



**Submission  
to the  
Economic Regulation Authority  
Regarding  
2010 Annual Wholesale Electricity Market Report to the  
Minister for Energy**

**11 January 2011**

**Electricity Retail Corporation, trading as SYNERGY**  
228 Adelaide Terrace  
PERTH WA 6000

Ref: Catherine Rousch  
Tel: 08 6212 1125  
Email: [catherine.rousch@synergy.net.au](mailto:catherine.rousch@synergy.net.au)

## Executive Summary

**Matter** 2010 Annual Wholesale Electricity Market Report to the Minister for Energy by the Economic Regulation Authority.

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**Context** The Economic Regulation Authority is seeking further submissions on any strategic, policy or high-level issues impacting the effectiveness of the Wholesale Electricity Market in meeting the Wholesale Market Objectives.

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**Scope** This submission is provided by Synergy to the Economic Regulation Authority in response to its request in December 2010 for further comments.

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**Key issues** Synergy considers that there are some mechanisms in the Wholesale Electricity Market that warrant review.

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**Recommendations** Synergy makes a number of recommendations herein. These are summarised in Section 7 of this submission.

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## 1 Background

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The Wholesale Electricity Market Rules (**Market Rules**) require the Economic Regulation Authority (**Authority**) to provide the Minister for Energy (**Minister**) with a report on the effectiveness of the Wholesale Electricity Market (**WEM**) in meeting the Wholesale Market Objectives. The Market Rules require the Authority to provide this report at least annually, or on a more frequent basis where the Authority considers that the WEM is not effectively meeting the Wholesale Market Objectives.

To assist industry participants in providing feedback on the effectiveness of the WEM, in June 2010 the Authority released its Discussion Paper: Annual Wholesale Electricity Market Report to the Minister for Energy, to which Synergy responded.

In December 2010, the Authority requested further submissions concerning the effectiveness of the WEM in meeting the Wholesale Market Objectives. Synergy is pleased to provide these additional comments to the Authority.

## 2 Reserve Capacity Mechanism

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The Independent Market Operator (**IMO**) will commence its review of the Reserve Capacity Mechanism (**RCM**) early in 2011. The IMO has already initiated a review of the capacity refund mechanism, following protests by market generators of high refund prices as a result of the increase in the capacity price and System Management's comments that the summer reserve levels would allow short-term outages without putting the power system at risk.

**Comments on Capacity Refunds:** The primary function of the capacity refund mechanism is to encourage capacity providers to maximise their availability during periods of anticipated high demand, thereby reducing the risk of customers losing supply. The mechanism is currently based on a fixed refund profile aligned with expected high demand periods (i.e. summer peak times). Whilst this ensures longer-term planned maintenance outages are arranged around that profile, it also results in short-term maintenance requirements being deferred, sometimes unnecessarily when in fact adequate capacity is available to meet demand.

