



Rules Development Implementation Working Group (RDIWG)

Meeting No. 1: Meeting Notes

Location: Level 3, Governor Stirling Tower, 197 St Georges Terrace, Perth

Date: Friday, 27 September 2010

Time: 12.30 – 5.00pm

- Review and agree terms of reference (paper #1)
- Review and agree meeting dates (paper #2)
- Review, discuss and agree prioritisation of issues for development (paper #3)
- Whiteboard priority issues in greater detail



Terms of Reference: Rules Development Implementation Working Group

1. BACKGROUND

The Rules Development Implementation Working Group (Working Group) has been established, in accordance with Clause 2.3.17 of the Wholesale Market Rules and the associated Section 9 of the Constitution of the Market Advisory Committee (MAC). Consistent with these authorised functions and powers, the overarching function of *any* Working Group established under the MAC is to assist the MAC in providing advice to the Independent Market Operator (the IMO) and System Management in matters relating to Wholesale Electricity Market (WEM) Rule and Procedural Change Proposals, WEM operation and South West interconnected system (SWIS) operational matters, and the evolution of the Market Rules more generally.

2. SCOPE

The Working Group's Scope of Work includes consideration, assessment, development and post-implementation evaluation of changes to the Market Rules associated with the issues list agreed by the MAC at its 11 August 2010 meeting. This issues list is attached as appendix 1 to this document.

3. TERMS OF REFERENCE

The Working Group is to:

- Prioritise the issues identified by the MAC into an appropriate number of development work streams;
- Agree a work plan and timeline for consideration of each of the work streams;
- Develop an integrated suite of solutions, including drafted Concept Papers and Rule Change Proposals to be presented to the MAC by way of presentation/s and supporting discussion paper/s; and
- Undertake a post-implementation evaluation of the solutions, to identify any remaining shortcomings and recommend an approach to address them.

The Rule Change Proposal(s) must include a full impact assessment prior to any recommendations being put forward to the MAC, including:

- Consideration of the implications of any changes on improving the delivery of the Market Objectives;
- Detailed feedback as to the implications to the operation of the existing WEM processes and physical outcomes; and



- Consideration of the financial costs and benefits of implementation.

Consistent with Section 9.5 of the MAC Constitution, all matters which are identified as falling outside the Scope and Terms of Reference of this Working Group must be referred back to the MAC for consideration.

4. OBJECTIVES AND PRINCIPLES

The Working Group must provide advice and report the extent to which its advice meets or is consistent with the Wholesale Market Objectives and the general principles reflected in the current Market Rules.

The Market Objectives are as outlined in Section 122 of the Electricity Industry Act 2004 and Clause 1.2.1 of the Market Rules.

5. MEMBERSHIP

The Working Group consists of a Chair and members appointed by the IMO from nominees, being representatives of Rule Participants and other interested stakeholders. In addition, staff, representatives and consultants of the IMO work with and support the group. Replacement and/or new nominees can be submitted to the IMO for consideration at any time.

6. TENURES

The Chair and members are appointed by the IMO and remain in tenure until the appointment is duly revoked by the IMO or the Working Group is disestablished.

A member of the Working Group may resign by giving notice to the IMO in writing; this notice of resignation can include an appropriate replacement from the member's entity, for approval by the IMO.

7. RESPONSIBILITY OF THE CHAIR

The Chair provides guidance to the group to ensure that the outputs are appropriate and that they support the Working Group's role of providing advice to the MAC. The Chair works closely with the MAC, the IMO and the Working Group to achieve this.

In carrying out the above role, the Chair must ensure the documented output reflects a balanced representation of the group views.

8. RESPONSIBILITY OF MEMBERS

Members have been selected for their particular expertise and accordingly:

- Members are to make themselves available for meetings;
- Members have a duty to prepare for meetings;



- Members are to consider the interests of all stakeholders currently operating within the WEM;
- Members do not represent their own organisations (although the range of commercial and technical experience inevitably adds diversity to the group's capabilities); and
- Any views expressed by members are not to be taken as being those of their employer or nominating organisation.

9. KEY TASKS AND MILESTONES – THE WORK PLAN

The Chair works with both the IMO and Working Group to develop the Work Plan, setting out the key tasks and milestones within the Terms of Reference.

The Chair has responsibility for the implementation of the approved Work Plan, efficient meetings of the Working Group and reporting to the MAC on achievement of agreed milestones.

10. NATURE OF DELIVERABLES

The Working Group delivers reports, advice and comments on the tasks within the scope of the Terms of Reference and as agreed and set out in the Work Plan. Such deliverables may be varied from time to time by direct request from the Chair of the MAC.

In some circumstances, the MAC may decide that comments, rather than advice, are required from the group. These circumstances may arise due to:

- Issue complexity and contentiousness;
- Parallel industry wide consultation; and
- Time frames.

The documented output in those circumstances would note the various issues raised by the group and advise on them.

11. REPORTING ARRANGEMENTS

Routine reporting will be via Working Group reports to the MAC. Consistent with section 9.4 of the MAC Constitution, the Working Group must report back to the MAC at each MAC meeting. The Chair will also personally report to the MAC at agreed key milestones.

12. ADMINISTRATION

The Working Group activities are to be as transparent as practical. The Chair must ensure that key decisions and action points from meetings are recorded.



Appendix 1: Design Issues/Problems to be addressed

The design issues/problems to be addressed by the RDI WG are:

1. There is very limited opportunity for participants other than Verve to participate in providing balancing services and this inevitably means the cost of balancing is higher than it needs to be.
2. Provisions for Balancing Support Contracts have not been effective to date.
3. The calculation of MCAP and the role of UDAP and DDAP mean that balancing prices are not cost reflective and this leads to inefficient incentives for decisions about prices and participation and inequitable financial transfers between participants that compromise the integrity of the WEM.
4. At different times the capacity refund arrangements under and over price the value of capacity leading inefficient decisions by participants about the timing of maintenance and presentation of capacity.
5. The timing of operation and single pass design of STEM may be limiting the ability of the market to achieve efficient operation and cost reflective prices and accordingly creates a barrier for participation by all parties.
6. The requirement for resource plans to match STEM outcomes may be limiting participation in STEM and/or forcing inefficient dispatch of IPPs and Verve (as balancer) as IPPs attempt to comply with the resultant resource plans.
7. Poorly aligned gas and electricity mechanisms inhibits flexibility to respond to changing circumstances and produces suboptimal outcomes in the WEM.
8. Lack of transparency inhibits the ability of Market Participants to optimise interaction in the daily energy market.
9. Provision for net bilateral submissions compromises transparency and the accuracy of future price forecasts and may therefore lead to sub optimal decisions about participation by other market participants.
10. Pay as bid pricing for dispatch of IPP plant for balancing (outside a balancing support contract) is incompatible with efficient wider participation in balancing and potentially over compensates IPPs which bid at price caps due to uncertainty of dispatch outcomes.

An additional design issues/problem for noting (i.e. not part of the initial work of the RDIWG) is:

There is very limited opportunity for participants other than Verve to participate in providing Ancillary Services. This is due to the lack of certainty surrounding the pricing mechanism and the requirement to provide the service at a discount to Verve. System Management will look to develop a day-ahead procurement mechanism and present the outcomes of its analysis at the RDIWG.

Proposed meeting dates

The proposed dates for the Rules Development Implementation Working Group (RDIWG) are contained in the table below. The meeting time, subject to change on some occasions, is 10.00 – 4.00 pm.

