

**SUBMISSION TO THE**

**ECONOMIC REGULATION AUTHORITY (ERA)**

**REGARDING THE MERREDIN ENERGY PTY LTD**  
**APPLICATION FOR AN ELECTRICITY GENERATION LICENCE**

Attention of Assistant Director Licensing

MAY 2012



# Executive Summary

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| <b>Matter</b>     | The ERA has requested public comment on an application by Merredin Energy Pty Ltd for an electricity licence for their 82 MW facility currently under construction near the town of Merredin. This facility will be available in July 2012 and is credited for the 2012/13 capacity year.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Context</b>    | The ERA is accepting public submissions on the application up to 4:00 pm (WST) on 11 May 2012.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Scope</b>      | Synergy provides this submission to assist the ERA's deliberations with respect to its application assessment process in respect of consistency with the requirements to hold a licence and more generally whether granting a licence would be contrary to the public interest.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Key issues</b> | <p>That the grant of a generation licence to Merredin Energy is not in the public interest for the following key reasons:</p> <ol style="list-style-type: none"><li>1. The existence of this new generator is contrary to government policy encapsulated in the wholesale market rule objectives primarily because of the significant cost of this generation facility to the market and minimal to no benefit (in the form of more reliable production of electricity) given the current substantial excess of capacity, including peaking capacity in the wholesale electricity market.</li><li>2. The negative impact on customers who are required to bear higher costs of electricity with no discernible benefit as a result of retailers passing through additional costs that they pay to the IMO to fund this over supply of capacity.</li><li>3. The requirement for Synergy to receive and taxpayers to fund a higher community service obligation to the extent consumer tariffs do not allow Synergy to recover all of its costs with additional costs partly contributed to by Merredin Energy's capacity costs.</li><li>4. The IMO's figures and Synergy's internal modelling show that a surplus of peaking capacity already exists and the construction of Merredin Energy's would simply add to that surplus.</li></ol> |

## 1. Background

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In response to the ERA's public invitation issued on 18 April 2012, Synergy is pleased to make a submission on the application by Merredin Energy Pty Ltd (**Merredin Energy**) for an electricity generation licence in respect of the construction and operation of their 82 MW power station near the town of Merredin, Western Australia.

## 2. Licence application process – must not be contrary to the public interest

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In the granting of an generation licence the ERA must consider the public interest, as required by the criteria under clause 9 detailed in clause 8 (5) of the Act. This criterion is restated in section 5.5 of the Authority's guidance document publication entitled: Electricity, Gas and Water Licences: Application Guideline and Forms – September 2011. Synergy wishes to comment on the suitability of the ERA granting Merredin Energy's application for a generation licence according to these criteria.

**Criteria 1** – *“The policy objectives of government in relation to the supply of electricity ... services including that which is not limited to providing safe reliable services”*

The policy objectives of government are best reflected in the wholesale electricity market objectives<sup>1</sup>. The first market objective has most relevance here given it deals explicitly with the concept of safe reliable services. This objective requires the wholesale electricity market (WEM):

*“ to promote the economically efficient, safe and reliable production and supply of electricity and electricity related services in the south west interconnected system”*

The wholesale electricity market objectives link economic efficiency with safe and reliable production. The safe and reliable component is dealt with in the WEM through the reserve capacity mechanism which ensures sufficient capacity is credited and so operational to meet expected electricity demand at all times. The first part of the objective, economically efficient, balances the need for reliability with the prudent need to consider cost. Too much capacity, as is currently the case, is consistent with the safe reliable part but inconsistent with the economic efficiency part. Both parts of the objective represent government policy objectives and need to be considered collectively.

The ERA is well aware that the WEM has retained considerable over supply of capacity. Leading into the 2012/13 capacity year, the first year Merredin

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<sup>1</sup> Market rule 1.2.1

Energy expects to use its capacity credits, this over supply is 874 MW<sup>2</sup> or 17%, using the 2011 statement of opportunity (SoO) forecast published figures<sup>3</sup>. This over supply will cost the WEM \$162.6 million in the 2012/13 capacity year for capacity not required by the market rules reliability criteria<sup>4</sup>. Merredin Energy's facility represents nearly 10% of that oversupply.

The over supply of capacity does provide a small boost to the reliability of supply, but at significant cost. The IMO has recently engaged a consultant to quantify in dollar terms the value to the market of this increase in reliability. The market rules require the IMO to set the minimum required capacity for the market at a very high level to ensure limited electricity supply disruption. As a result of this very conservative, safety- and reliability-focused methodology the benefit of crediting above that requirement is minor.

