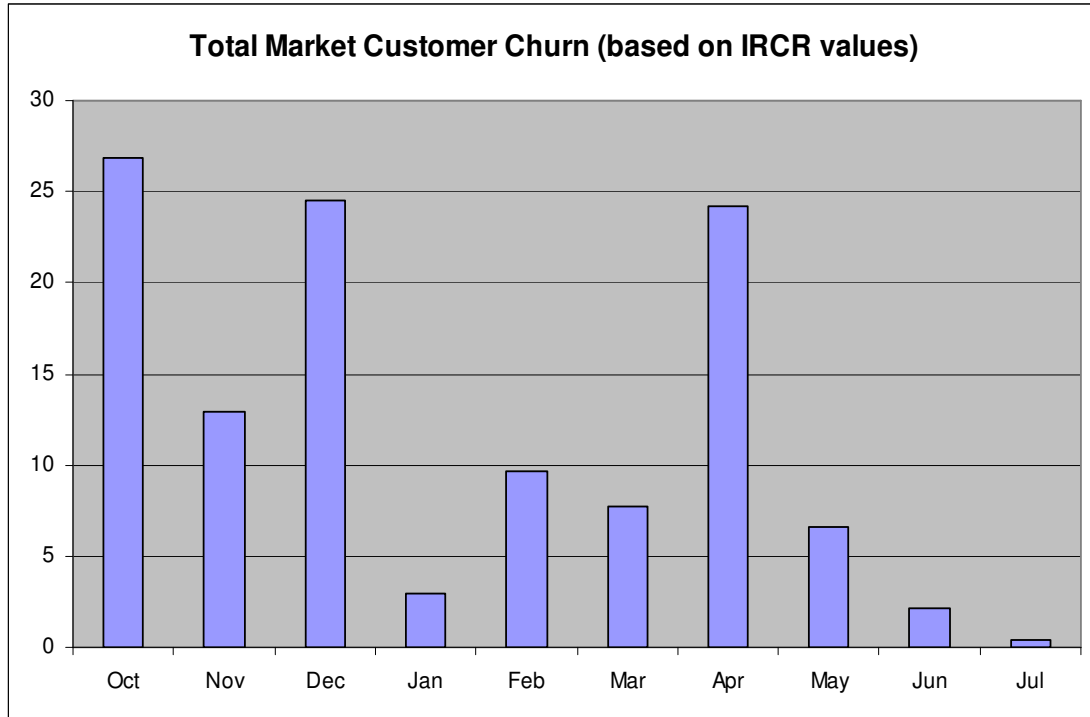
Figure 15 provides the total market change in Individual Reserve Capacity Requirement (IRCR) values due to customer churn. Note data is lagged for three months, hence July IRCR data shows actual customer churn in April.

- An indicator of competition is the movement of contestable customers, which is generally measured by levels of customer churn.
- While the IMO does not monitor customer churn specifically, a proxy measure is the Market Participant IRCR values. (Where customers move from Retailer

A to Retailer B, the IRCR for Retailer A will reduce, and that for Retailer B will increase).

- Total market churn information suggests a reasonably significant amount of churn since the commencement of the market, although for the last two months this has fallen away significantly. Note that full retail contestability has not yet commenced in Western Australia (currently only around 60% of the Western Australian market, by volume, is contestable).

Figure 15.



Summary

In summary, since the start of the electricity trading in the Wholesale Electricity Market:

- STEM and balancing prices have trended downwards over the first six months of the market with balancing prices usually exceeding STEM prices. More recently these prices have largely remained steady with some spikes due to fuel restrictions.
- Relatively high trade in the STEM occurred in the first two months of the market (and net balancing market trades were relatively low). Through November 2006 to January 2007 STEM trades fell away significantly and balancing trades increased. More recently STEM trades have increased once more, with net balancing trades remaining relatively static.

Early trends reflect the context of market start, seasonal factors and the development of a deeper understanding by Market Participants as to how the market works. However, more recently market trends appear to reflect the emergence of trading strategies and Market Participants establishing their positions in the market. External influences such as fuel restrictions continue to have a pronounced effect on market trends.

Nevertheless, it must be recognised that it is very early days in the market and long-term trends are yet to emerge.

Currently, the effectiveness of the WEM is also likely to be affected by the dominant role of two Market Participants (Verve Energy and Synergy) and the nature of the vesting contract between these two parties.

However, the above data and discussion suggests that the market is providing Market Participants with a real opportunity to trade electricity and manage risk. As the vesting contract cover is reduced and further supply and retail competition emerges the STEM market is expected to become a stronger alternative to bilateral contracts.

5. RESERVE CAPACITY MECHANISM

The IMO continued to facilitate the appropriate level of Generation and Demand Side Management facilities onto the SWIS for the third Reserve Capacity Cycle. This capacity will operate through the period October 2009 to October 2010.