Table 1: Proposed RDIWG meeting schedule

Meeting #	Date
1	Friday, 27 August 2010
2	Tuesday, 7 September 2010
3	Thursday, 30 September 2010
4	Monday, 11 October 2010
5	Tuesday, 2 November 2010
6	Tuesday, 23 November 2010
7	Tuesday, 14 December 2010
8	Tuesday, 18 January 2011
9	Tuesday, 1 February 2011
10	Tuesday 22 February 2011
11	Tuesday, 15 March 2011



Independent Market Operator

**Market Rules Design: Problem
Statement**

Date: Updated 27 August 2010



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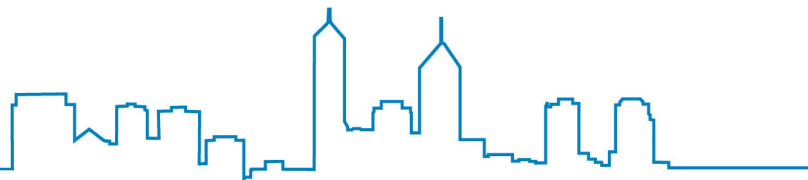
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DOCUMENT DETAILS

Report Title: Market Rules Development Issues List
Release Status: Public
Confidentiality Status: Public domain

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1. PURPOSE

The purpose of this paper is to present the Rules Development Implementation Working Group (RDIWG) with a list of design problems and issues for its consideration. These issues derive from:

- The Market Rules Evolution Plan¹ (MREP); and
- Issues identified as part of the Verve Energy Review (Verve Review),

This list of design problems/issues forms part of the scope for the RDIWG's work.

2. BACKGROUND

2.1 *Market Rules Evolution Plan*

The MREP was created during 2009 to assist in setting the work priorities for the evolution of the WEM. The MREP was developed via a highly consultative process and incorporated a consolidated list of issues raised by various stakeholders since the market start. The Market Advisory Committee (MAC) was invited to indicate the relative priority of each of the issues on the list to assist the IMO to set the work priorities for the next phase of Market Rules development. As a result of this exercise the top five issues were identified. For more detail see table 1.

The MREP work programme was presented at the October 2009 MAC meeting. This programme noted that the proposed priorities and timelines were independent of the implementation of the Verve Review recommendations and might change as a result of the Verve Review implementation plan.

2.2 *Verve Review*

In response to concerns about the financial outlook of Verve Energy, the Minister for Energy commissioned the Verve Review. As a result a number of recommendations were made in three broad areas:

- The Vesting Contract between Synergy and Verve Energy;
- Development of a generation outlook; and
- Review of the short term aspects of the WEM design and Market Rules. For more detail see table 1.

It should be noted that while the Verve Review looked at the operation of the WEM overall, the basic structure of the WEM (comprising a capacity mechanism, Short Term Energy market (STEM) and dispatch/balancing) was not under review.

¹ <http://www.imowa.com.au/market-rules>

2.3 **Overlap between the MREP and Verve Review**

The MREP and recommendations of the Verve Review both identified the need to review a number of aspects of the WEM.

Owing to the overlap in the issues to be addressed a Market Rules Design Team (MRDT) was formed comprising the Independent Market Operator (IMO), System Management, and Oakley Greenwood for the Verve Review Implementation project. The MRDT has been considering a number of areas of the design of the WEM where amendments to the design would lead to increased efficiency and effectiveness.

Table 1 lists the areas for change identified during the course of development of both the MREP and the Verve Review.

Table 1: Recommendations of the MREP and Verve Review

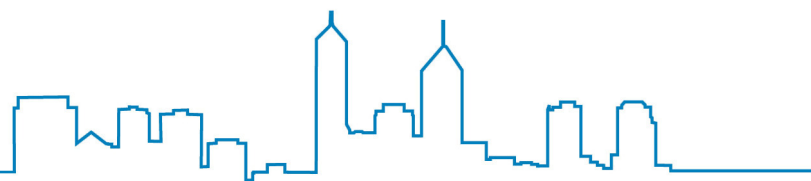
Market Rules Evolution Plan	Verve Review
Improvements to the Balancing mechanism	Broader participation in the Balancing mechanism
Review of the Reserve Capacity Mechanism	The capacity deficiency penalties
Improvements to STEM: <ul style="list-style-type: none"> • Closer to real time or multiple gate closures • Transparency of STEM offers • Preliminary calculation of MCAP 	Pricing provisions relating to the STEM and the Balancing mechanism
Closer alignment of gas and electricity nominations	
Introducing markets in Ancillary Services	The provision of Ancillary services

The MRDT conducted two workshops and released three papers² in addition to discussions within the formal MAC meetings. The concept papers outlined potential development options, identified by the MRDT, to improve the coordination of resources within day ahead timeframes, these were:

- Enhancements to the current hybrid design; or
- Moving to a more mature market design (net or gross dispatch arrangements).

2.4 **Development Pathway Decision**

² Oakley Greenwood (OGW) January 2010, *Verve Energy Review, Market Rules Implementation Discussion Paper*
 Independent Market Operator (IMO), *Oates Review Implementation Paper, March 2010*
 Independent Market Operator (IMO), *Oates Review Implementation Paper, April 2010*



At the 19 July 2010 MAC meeting the MRDT presented the MAC with the following options:

- Pathway 1: Push the current design as far as possible;
- Pathway 2: Adapt the current design and at the same time evaluate a more mature market design; or
- Pathway 3: Move straight to the evaluation of a more mature market design.

At this meeting the MAC expressed a preference to maximise the development of the current hybrid structure of the WEM.

3. KEY ISSUES

This section discusses the key issues that were identified in the MREP and within the Verve Review. It reviews the initial problems that were identified and builds on these issues with information developed through the MRDT review process. These problems can generally be classified into gaps or misalignments with either the incentives or opportunities for efficient participation in the WEM. Therefore, when reviewing this section, it should be noted many of the issues identified are interrelated. As a result, improvements to the incentives or opportunities in one area of the market can impact on the incentives or opportunities in other areas of the market.

Each broad issue is discussed in terms of the case for change, which is expressed in terms of a framework that assesses improvements that can be made to the incentives and opportunities for efficient participation. Appendix 1 provides further detail on the framework. Providing a case for change will be a useful starting point when considering the merits of making improvements to the current market design.

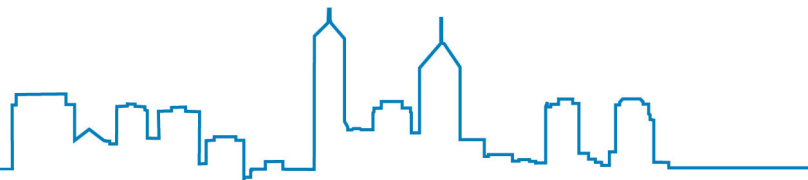
3.1 *Balancing Mechanism*

Within the MREP, MAC members gave top priority to improvements to the Balancing Mechanism. The MREP identified the following issues:

- Under the current day ahead mechanism, balancing prices do not always reflect the final dispatch which impacts on the balancing generator – Verve Energy during the one-day lag;
- In addition, Independent Power Producers (IPPs) do not have the flexibility to move generation between their own units, or purchase from another generator within the dispatch day, without incurring unfavourable deviation prices in balancing; and
- There was a desire to allow IPPs to contribute towards balancing more effectively where this makes sense economically.

The Verve Energy Review highlighted that:

- Only Verve Energy provides Balancing and Ancillary Services and this is increasingly inefficient and costly; and



- On a day to day basis, managing low demand is potentially more difficult than managing high demand.

In the course of its work the MRDT:

- Has further analysed the arrangements for balancing and concluded that the calculation of MCAP and the role of UDAP and DDAP and creating distorted incentives that lead to inefficiency. Market Participants have also previously noted the importance of cost reflective balancing prices;
- Noted that Balancing Support Contracts (BSCs) that facilitate the participation of IPPs in balancing are contemplated by the current market rules but no such arrangements have yet been established; and
- Noted that there is a misalignment with the incentives to invest in flexible plant (in order to resolve the overnight load issues) and participant's actual investment decisions.