The Lantau Group<sup>5</sup> in its role of assisting the reserve capacity mechanism working group has estimated the value of the over supply of capacity. Their estimate suggests a value of improved reliability from surplus capacity is less than \$1,000 per MW. This means that the resulting benefit to the WEM for an over supply of capacity of 874 MW for the 2012/13 capacity year is less than \$874,000 compared to the cost of that capacity of \$162,564,874.

Merredin Energy will provide 70 MW of capacity from October 2012 if allowed a generation licence. The granting of this licence will deliver an extra cost to the WEM of at least \$13 million in 2012/13 capacity alone for a reliability benefit of less than \$70,000. It is therefore Synergy's view that the Merredin Energy request for a generation licence fails the policy objective of the government criteria. Although the granting of the generation licence to Merredin Energy will marginally improve reliability, this theoretical reliability improvement comes at an unjustifiable cost that is almost 186 times greater than the economic benefit of that reliability.

Synergy also does not believe that the IMO should consider the potential medium to long term needs of the WEM for this type of peaking generation. In this instance Merredin Energy began construction in June 2011 and believes it could be operational by July 2012, so it is genuinely possible for peaking facilities to be built relatively quickly. The IMO is currently forecasting a potential need for peaking generation no sooner than October 2016<sup>6</sup>, and a peaking facility that is not even yet in contemplation could potentially be built at a later date to meet the IMO-forecasted need.

## **Criteria 2 – “The interests of customers generally or of a class of customers”**

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<sup>2</sup> The 2011 SoO indicated a capacity requirement of 5,121 MW and the IMO credited 5,995 MW delivering an over supply of 874 MW.

<sup>3</sup> Although the 2012/13 capacity year was based upon the 2010 SoO the 2011 SoO is a more recent and therefore accurate forecast of the need of capacity.

<sup>4</sup> Market rule 4.5.9.

<sup>5</sup> Review of RCM: Issues and Recommendation available on the IMO web site.

<sup>6</sup> Synergy considers this timeframe results from too high a forecast of demand and the need for new peaking capacity is more likely after October 2018.

In the context of a Merredin Energy's application for a generation licence, Synergy views the reference to customers as meaning retail customers connected and metered in the south west interconnected system (SWIS).

The commencement of the 2102/13 capacity year has special significance for retail customers given the significant increase in the cost of capacity to their bills as a consequence of an increase in the over supply of capacity and the increase in cost for each MW of capacity.

With the commencement of the 2012/13 capacity year this October the WEM will see the price of a capacity credit increase to \$186,001, a rise of 41% over the 2011/12 price of \$131,806. The actual increase in cost to retail customers will be higher at 47% as a result of a significant over supply of capacity combined with this higher per MW increase. Synergy estimates that retail customers will pay an estimated \$315,000<sup>7</sup> for each MW of summer peak demand, an increase of \$100,000 per MW on the 2011/12 cost.

The granting of a generation licence to Merredin Energy's facility will contribute to this increase in cost to retail customers for 2012/13 with little benefit to those retail customers' supply reliability. The contribution by Merredin Energy to reliability is arguably even less, as by their own admission they do not believe they will ever be called to generate. Merredin Energy's MW will increase the cost to retail customers by \$13 million in 2012/13 capacity year, and by \$14.6 in 2013/14.

In addition to Merredin Energy contributing to the cost of retail customers in 2012/13 it potentially will increase the cost for several months in the 2011/12 capacity year via the early capacity payment provisions. In Merredin Energy's licence application they state their facility will enter service in July 2012. This suggests that this facility will be eligible to apply for early capacity payments for August and September, prior to the start of the 2012/13 capacity year. If this occurred then the IMO would be required to pay \$1.5M to Merredin Energy. That cost is then passed onto retailers, which is then passed on to retail customers in the form of higher prices. .

The additional capacity from Merredin Energy's facility is not needed in 2011/12 given the market already has 5,290<sup>8</sup> MW of credited capacity to cover a forecast of 4,930<sup>9</sup> MW. Clearly there is no need to make early capacity payments to the Merredin Energy's facility given the current level of over supply, but the granting of a generation licence would allow this to happen.

Taking into account for the cost of capacity to retail customers and where these costs come from, retail customers' interests are not best served by the ERA granting Merredin Energy's facility a generation licence.