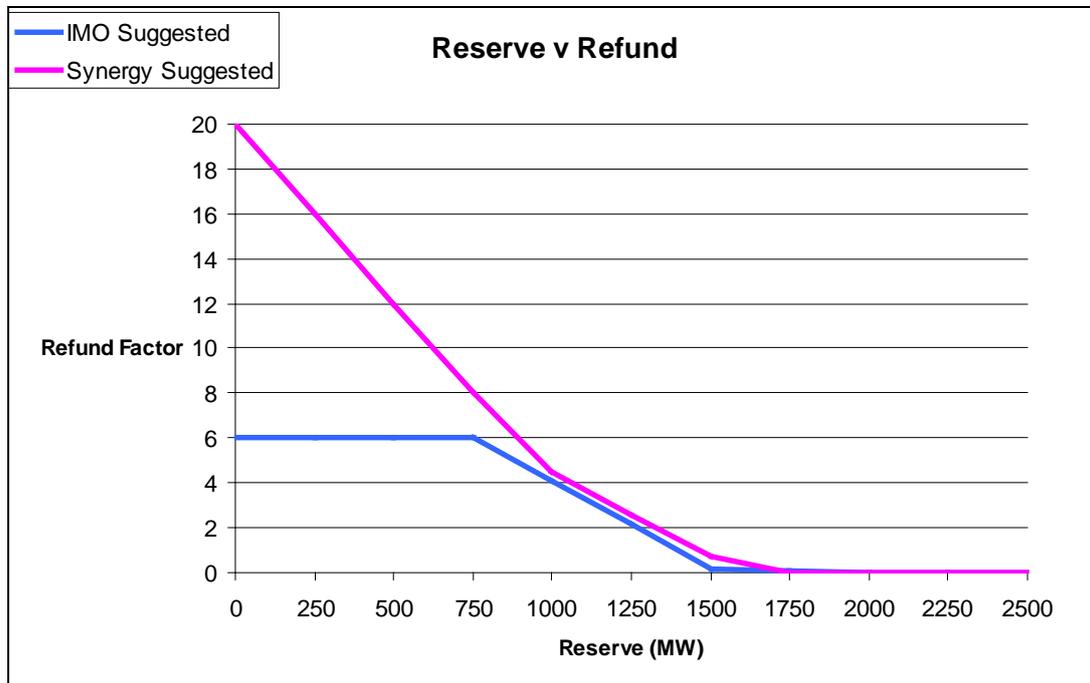
Put simply, the mechanism is not dynamic; it fails to take into account the current level of reserve available when imposing refunds, resulting in inefficient maintenance outcomes which ultimately increase costs borne by the market. The refund rate is based on the reserve capacity price which is an administered price; it is not set competitively and therefore is likely to be too high, which results in refund rates also being too high.

The IMO is proposing a mechanism that inversely rates the refund cost to the Capacity Margin (**CM**) level (as shown in the following chart), where CM is the spare or unused capacity. If the CM is small, indicating a higher risk of non-supply, then a higher refund cost applies; conversely if the CM is high, then a lower refund cost applies such that when there is almost no risk of non-supply the refund factor tends to zero. Still under consideration are:

- The implied break points of 750 MW and 1,500 MW; and
- The maximum refund factor of 6 times the capacity price.

Whilst Synergy would not disagree with the use of break points, the ones currently proposed are untested. Additionally, capping the refunds at only 6 times the capacity

price weakens the incentive against generator outage at times of system shortage. Synergy believes a more appropriate refund cap may be 20+ times the capacity price.



Whilst the proposed amendments are intuitively appealing, the scheme is limited in that, whilst it effectively applies to base-load generators and to a lesser extent to mid-merit generators, it is unlikely to have any impact on the behaviour of peaking generators and curtailable loads that are most likely needed at times of system peak demand. This is because whilst the failure of base-load generation is obvious, the failure of peaking generators and curtailable loads is hidden, given their infrequent use. If a peaking generator is unavailable at times of capacity shortage, the 6 times cap is a small penalty when compared with the annual capacity payment and is unlikely to force changes in availability. At 20+ times the cap, however, infrequently used capacity would be encouraged to implement maintenance and operating regimes that would reduce the risk of not responding to dispatch instructions at times of system stress. A much higher cap would clearly signal to peaking generators, via the refund regime, the value that customers place on capacity being available during system peaks.

**Comments on Capacity Price and Excess Crediting of Capacity:** Synergy believes that the concerns market generators have, regarding the level of capacity refunds, reflect the broader problem with the determination of the capacity price being administratively set and not arrived at by a competitive capacity bidding process. The consequence of this administered process is that the resulting capacity price is set too high and thereby over-prices existing peaking capacity and curtailable load. The level of over-pricing is hard to determine, given no market mechanism exists to discover such a price, but it could be as high as 40% of the current price.

A second, and associated, concern to Synergy is that the RCM consistently capacity credits above that required by the market, again resulting in inefficient outcomes. In this case, the community loses because the resources represented by the over-

capacity could be productively employed elsewhere, increasing the economic wellbeing of the community as a whole. In Synergy's view, the absence of a competitive mechanism to set a market price at a level to attract just sufficient capacity to meet the market's needs results in the wider community bearing costs which it otherwise would not be exposed to.

Synergy would like the broader RCM review to appropriately address the problems of capacity price setting and excess crediting.