More detailed analysis of the design of the balancing arrangements and price outcomes is provided in Appendix 2

Design issue/problem 1: *There is very limited opportunity for participants other than Verve to participate in providing balancing services and this inevitably means the cost of balancing is higher than it needs to be.*

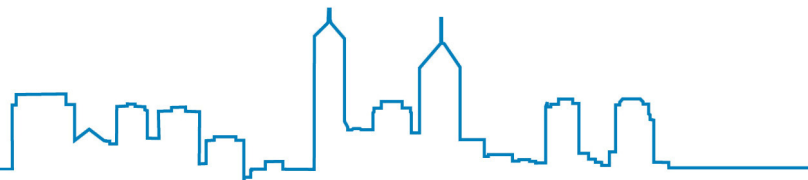
Design issue/problem 2: *Provisions for Balancing Support Contracts have not been effective to date.*

Design issue/problem 3: *The calculation of MCAP and the role of UDAP and DDAP mean that balancing prices are not cost reflective and this leads to inefficient incentives for decisions about prices and participation and inequitable financial transfers between participants that compromise the integrity of the WEM.*

3.2 Reserve Capacity Mechanism

MAC members identified a review of various elements of the Reserve Capacity Mechanism as having the second highest priority for the MREP. The following issues were specifically identified:

- Expressions of Interest process;
- Maximum Reserve Capacity Price (MRCP) and Weighted Average Cost of Capital (WACC);
- Secondary Market for Capacity Credits/Obligations;
- Shorten lead time for entry into mechanism; and
- Capacity Cost Refund mechanism.



A number of these elements have been reviewed, or are currently under review through other processes. The MRCP and associated WACC calculations are currently being reviewed by the MRCP Working Group established under the MAC. Shortening the lead time for entry into the mechanism was reviewed as part of a recent rule change proposal. When considered by the MAC, the rule change proposal was not progressed.

Discussion has also noted that the distribution of Capacity Cost Refunds is directed to Market Customers. On the other hand Supplementary Reserve Capacity arrangements are funded via a separate, as needed, charge on the market. As these payments are volatile they are difficult to reflect end-user tariffs. Consideration has been given as to whether the Capacity Cost Refunds should be retained in order to fund future Supplementary Reserve Capacity Refunds.

The Verve Energy Review noted that the capacity deficiency penalties are very smoothed and only provide a general, not a specific incentive to have capacity available. Furthermore, it noted that capacity deficiency penalties provide a capped incentive for generators to make plant available when required, which limits the steps that they would be prepared to undertake to have plant available when required.

In addition the MRDT found that the static, time based, design of the Capacity Cost Refunds:

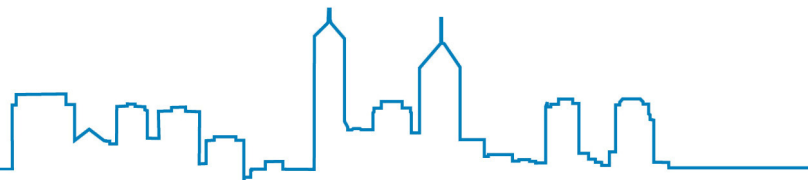
- is unable to recognise the inherent variability in reserves resulting from the impact of weather on customer demand and levels of generator availability. The variability of demand with time of day and weather means that reserve is generally higher in off peak times of day and year. As a result the value of capacity varies and can be very low at off peak times when reserve is high. This changing value is broadly reflected in the current schedule of refunds but only for the worst case condition at each time of year and it is not able to reflect short term variations; and
- do not provide for participants voluntarily to increase available capacity either by cancelling approved maintenance or operating above the level of accredited capacity. This indicates that the Capacity Cost Refunds do not provide an incentive for increases in capacity at times of system stress.

Design issue/problem 4: *At different times the capacity refund arrangements under and over price the value of capacity leading inefficient decisions by participants about the timing of maintenance and presentation of capacity.*

3.3 STEM operation and alignment of gas and electricity nominations

A number of issues were raised in the MREP concerning the STEM. Notably:

- Trade volume, price relevance and STEM predictability;
- Moving closer to real time or multiple gate closures;
- Transparency of STEM offers; and
- Preliminary calculation of Marginal Cost Administered Price (MCAP) (closer to real time).



The MRDT found that the timing of operation of STEM and the single pass design was restricting the ability of the market to develop accurate and efficient plans and in conjunction with the factors that are preventing balancing prices from being cost reflective this would compromise future participation in both STEM and balancing.

In making STEM submissions participants must forecast likely operating conditions and customer demand using the best information available at the time but cannot vary their positions once submissions are made – even where circumstances have clearly changed and they could amend their planned operation, for example where a later weather forecast shows demand is likely to be different to initial expectations. i.e. IPPs are effectively committed to dispatch (net contract) positions following STEM clearance and Verve is scheduled and dispatched by System Management, in anticipation of demand, wind and resource plans (submitted around 1:30pm) with no ability to adjust its offer curve (submitted around 5 hours earlier). The use of a single pass process that is completed well in advance of the time of dispatch (and the time that a central utility system operator would reconsider its planned operation) means that operation of Verve plant is optimised independent of its day ahead STEM submissions and only on the basis of dispatch guidelines and availability and price of IPP plant cannot be adjusted by the relevant IPP.

The WEM was designed so that Market Participants were informed about their electricity positions prior to making gas nominations. Recently a number of Market Participants have indicated a preference for closer alignment of these windows, some noting a firm preference for gas nominations to come first (due to fuel availability concerns).

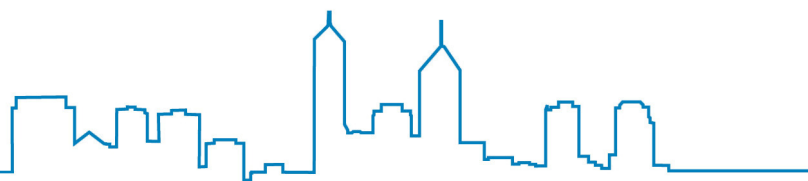
The day ahead nature of the WEM, in conjunction with the nomination processes for gas shippers on the DBP, may act to constrain the ability of Market Participants to respond to short term fluctuations in demand and supply conditions. This is exacerbated by the contractual nature of the gas market, which for some smaller, new entrant generators does not provide them with the necessary flexibility to trade around their contracted gas positions.

As a result operation is less efficient for both Verve and IPPs.

The MRDT also noted that the requirement for facility resource plans to align with STEM outcomes was problematic as STEM is a simple financial portfolio contract trading calculation that does not account for physical limits on generation facilities.

For example as a result of large shifts in cleared STEM quantities in successive intervals that require IPP generation units to ramp rapidly up and then down, and as a result Verve units are expected to undertake inverse action. In order to prepare for these events System Management must operate additional flexible generation plant uneconomically. In order to address this situation a general review of the role of STEM focussing on whether its role is primarily a financial instrument or a form of pre dispatch would be appropriate. If it were to be a financial instrument only then it need not be as closely linked to Resource Plans but if it is to be part of a forecasting and planning for physical operation then it may need to be amended to become a security constrained pre-dispatch.

Design issue/problem 5: *The timing of operation and single pass design of STEM may be limiting the ability of the market to achieve efficient operation and cost reflective prices and*



accordingly creates a barrier for participation by all parties.

Design issue/problem 6: *The requirement for resource plans to match STEM outcomes may be limiting participation in STEM and/or forcing inefficient dispatch of IPPs and Verve (as balancer) as IPPs attempt to comply with the resultant resource plans.*

Design issue/problem 7: *Poorly aligned gas and electricity mechanisms inhibits flexibility to respond to changing circumstances and produces suboptimal outcomes in the WEM.*

Transparency

Transparency or the level of disclosure and the degree to which outcomes can be reconstructed and repeated is important to the credibility of many market situations. Disclosure of the basis for operations and understanding of processes therefore is a key factor in creating transparency but also needs to be balanced against the risk that operations are so constrained by process that transaction costs and operating efficiency are compromised or information adds to market power. The WEM is relatively complex and the information about the decisions of System Management in relation to scheduling Verve plant is limited. This lack of information detracts from the understanding and confidence of parties and therefore reduces confidence.