**Criteria 3** – *“Social welfare and equity considerations, including community service obligations”*

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<sup>7</sup> This calculation assumes that the TDL and NTDL ratios are similar to 2011/12 capacity year.

<sup>8</sup> For 2011/12 the IMO credited 5,493 Mw but this has been reduced here to 5,121 MW because of problems with Verve Energy's LMS 100 machines.

<sup>9</sup> The forecast need for capacity from the 2011 SoO.

The ERA is aware that the cost of arranging and delivering supply to tariff customers is higher than the amount Synergy charges those tariff customers. This gap is met by a government top-up payment to Synergy called a community service obligation (CSO) payment. A CSO is ultimately funded by all taxpayers.

Synergy by its aggregate demand represents about 80% of the capacity liability in the WEM of which 60% of this capacity liability comes from the demand of tariff customers. In calculating its cost of goods sold Synergy apportions a certain amount of its capacity costs to the costs of serving tariff customers. Therefore the higher these capacity costs, the higher the cost of Synergy's cost of goods sold and the greater the gap between what Synergy can charge and its costs. The result is an increase in the CSO.

To reduce the level of CSO payments made by the government to Synergy requires a reduction in the cost or the components of Synergy's costs. Therefore a reduction in the payments for capacity by reducing the volume of over capacity will achieve a reduction in the dollar amount of the CSO required from government. Although Merredin Energy is not the complete cause of Synergy requiring the government to provide a CSO, its cost directly contributes to the level of the CSO needed.

The ERA should reject Merredin Energy's application for a generation licence because to grant such a licence would result in an increase in the CSO payment to Synergy from government.

**Criteria 4** – *“The importance of competition in electricity ... supply markets”*

With reference to Merredin Energy's facility its existence in the WEM provides no pure capacity competition given the over supply of capacity that exists. In terms of creating energy production competition Merredin Energy also does not deliver any improvements here given its liquid firing restriction requiring the WEM to pay the alternative maximum STEM price when used which is higher than required for gas fuelled peaking facilities. This facility would not be a source of supply, always bidding at the cap rate, and therefore would not contribute to competition in the short term energy market (STEM).

Merredin Energy is also a poor cousin in regard to other liquid fuelled peaking generators such as Verve Energy's Geraldton or Kalgoorlie gas turbines because of the reduced loss factor benefit it provides related to its location. Given the higher loss factor for both Geraldton and Kalgoorlie gas turbines they would be dispatch in preference to Merredin Energy's facility.

Merredin Energy being an expensive facility for System Management to use means that it would not be dispatched, therefore it does not contribute to or improve competition.

**Criteria 5** – *“Economic and regional development factors, including employment and investment growth”*

In assessing this criterion the ERA should look only at the potential future benefits that could arise from the creation of this facility. The ERA is assessing future benefits under this criterion, and not what contributions to economic and regional development Merredin Energy may have chosen to make before submitting its application. Therefore, the extent to which Merredin Energy

created employment or made other contributions in the region prior to the date of its application is not relevant to the ERA's assessment.

The application submitted by Merredin Energy makes it very clear that it will make little if any contribution to economic and regional development factors. As stated in its application for licence it '*will generally operate without staff on site*<sup>10</sup>'. The facility itself will be automatic with no local personnel needed on site.

Given that Merredin Energy's facility is automated requiring no personnel and given its high cost will not be called upon to operate, Synergy cannot perceive any future economic and regional development benefits from the granting of this generation licence.

#### **Criteria 6 – “Environmental considerations”**

The impact of Merredin Energy on the local environment is not expected to be significant given it is unlikely to be required to be operated. The times it is operated it will be fuelled by diesel fuel which when burnt produces by-products which are unfriendly to the environment.

### **3. Indications suggest a surplus of peaking capacity**

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Several of the above criteria assumed that Merredin Energy's facility was surplus to requirement as determined by the IMO in their statement of opportunity (SoO) document. The question is whether the market needs another diesel fired peaking facility or whether sufficient more flexible and lower cost facilities already exist to meet the IMO's need.