### 3 Intermittent Generation

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The Australian Government's 20% Renewable Energy Target (**RET**) will force a significant increase in intermittent generation capacity in the South West Interconnected System (**SWIS**). Unsurprisingly, debate between WEM participants concerning the setting of capacity credits for intermittent generators has been most controversial.

Recently, the IMO commissioned the development of an intermittent generator capacity crediting valuation methodology which takes into account the attributes of intermittent generation, including its contribution to system reliability. The IMO's consultants, using an approach consistent with the criteria for reliability in the Market Rules, delivered capacity credits much higher for solar, which was expected by market participants, and similar to current levels for wind, which was unexpected by market participants.

In response to what some believed were unacceptably high accreditation levels, some market participants developed alternative methodologies<sup>1</sup> with the express intent of reducing capacity available to wind powered intermittent generators on the basis that system reliability would be at risk if the current high capacity crediting levels were allowed to continue.

However, Synergy is less concerned with the approach adopted for capacity crediting wind powered intermittents, but is more concerned that the market has still not progressed how it will manage the expected increase in intermittent generation (particularly wind) and ensure that it forms part of the market investment signal. With the mandatory RET continuing to drive the expansion of wind intermittents in the SWIS, wind investors have no clear signal how the market will limit wind production for system security purposes. Although this could be achieved by capping the capacity (MW) of wind built (constrained solution) or by curtailing wind energy production (market pricing solution), a resolution to this issue has not been progressed. Currently, investors do not know at what levels of wind production that system security concerns will result in significant extra costs to intermittent generators or how these would be regulated.

It is known that significant increases in intermittent generation capacity will bring with it a raft of issues concerning ancillary services. For example, with the arrival of Collgar Wind Farm, System Management will increase the provision of load following from 60 MW to 90 MW (although it is now understood, with some concern, that this value has increased to 100 MW).

The IMO tasked consultants with determining whether load following and spinning reserve needs would be adequate in the face of rapidly increasing intermittent generation and whether the cost allocation methodology was robust. Consultants have made a number of comments, including:

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<sup>1</sup> MAC Meeting No 33: 10 November 2010, Agenda item 7C: *Calculation of the Capacity Value of Intermittent Generation (PRC\_2010\_25)*, pp 104 - 122

- Equations in the Market Rules determining load following costs require correction;
- Division between load following and spinning reserve costs needs review, as the load following component will increase substantially;
- Intermittent generators should only pay the marginal cost of creating load following; and
- The ability for the market to curtail intermittent generators for non economic reasons, such as managing system frequency, is likely to be necessary.

Although the above has been discussed, so far as Synergy is aware no conclusive outcomes have been modelled and therefore the market remains uncertain as to what expectations and constraints will be placed upon intermittent generators. Clearly, this is not a sustainable position and to avoid jeopardising further investment in intermittent generation, necessary so that the market can meet its share of the national mandatory RET, Synergy submits the above needs to be resolved with some urgency.

## **4 Curtailable Loads and Dispatch Payments**

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A concern frequently raised by market participants, including Synergy, is that a curtailable load, when dispatched for capacity purposes, receives a payment despite not producing electricity. This dispatch payment may have been a legacy issue adopted from pre-market contracting behaviour and not fully considered in the bilateral wholesale market context.

A generator under dispatch instructions produces electricity that can be allocated in the market and paid for by a counter-party; this is a normal market transaction. For a curtailable load no such transaction occurs, yet a dispatch payment is made regardless. This would suggest that a curtailable load is getting something a generator providing the same capacity is not getting. Therefore, for the market to be fair, a generator should also get this extra dispatch payment, not because it produces electricity (this has been accounted for via the balancing mechanism) but simply because a curtailable load gets that payment. Given that this does not happen (and it would be nonsensical if it did), it follows that making a dispatch payment to curtailable loads could be construed as being discriminatory against generators.

Synergy's view is that a curtailable load receives appropriate compensation payment through the capacity credit mechanism; it has elected to accept a reduced level of reliability by offering itself to be turned down/off at System Management's request. Dispatch payments to curtailable loads are an unnecessary cost burden on the market without any resulting benefit i.e. no additional energy is produced. Synergy therefore believes that to remove this partiality in the market, the most effective solution is to remove the dispatch payment from curtailable loads.