Design issue/problem 8: *Lack of transparency inhibits the ability of Market Participants to optimise interaction in the daily energy market.*

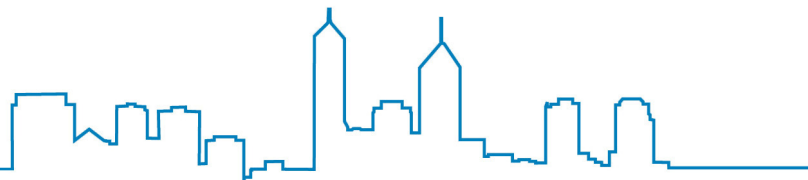
Net nominations

The market rules allow generators to make net submissions - netting-off self supplied load. This is invisible to the market until resource plans are submitted including the operation of generating capacity that was not represented in submissions. This will be efficient as long as the additional generation matches the self supplied load. If not then there is the prospect of any mismatch being reflected in MCAP formation (and any MCAP forecasts). The implications of allowing for net nominations may therefore warrant investigation to ensure that it does not create unintended or inappropriate incentives.

Design issue/problem 9: *Provision for net bilateral submissions compromises transparency and the accuracy of future price forecasts and may therefore lead to sub optimal decisions about participation by other market participants.*

Pay as bid pricing

Under the current rules, IPPs receive payment as bid price when System Management issues a dispatch instruction for them to move off Resource Plan. The pay as bid provision is tempered by the requirement to bid at SRMC (where a party has market power). However, establishing an accurate value for SRMC without knowing the dispatch pattern is highly problematic – as it is for Verve much of the time - and it appears it is common practice for IPPs to bid blocks of generation that are typically not expected to run at the relevant price cap.



Whereas there is a desire for IPPs to participate more in Balancing, the current arrangement in the WEM sets the market price from IPP resources that are essentially pricing themselves out of the (energy) market while remaining available for such situations. This raises issues of market efficiency and compliance monitoring.

Markets in other places use a range of different commercial and administrative approaches to remunerate resources that are called on when competitively bid resources are insufficient to meet demand and could be reviewed.

Design issue/problem 10: *Pay as bid pricing for dispatch of IPP plant for balancing (outside a balancing support contract) is incompatible with efficient wider participation in balancing and potentially over compensates IPPs which bid at price caps due to uncertainty of dispatch outcomes.*

3.4 Introducing Markets in Ancillary Services

The MREP noted the following in respect of Ancillary Services:

“Ancillary Services are services required to support the WEM but which are not traded as part of the WEM. System Management are required to procure adequate quantities of these services, either from Electricity Generation Corporation (Verve) resources (the default option) or on a contestable basis from independent providers (if they provide a least cost option to Verve’s facilities).

Market Participants have indicated that the provision of ancillary services should be opened up to competition for spinning reserve, frequency control and black start.”

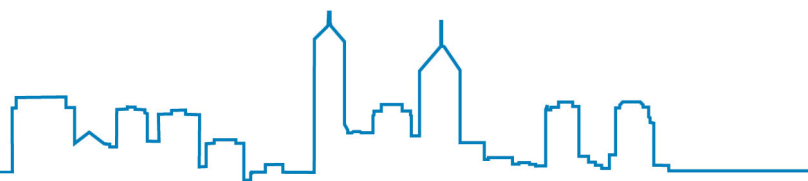
The Verve Energy Review commented that:

“Effective arrangements for load balancing and ancillary services. The most efficient and reliable way to provide these services should ensure that all generators face similar incentives to provide them. In competitive systems it becomes increasingly difficult, costly and increasingly impractical for a single generation company to provide all or most of these services as its total share of system capacity falls.”³

Introducing market-based arrangements for Ancillary Services has been identified as a key priority by MAC members, and as an issue within the Verve Energy Review. While there has not been significant work conducted within this review on this topic, there are a number of other developments that have progressed in the meantime.

As part of the Renewable Energy Generation Working Group, Ancillary service standards and cost allocation have been reviewed with reference to increased penetration of intermittent generation on the SWIS. This work has identified the growth in Ancillary Service requirement in coming years and is reviewing the cost allocation methodology in situations of increased levels of penetration of intermittent generation.

³ Pp 14



More broadly, System Management recently presented a discussion paper to the MAC process with an aim of increasing the level of participation in the provision of Ancillary Services.

An additional design issues/problem (for noting) is:

There is very limited opportunity for participants other than Verve to participate in providing Ancillary Services. This is due to the lack of certainty surrounding the pricing mechanism and the requirement to provide the service at a discount to Verve. System Management will look to develop a day-ahead procurement mechanism and present the outcomes of its analysis at the RDIWG.

4. SUMMARY OF DESIGN ISSUES/PROBLEMS

The summary of Design issues/problems is outlined below. These form part of the scope of work for the RDIWG. To reflect the interrelated nature of some of the market design issues/problems and to assist in the prioritisation process the IMO has suggested grouping some issues for consideration and development. Please note that some issues, i.e. transparency, have been allocated across all the groups of issues. For ease of reference the market design issues/problems retain the same issue number as allocated in the problem statement.

Group 1: Balancing Mechanism

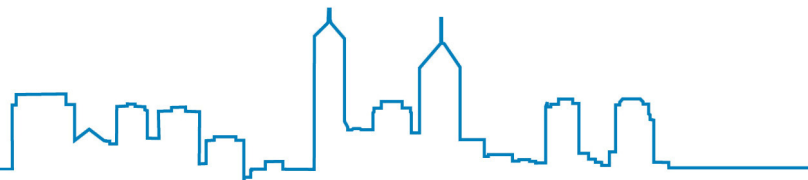
1. There is very limited opportunity for participants other than Verve to participate in providing balancing services and this inevitably means the cost of balancing is higher than it needs to be.
2. Provisions for Balancing Support Contracts have not been effective to date.
3. The calculation of MCAP and the role of UDAP and DDAP mean that balancing prices are not cost reflective and this leads to inefficient incentives for decisions about prices and participation and inequitable financial transfers between participants that compromise the integrity of the WEM.
8. Lack of transparency inhibits the ability of Market Participants to optimise interaction in the daily energy market.

Group 2: Reserve Capacity Refunds

4. At different times the capacity refund arrangements under and over price the value of capacity leading inefficient decisions by participants about the timing of maintenance and presentation of capacity.

Group 3: STEM Operation

5. The timing of operation and single pass design of STEM may be limiting the ability of the market to achieve efficient operation and cost reflective prices and accordingly creates a barrier for participation by all parties.



6. The requirement for resource plans to match STEM outcomes may be limiting participation in STEM and/or forcing inefficient dispatch of IPPs and Verve (as balancer) as IPPs attempt to comply with the resultant resource plans.

8. Lack of transparency inhibits the ability of Market Participants to optimise interaction in the daily energy market.

Group 4: Alignment of Gas and Electricity

7. Poorly aligned gas and electricity mechanisms inhibits flexibility to respond to changing circumstances and produces suboptimal outcomes in the WEM.

8. Lack of transparency inhibits the ability of Market Participants to optimise interaction in the daily energy market.

Group 5: Other Issues relevant to balancing

Please note: these issues may be addressed in some of the other proposed groups.

9. Provision for net bilateral submissions compromises transparency and the accuracy of future price forecasts and may therefore lead to sub optimal decisions about participation by other Market Participants.

10. Pay as bid pricing for dispatch of IPP plant for balancing (outside a balancing support contract) is incompatible with efficient wider participation in balancing and potentially over compensates IPPs which bid at price caps due to uncertainty of dispatch outcomes.