Expressions of Interest

The Expression of Interest process, which commenced in January 2007, was completed with publication of the outcomes onto the IMO website in May. Key outcomes from this process were:

- A total of 15 submissions, covering 1,406 MW, were received for facilities to enter service in 2009/10.
- Six submissions, covering 301 MW, were received for facilities for service commencing 2010/11.
- A broad range of facility types was offered with over half of the capacity being fuelled by renewable energy.

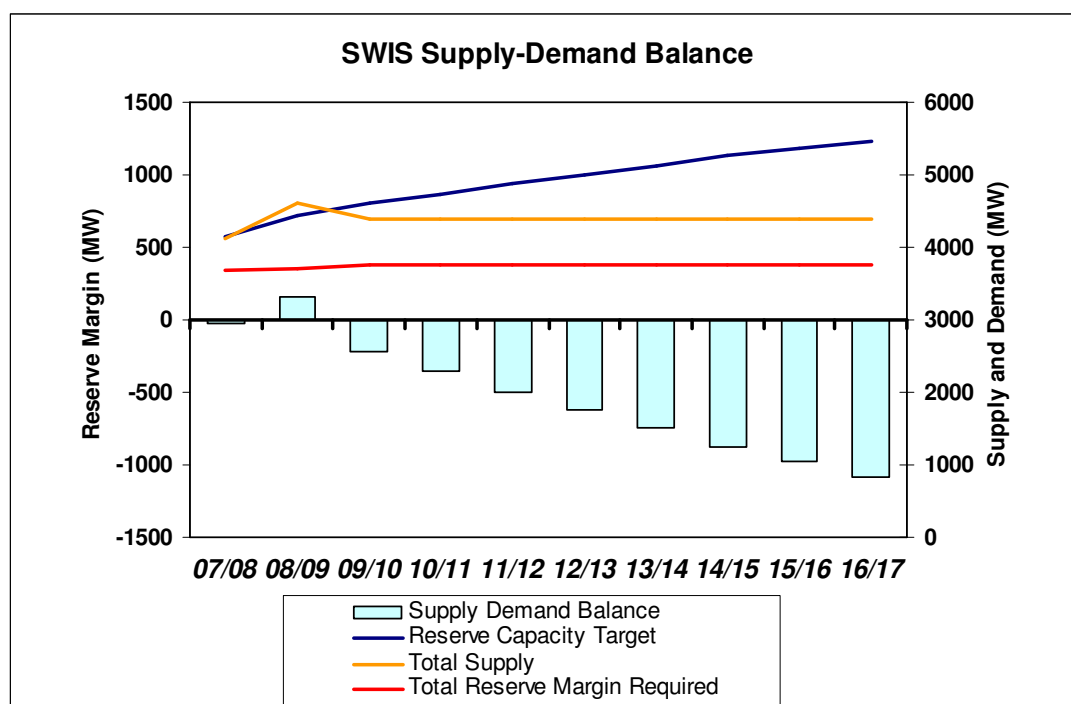
Statement of Opportunities Report

The Statement of Opportunities Report (SOO) was released through the IMO website on 2 July in accordance with the Market Rules. A public presentation was provided on 9 July and this was attended by approximately 35 stakeholders. The SOO revealed:

- The maximum demand during 2009/10, based on a 10% probability of exceedence, is forecast to be 4,233 MW.
- The Reserve Capacity Target for 2009/10, which includes a reserve margin to cover generation outages, demand from intermittent loads and the frequency keeping capability, is 4,609 MW.
- Assuming that all facilities which were assigned capacity credits for 2008/09 are assigned credits in 2009/10, and allowing for the closure of Verve Energy's Kwinana Stage A Power Station, a total of 225 MW of additional capacity will be required.
- Information provided to the IMO by developers indicates that this capacity will be provided to the system to meet the requirement.
- Based on information provided to the IMO, a further 128 MW of new capacity, beyond that required for 2009/10, will be required to meet the forecast Reserve Capacity Target for 2010/11.

The supply demand forecast situation over the SOO study timeframe is illustrated in Figure 16.

Figure 16.



Hot Season 2007/08

As part of the SOO process, the expected supply demand situation for the coming Hot Season has been reviewed. This showed that:

- The forecasts maximum demand for 2007/08 within the SOO is substantially higher than that forecast in the 2005 SOO (which was used to determine the 2007 Reserve Capacity Requirement).
- The capacity requirement, if recalculated using the new forecast, is 4,140 MW which is slightly higher than the 4,115 MW of capacity credits assigned for that year.
- This is not a physical deficit because there is approximately 120 MW of generation capacity on the SWIS which has been proven and certified for 2008/09 but not for 2007/08.
- However, because this capacity has not been certified for 2007/08, the IMO cannot require it to be dispatched though System Management is able to require this capacity to operate in the event that the power system is at risk.

The Market Rules provide for supplementary capacity to be secured through a tender process in the event that the IMO considers that inadequate reserve capacity will be available. The IMO is currently assessing what action should be taken.

Progress of Facilities which are Currently Under Construction

During 2005 and 2006 the IMO assigned capacity credits to three facilities that are currently under construction. These are:

- Alinta's Wagerup facility of 351 MW.
- NewGen Power's Kwinana facility of 320 MW.
- Griffin Energy's Bluewaters 1 facility of 204 MW.