## **5 Early Entry Capacity Payments**

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The Market Rules allow generators that are commissioned in advance and are available for production before the start of the capacity year on 1 October to receive capacity payments up to four months early from 1 June. This provision recognises that generators can often experience several months of difficulties after commissioning and that not encouraging them to arrive early could place unacceptable levels of unreliability on the market as they attempt to address any

problems over the summer period. A case in point is Griffin's Bluewaters Power Station which arrived after the start of summer 2008, placing considerable strain on the reliability of the SWIS due to a raft of unforeseen issues it was unable to resolve within its allocated commissioning window.

This provision also allows Demand Side Management (**DSM**) loads to access early capacity payments despite no shake-down period being required for such technology. A draft rule change proposal to correct this extended payment to DSM has raised concerns amongst certain sectors, who believe that the proposition discriminates between different technologies and is thus at odds with the objectives of the market.

In response to this point, the IMO commissioned consultants to review the rule change proposal's fit with the Wholesale Market Objectives. Interestingly, the consultant's report questions the economic rationale for making any early capacity payments to DSM or generators as the conclusion is that such payments should not be socialised costs to the market but borne by the respective generator or DSM provider (as they are best placed to manage the risk).

Synergy believes that it is worth re-raising the whole early payment of capacity issue on the basis that the market may have gotten the incentive wrong, not just for DSM but also for generators. Given the WEM is a bilateral market design, meaning each participant covers its own position, the early arrival of generation imposing a cost on participants that have no relationship with that capacity provider raises questions of fairness and efficiency. Synergy believes this type of question needs to be addressed in the upcoming RCM review.

## **6 Individual Reserve Capacity Requirements**

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Synergy supports the IMO's suggestion to remove the concept of using the 12 peak trading intervals (being the three peak trading intervals on the four peak trading days) to set the Individual Reserve Capacity Requirements (**IRCRs**) and to replace it with an equivalent energy consumption liability.

Currently, IRCRs can be gamed by a load switching off during the 12 peak trading intervals in circumstances where it would not ordinarily do so in order that its capacity requirement is zero. This reduces the charge this load would have to pay for capacity for the entire following year, whilst other loads in the market would be required to pick up the extra cost. The current method of determining the IRCR is limited to an assessment at system peak and so fails to recognise that capacity is required by loads throughout the year. Synergy believes that this gaming of capacity liability needs to be addressed in the upcoming RCM review.

The alternative capacity liability approach would charge loads for capacity based purely on their energy consumption, in a manner similar to how network charges are employed. That is, if a load consumes more energy then it will pay more for capacity than a load consuming less energy. The pricing of such an approach would need to differentiate charges for on-peak and off-peak so as not to bias consumption behaviour towards inefficient outcomes.

Synergy believes the current market approach in assigning capacity requirement to loads needs to be addressed in the upcoming RCM review.

## **7 Recommendations**

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In summary, Synergy would recommend that the IMO:

- Seek to increase the capacity refund cap to incentivise infrequently dispatched generators and curtailable loads to maintain high availability;
- Seek to reduce the cost of refunds to the market by setting the capacity price in the RCM through the introduction of competitive tension, rather than through the sliding scale adjustment;
- Review the capacity crediting mechanism to resolve excess crediting in the market, which results in an inefficient allocation of resources to the detriment of the wider community;
- Progress modelling of the expected increase in intermittent generation and ensure that it forms part of the market investment signal;
- Consider removing the dispatch payments to curtailable loads, which, in Synergy's view, place an unnecessary cost burden on the market without any resulting benefit;
- Assess whether early capacity payments to DSM or generators should be continued and in what form; and
- Continue with developing its suggestion to replace the concept of using the 12 peak trading intervals to set IRCRs with a capacity liability approach based on consumption.

**Catherine Rousch**

Manager Wholesale Regulatory & Compliance  
Synergy

08 6212 1125

0448 878 655

catherine.rousch@synergy.net.au