An additional design issues/problem for noting (i.e. not part of the initial work of the RDIWG) is:

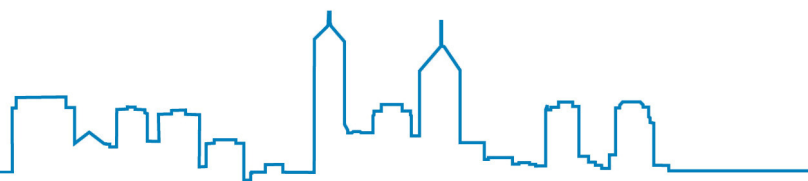
There is very limited opportunity for participants other than Verve to participate in providing Ancillary Services. This is due to the lack of certainty surrounding the pricing mechanism and the requirement to provide the service at a discount to Verve. System Management will look to develop a day-ahead procurement mechanism (as agreed at the 16 June 2010 MAC meeting) and present the outcomes of its analysis at the RDIWG.

MAC members were asked to prioritise these design issues/problems. Synergy, Verve, ERM Power and the IMO each submitted a view; a summary is contained in Appendix 3. Other MAC members noted the difficulty in getting an effective outcome via a ballot process. As such, the IMO agreed to finalise the prioritisation as part of the first RDIWG meeting.

5. RECOMMENDATIONS

The IMO recommends that the RDIWG:

- **Note** the design issues/problems identified through the MREP, Verve Review and subsequent analysis by the MRDT; and
- **Discuss and agree** a final priority order for addressing these design issues/problems.



APPENDIX 1: ASSESSMENT FRAMEWORK FOR INCENTIVES AND OPPORTUNITIES

1. THE NET EFFECT OF PRICE AND COST ALLOCATION

Economic efficiency is a core element in the Wholesale Market Objectives (Market Objectives), against which any proposed changes will be assessed. A disaggregated market looks to Market Participants to make individual decisions about investment and some aspects of day to day operation that together lead to an economically efficient price for wholesale electricity. The Wholesale Electricity Market Rules (Market Rules) determine the incentives that influence the decisions of Market Participants and hence their design is crucial to delivery of economic efficiency.

Incentives result from the combined effect of price and allocation to participants that together create market revenues to individual participants. Clearly incentives can be distorted if the market price is too high or too low and also if the “wrong” parties are exposed (or “right parties” are not exposed) to a price.

1.1 Price

The WEM was conceived as a net market based around physical bilateral contracts, meaning that dispatch was expected to be in accordance with physical contract positions except for the effect of forecasting inaccuracy and plant failures, when Balancing and Ancillary Services would ensure supply and demand are matched. For this reason the processes that allow participants to establish their final net bilateral contracting positions are crucial to the WEM delivering efficient outcomes and reduce the call for Balancing in the absence of any major forecasting errors or plant failures.

The STEM was expected to be a significant driver for efficient contracting in the WEM, but in practice has seen only limited activity, although this has increased. To be effective and efficient, market prices and processes should be designed to create incentives for contract nominations and Resource Plans to align with contracts, and for contracts and contract nominations to align with demand. However, to the extent on the day Balancing is required, this should be economically efficient – drawing on the lowest cost combination of resources that are available.

In practice the WEM was implemented as a hybrid design. That is, with Independent Power Producers (IPPs) participating on a net basis and Verve Energy on a gross basis, and System Management obligated to apply dispatch guidelines prepared by Verve Energy that are designed to optimise the operation of its plant. Verve Energy is obligated under the market Rules to provide the Balancing service and currently IPPs are excluded from this role unless the parties enter Balancing Support Contracts or Verve Energy would otherwise operate very high cost liquid fuelled plant when an IPP could operate lower cost plant.⁴

The resulting design allowed the WEM to commence operation, but is relatively complex and, as detailed later, a number of aspects of the Market Rules cannot deliver efficient or cost

⁴ System Management is able to dispatch IPPs for system security purposes, in accordance with criteria in the Rules at pay as bid prices. Strictly speaking this role is not Balancing per se but will affect Balancing requirements.,

reflective prices. This is leading to unnecessary operational costs that (arguably) also detract from the WEM's potential to attract efficient types and levels of new investment.

1.2 Allocation

The allocation of revenues and charges arising from energy transactions in the WEM appears generally sound and does not require realignment. For example, loads ('Market Customers') that consume more/less than their Net Contract Position are deemed to buy/sell the unused amount to/from Balancing and pay/receive a balancing price (MCAP) for that energy. Similarly generators producing more/less than Resource Plan are deemed to sell/buy the excess to/from Balancing and receive/pay a balancing price comprising MCAP for authorised deviations and fractions/multiples of this for unauthorised deviations.

Separately, the level and allocation of Ancillary Services are under review by the IMO but are not considered further in this paper.

1.3 Net incentive

In summary, broadly the allocation of market prices in the WEM produces directionally efficient incentives, although some of the individual prices are not efficient.

2. STATUS QUO INCENTIVES AND OPPORTUNITIES FOR PARTICIPATION

This section is based around a series of diagrams of the cycle of incentives in the WEM design and notes a number of gaps that should be filled to ensure the net incentives are consistent with efficient and reliable operation.⁵ The incentive cycle also can be seen as describing the characteristics of an efficient market arrangement after major overhaul.

Figure 1 shows the operational processes within the cycle of operation of the WEM. Starting from the point where retailers and generators make their day ahead bilateral submissions (about 4 o'clock on the diagram and about 8am in real time) the processes include the STEM, Resource Plans and dispatch and Balancing operations. These operations result in the calculation of a number of prices and charges that are allocated to participants who are then influenced (or should be) as to subsequent investment, contracting and further daily cycles of operation.

Figure 2 provides additional detail and notes the key design outcomes at each step around the cycle. If any of the processes in the cycle do not, or cannot because of the design, operate as part of the coordinated cycle of incentives, there is a significant risk that subsequent steps will also not deliver outcomes consistent with efficient and reliable outcomes.

⁵ The diagrams were first presented to a workshop for the industry in June 2010

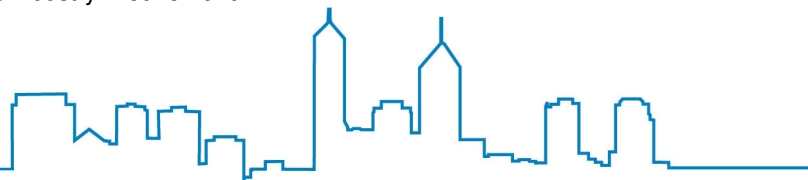


Figure 1 WEM incentive cycle

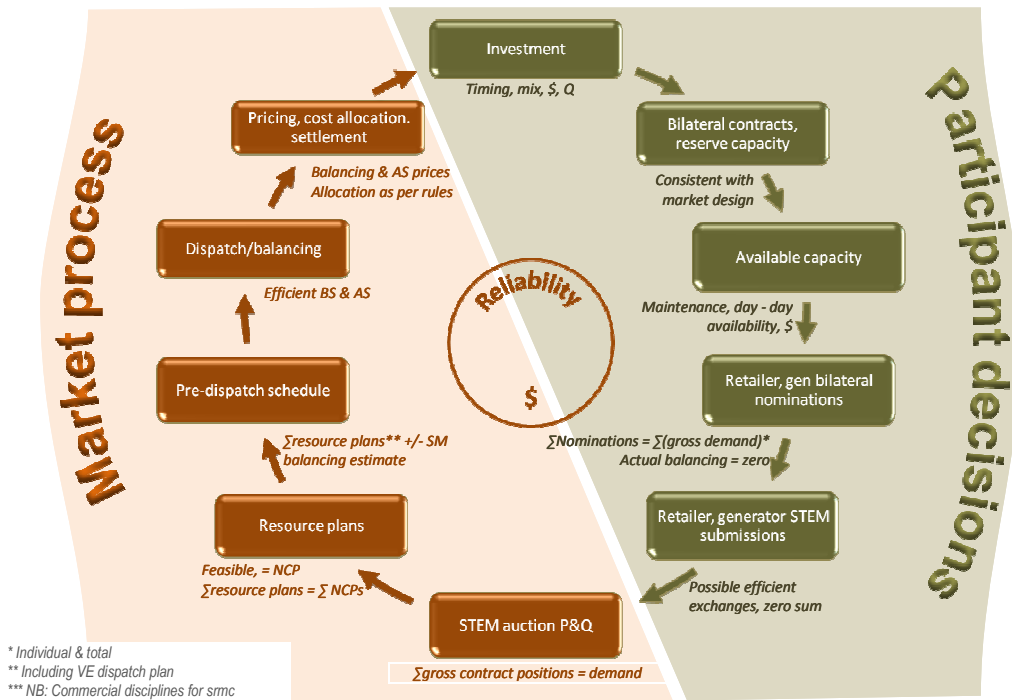


Figure 2 Characteristics of well functioning steps within the WEM incentive cycle