The developers of these facilities have provided regular construction updates, as required by the Market Rules, and have advised that all are proceeding on schedule.

6. MARKET OBJECTIVES

The *Electricity Industry Act 2004* sets the objectives of the Wholesale Electricity Market. The objectives are:

- To promote the economically efficient, safe and reliable production and supply of electricity and related services in the SWIS
- To encourage competition between generators and retailers in the SWIS, including by 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
- To encourage the taking of measures to manage the amount of electricity used and when it is used.

Achieving these industry objectives needs to be seen in the broad industry context. Responsibility for achieving the objectives is a shared responsibility of the IMO and industry.

These significant and far reaching objectives will take time to be fully realised.

However, the IMO's operations and more generally the activities of the electricity industry have already begun to contribute towards the furthering of these objectives.

Progressing Industry Objectives

OBJECTIVE

ACHIEVEMENT

1. Economic, efficient, safe, reliable electricity

- 1st summer of market with no reliability/security issues
- Sufficient capacity to meet peak demand
- Next three years capacity should be adequate
- Focus on plant maintenance & availability
- Forward scheduling of outages
- Review of reserve margin
- Review of forecasting

2. Encourage competition

- Active market
- Strong interest by investors
- Increased number of generators
- More retailers

3. Avoid Discrimination against technology or energy options

- Recognize value of DSM
- DSM contribution compared to NEM
- Increasing renewable energy contribution
- Interest by private renewable generators
- Small & large plant sizes
- Coal, Natural Gas and Diesel

Progressing Industry Objectives

OBJECTIVE

ACHIEVEMENT

4. Minimise Long Term Cost

- Very early days
- Price discovery
- Downward trend in STEM price
- Ability to trade energy
- Variety of plant (e.g. cogen)
- Cost efficient plant upgrades
- Large/medium customers negotiate prices
- Improving risk mitigation to reduce exposure

5. Encourage DSM/Energy Efficiency

- More cost reflective prices
- Recognition of the cost of peak energy
- Growth in DSM

ATTACHMENT 1

Monthly Movements in STEM and Balancing Prices and Quantities

September- October

- At market start Market Participants bidding strategies were not developed and supply offers were relatively high and influenced by fuel and plant availability constraints. STEM and balancing prices in September were high and STEM trade quantities were also relatively high.
- Some slight changes in trading strategies (and offer prices) were detected in October. As a consequence, STEM and balancing prices reduced marginally though STEM trades fell away somewhat with net exposure to the balancing market increasing.

November- December

- Average STEM and balancing prices remained relatively unchanged in November with STEM trades reducing significantly and balancing market trades remaining relatively constant, as Market Participants appeared to cover their risk through bilateral contracts. In December, temperatures were relatively mild.
- STEM price fell significantly through December but there was very little STEM trade. There was significant net exposure to the balancing market and balancing prices were re-calculated to levels higher than prices in the STEM.
- The first non-STEM settlement occurred in November, which is likely to have enhanced Market Participant's appreciation of the out workings of their exposure to the balancing market.

January

- Unexpected extreme temperatures at the end of January resulted in significant balancing market exposure. However, this was somewhat alleviated by ample fuel supply and generator availability.
- STEM trades increased during the beginning of January, but fell off significantly towards the end. Market Participants who attempted to cover themselves with their bilateral positions may have been caught short by the unexpected extreme temperatures.
- There was significant incidence of upward balancing price re-calculations in late January.

February- March

- Significant fluctuations in temperature over February resulted in relatively large demand forecast errors. This in turn led to relatively large exposures to the balancing market.
- STEM trades started to increase in February while balancing trades remained relatively constant in comparison to January. STEM prices continued to fall while balancing prices remained at January levels. Alinta's new plant commenced production in February.
- Significant temperatures in the beginning of March drove the dynamics of the market. The maximum demand of the hot season occurred on March 7.
- In March, STEM trades continued to increase marginally while balancing trades remained relatively constant. STEM and balancing prices were relatively high at the beginning of the month due to the high demand. However, both prices fell off towards the end of the month.

April - May

- In comparison to summer months, temperatures in the SWIS stabilised significantly resulting in far more accurate demand forecasts. Consequently, balancing market exposure fell from the summer months. However, this exposure still remained relatively material due to the consistent submission of high bilateral positions (relative to forecasts and actual loads).
- STEM trades continued to increase from the lower summer levels.
- Prices in both the STEM and balancing markets remained reasonably constant over these months but increased marginally from the base prices in March (not including the extreme March prices at the beginning of the month.) This was partly due to a large number of generators scheduling maintenance through this period

June

- June commenced with reasonable high levels of planned outages with generators continuing to undergo maintenance. However, unexpected fuel restrictions in this month resulted in quite high prices in both the STEM and balancing markets.
- Net balancing market exposure continued to remain largely negative due to marginally excessive bilateral submissions, regardless of the relatively accurate load forecasts.