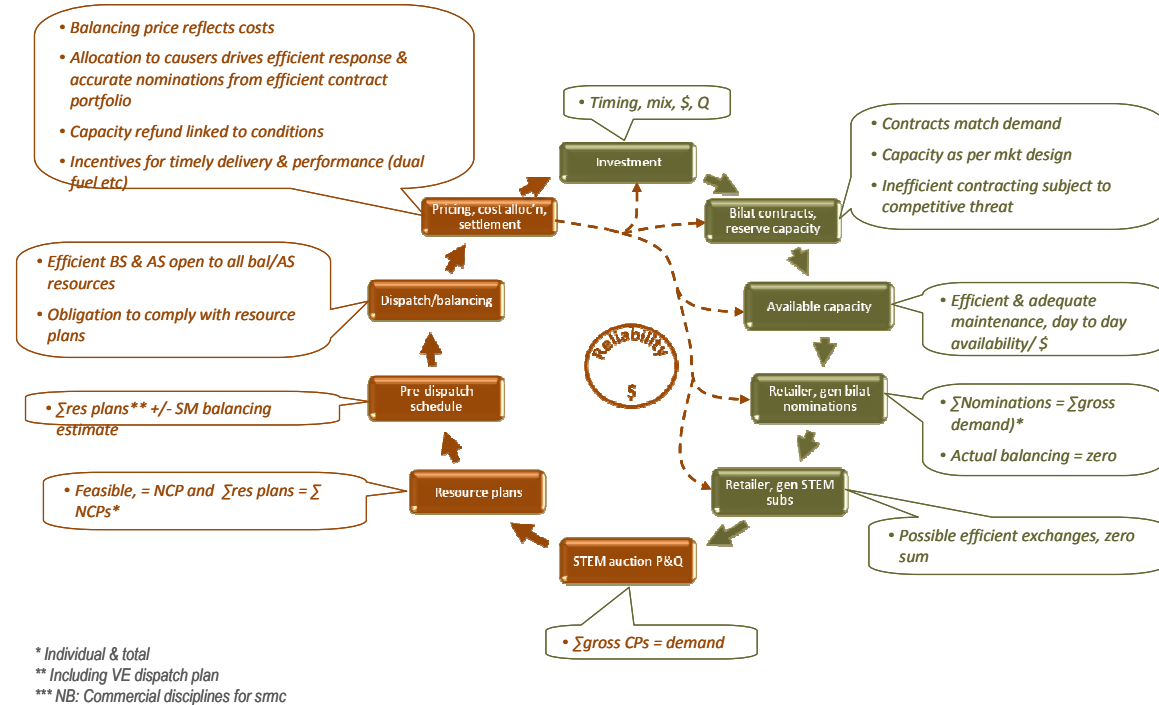
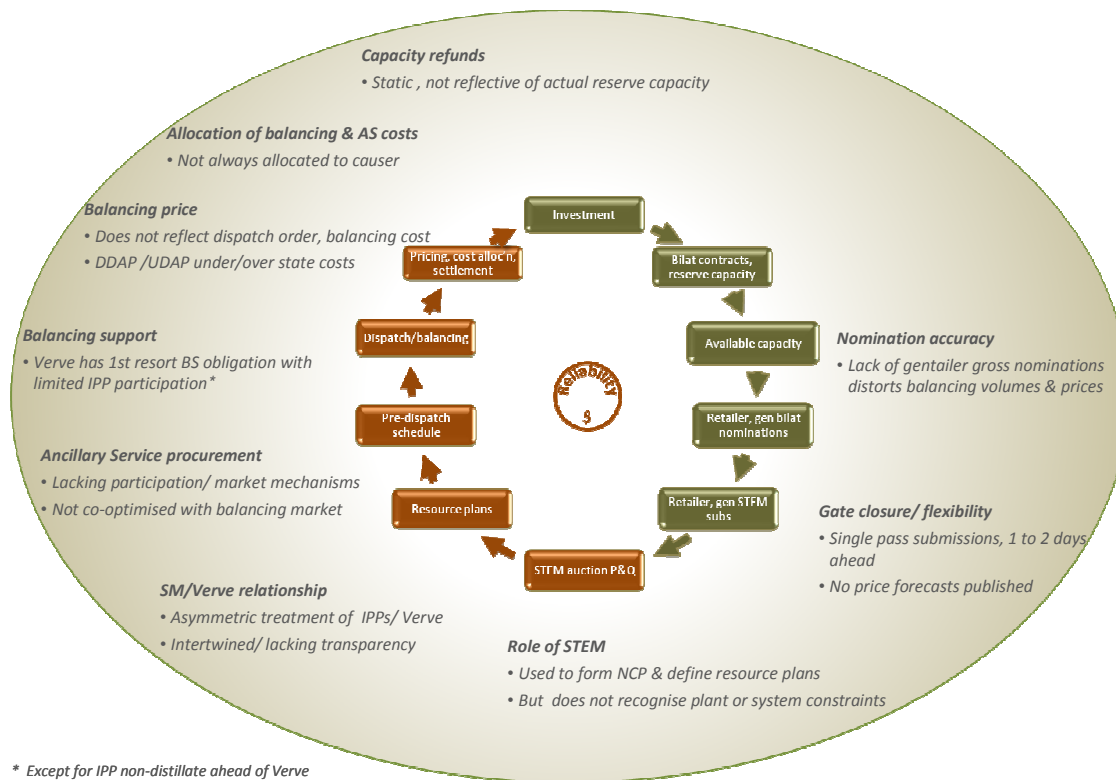
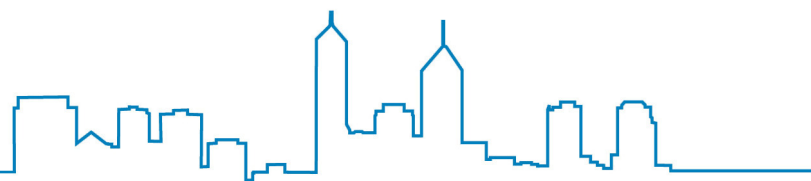


Figure 3 provides a summary of limitations in the operation of the current processes in the WEM. Together the limitations suggest that it is difficult for the WEM to operate effectively. It is also the case that repairing one limitation may not lead to substantial improvement because of limitations in subsequent processes. However, only relatively subtle changes are required to realign each incentive but a package of such changes is required to align the elements of the full cycle of incentives.

Figure 3 Summary critique of current WEM incentive cycle



* Except for IPP non-distillate ahead of Verve distillate



APPENDIX 2: ASSESSMENT OF BALANCING AND DISPATCH ARRANGEMENTS IN THE WEM

1. Current provisions

Under the WEM rules IPPs are scheduled and dispatched in accordance with Resource Plans, and Verve facilities dispatched in accordance with instruction from System Management. The dispatch order for Balancing duty is assigned on the basis of the fuel that will be used – a de facto cost basis. Except where Verve would generate from high cost liquid fuel, Balancing is assigned to Verve and IPP plant is called on if Verve would use liquid fuel. Although it is a complex rule driven process the principles are broadly in line with traditional economic dispatch.

However, IPPs are otherwise excluded from on the day Balancing and thus do not have the opportunity to participate (unless they have entered into a Balancing Support Contract). By implication, the WEM design therefore presumes that any IPP that was prepared to participate in Balancing could have submitted to STEM, and if economic the offer would have been accepted and reflected in the IPP Resource Plan submission. This is not the same as on the day Balancing but can be seen as an opportunity for the equivalent of economic (pre)-dispatch.

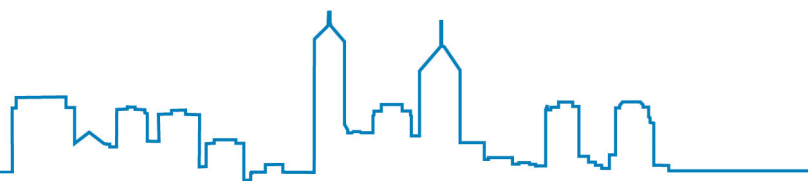
However, participation in STEM is also relatively limited. Potential barriers include the operation and timing of STEM and the distortion of Balancing price calculation (discussed below). As a result not all available Balancing resources are utilised and Balancing must by definition be less efficient than it could if all resources were used. However, Verve represents a decreasing percentage of the generating resource and its cost to balance will rise in the future meaning it will therefore shift up the market merit order and be more economic for downward Balancing and less so for upward Balancing except perhaps at higher system loads.

2. Balancing price

The Balancing price currently comprises three elements: MCAP, UDAP and DDAP. Currently MCAP is based on the price(s) of bids submitted to the STEM process, while UDAP and DDAP factors are defined in the rules and modify the MCAP price for the purposes of settlement to encourage generators to adhere to Resource Plans.

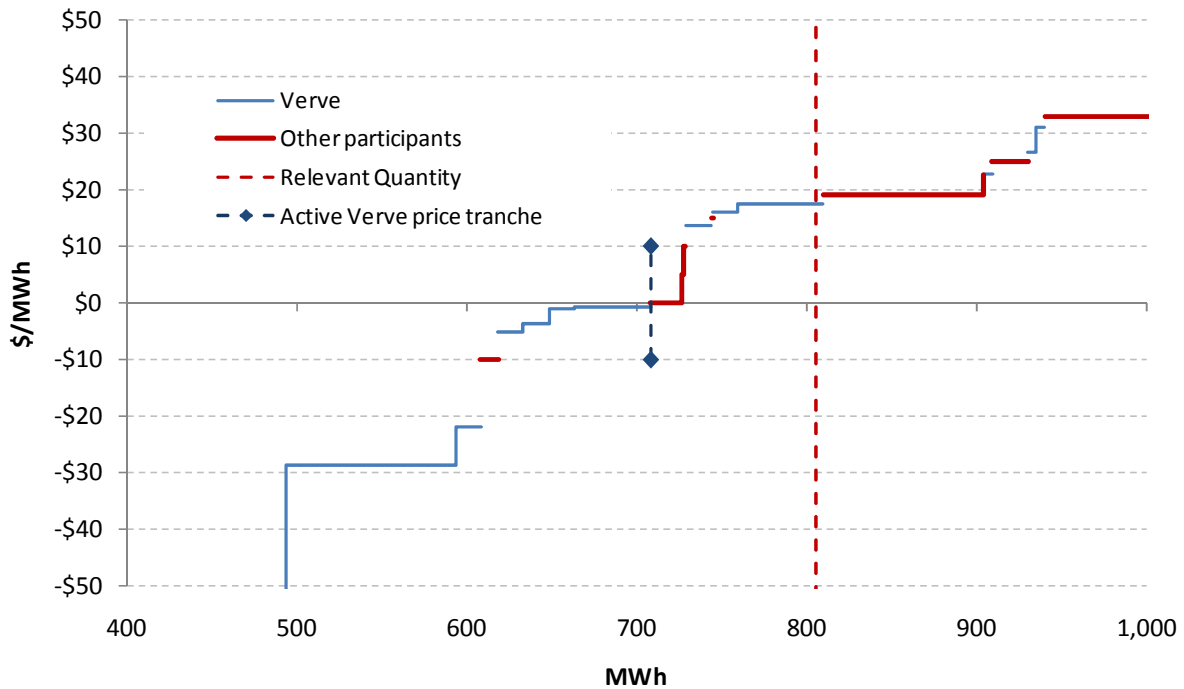
Throughout the review process, investigation found that the Balancing price does not always reflect the cost of Verve providing the Balancing service. This is because the calculation includes the STEM bids of participants not involved in providing the balancing service (in most cases).

For example, figure 4 illustrates the effect for the trading interval starting at 1am on 24 February 2010. The chart shows a portion of the MCAP price curve with Verve and non Verve tranches highlighted separately. In this example, MCAP was set at almost \$20 per MWh (at the intersection of the relevant quantity and the MCAP price curve). The vertical line denoted “active Verve price tranche” indicates the point at which Verve generation would have



intersected the Verve only price curve⁶. The price of that tranche was slightly negative. Thus the cost of balancing indicated by the Verve price curve was approximately \$20 per MWh less than MCAP.

Fig 4: Price formation for trading interval starting 1am 24 Feb 2010.



The difference from a “clean Balancing” price can be seen by an example presented to an industry meeting in June for the 24 hour period to 8am on 1 February 2010 (figure 5). Overnight, during low demand periods, MCAP was significantly higher than the proposed clean Balancing price. The Balancing price seen by the market was therefore not reflective of actual Balancing costs. There were also distortions at other times of the day when the price was higher than the actual cost of Balancing, as determined from the Verve bid prices which are required to be cost based.

It would make sense that the Balancing price curve should be comprised of bids relating to those facilities providing the service.

⁶ In other words, the point at which the loss adjusted Verve quantity intersected the Verve only price curve. The Verve quantity was not actually 710 MWh – the line just highlights the point at which the Verve quantity (about 410 MWh) would have crossed the tranche in the Verve only price curve.

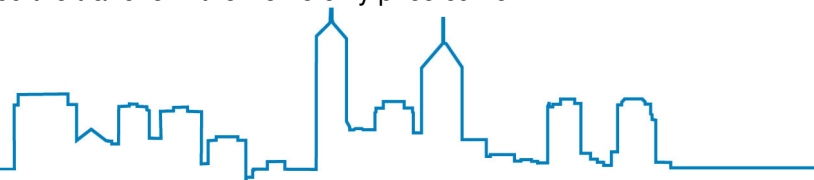
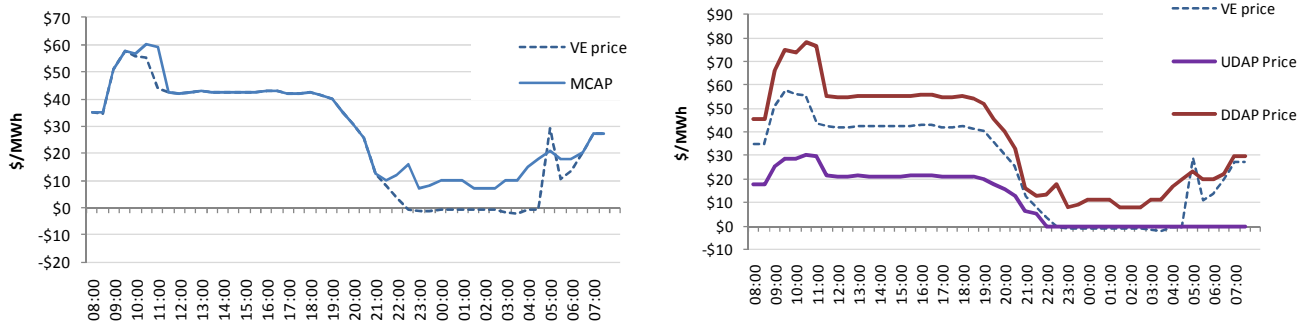


Figure 5 Actual MCAP vs cleaned price 1 Feb 2010



Over time, these distortions send inaccurate signals about the value and cost of Balancing. As illustrated above, DDAP and UDAP further distort the Balancing prices IPPs face for deviations from Resource Plan and/or contract positions. During the same year, the average “clean” Balancing price was approximately \$30/MWh compared to an upward deviation price of approximately \$15/MWh and downward deviation price of \$48/MWh.

While individual days may exhibit distortions it is important to consider whether the effect is pervasive by an assessment over a longer period of time. Figure 6 compares the price duration characteristic for MCAP and the ‘cleaned’ (or Verve Energy curve) during the year ending 31 March 2010. The results support a conclusion that the effect is material and that the rules prevent prices from being cost reflective, thus embedding distorted operational remuneration and investment signals.

Figure 6 MCAP vs clean price 12 months to 31 March 2010

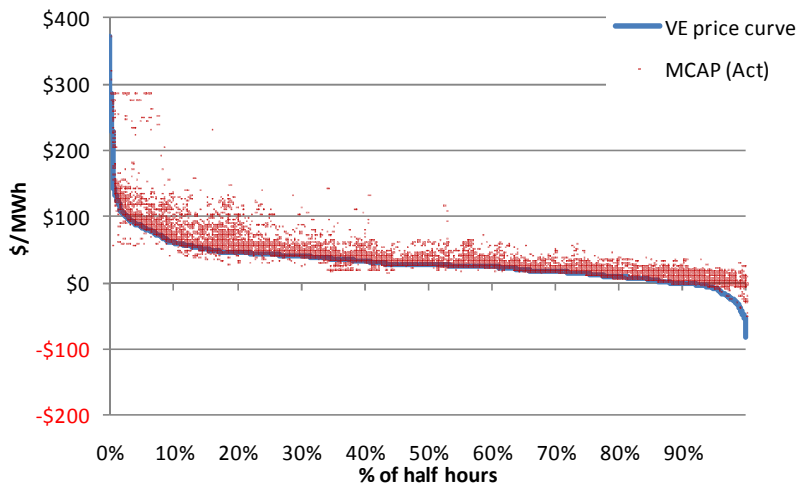
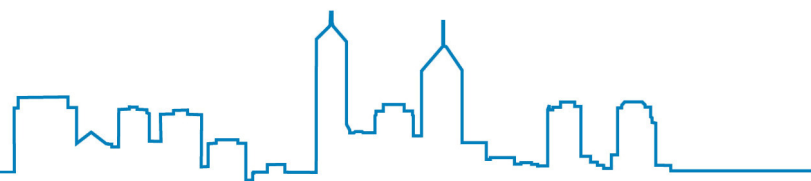
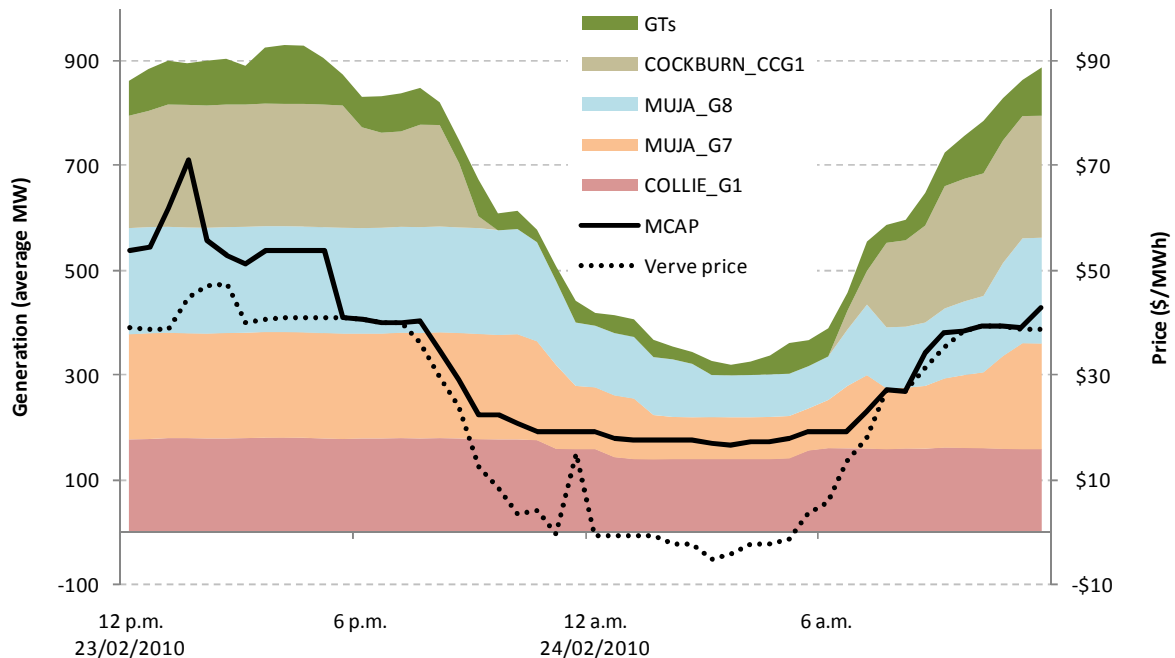


Figure 7 highlights potential inefficiencies and missed opportunities for IPP participation in balancing as a result of current arrangements. It shows generation from selected Verve facilities along with MCAP and Verve’s balancing price (from its offer curve). It can be seen that during the low demand overnight period, Verve facilities were dispatched down to minimum levels or, in the case of Cockburn, taken out of service. Some gas turbine capacity



was also in service over this period. MCAP was significantly less than the Verve price at these times.

Figure 7 Inefficiencies and missed opportunities for IPP participation in balancing



MCAP thus significantly underestimated the value of an IPP being able to participate in balancing overnight, by around \$20 per MWh. i.e. in principle, for any marginal cost above zero an IPP could have been dispatched downward profitably and bought from the balancing. i.e. at a price of around zero.

3. UDAP and DDAP incentives compared with compliance

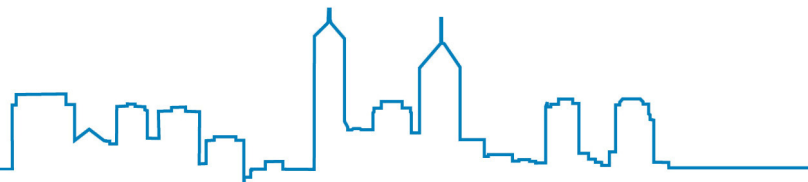
In practice the most efficient outcome for generators in the light of changing conditions in the market may be to deviate from Resource Plans and similarly for loads to bias their nominations high or low depending on the view of the likely range of Balancing prices. A more dynamic market might allow for renominations and resubmission of prices including prices from the suppliers of Balancing. Not having the ability to financially adjust positions through renomination requires that generators maintain resource plan positions. This behaviour is incentivised by applying a price disincentive through UDAP and DDAP. It could be argued that the application of these factors operates as an incentive, but the magnitude of the multipliers is seen by some as being unduly harsh.

In some market environments, incentives to maintain resource plan position are administered through compliance monitoring and enforcement rather than by the application of automatic energy penalties.

4. Balancing Support Contracts

Balancing support contracts (BSCs) are contemplated by the current market rules but no such arrangements have yet been established. The current structures allow for BSCs to be established between IPPs and Verve Energy or IPPs and System Management.

A number of problems with establishing BSCs have been identified. For System Management initiated BSCs, the interleaving of IPP balancing bids with Verve Energy plant is problematic. Visibility of pricing is the key issue. Despite some efforts to establish BSCs between Verve Energy and some IPPs, there appear to be impediments to agreeing mutually acceptable commercial terms. This may require further investigation for the establishment of effective BSCs.



APPENDIX 3: MAC PRIORITISATION OF MARKET DESIGN ISSUES/ PROBLEMS

#	Issue	Alinta	ERA	ERM	Griffin	IMO	LGP	OoE	SM	Synergy	Verve	Water Corp.	WP
1	Balancing Mechanism			1		1				1	1		
2	Reserve Capacity refunds			2		4				5	3		
3	STEM Operation			3		5				4	2		
4	Alignment of gas and electricity			4		2				2	5		
5	Other issues relevant to Balancing			5		3				3	4		