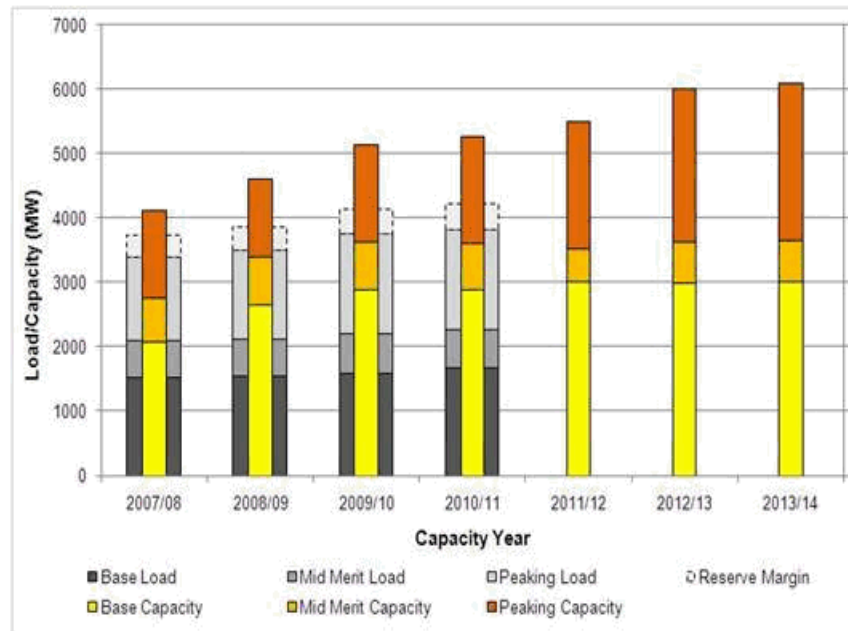
The following chart comes from the IMO's web site and shows the credited volume of capacity by the general categories of base-load, mid-merit and peaking compared with what was used to meet the same segments of the peak load. What this chart reveals is that there is an excess of low cost energy producing base-load capacity in excess of the base-load needed. The diagram also indicates that there is sufficient mid-merit and peaking available, but these are partly displaced by the base-load. We know that if an electricity market has an excess of more available capacity such as delivered by base-load facilities, it does not therefore need the same quantity of lower available capacity such as mid-merit or peaking facilities. Effectively some of the base-load facilities operate a mid-merit and mid-merit transition into a peaking operation.

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<sup>10</sup> Section 1.2 page 6/51 of application.

## Capacity Type and Load Characteristics

Electricity demand is often referred to as Base Load, Mid Merit, or Peaking Load. To meet the varying needs of users, Base Load plant traditionally operates with a high capacity factor, while Peaking plant will only be used on the highest of demand days. To capture these characteristics for the SWIS, the amount of Base Load, Mid Merit and Peaking plant has been plotted against the actual load characteristics seen within the SWIS.



The choice of how to classify plant (and load) can be difficult, but for the above figure, base load is defined as the load that was being supplied more than 75% of the time, mid merit load as being used between 25% and 75% of the time and peak load as any load on for less than 25% of the time.

### Modelling also indicates peaking capacity not required

Merredin Energy has stated in its generation licence application that *'the station is planned to fulfil a peaking role<sup>11</sup>'*. It is therefore relevant to review the current mix of IMO credited capacity and test the extent the existing peaking capacity will be required to be used in the next few years and so answer the question does the WEM need another peaker like that being proposed by Merredin Energy.

A review of the 5,995 MW of credited capacity for the 2012/13 capacity year reveals that 2,350 MW can be defined as base-load, some 850 MW as mid-merit, 540 MW of load following, 190 MW of intermittent capacity and 2,070 MW of peaking/DSM.

Of the 2,070 MW of peakers/DSM capacity some 460 MW is diesel fired only, 1,150 MW is gas or dual fuelled and 454 MW is demand-side. Merredin Energy's capacity fits within the 460 MW diesel fired category. Synergy's dispatch modelling for the 2012/13 capacity year indicates that only 100 MW of the most expensive 460 MW of peaking generation capacity is expected to be used and used for less than 7 hours in the capacity year. Similar results are delivered when looking at 2013/14, 2014/15 and several other future years. The highest need of this 460 MW of peaking capacity is 25 hours operation in

<sup>11</sup> Introduction page 4/51.

2015/16 still using only 100 MW of capacity. Clearly Merredin Energy's capacity is not needed.

On the basis of the capacity information provided by the IMO and Synergy's own internal dispatch modelling it is clear that Merredin Energy's capacity is truly surplus to the requirements of the WEM and that it is not needed and most likely will not be called to operate. This analysis adds further evidence to the argument that by granting this facility a generation licence would not be in the public interest.

## **4. Comments and recommendations**

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The following comments and recommendation are proposed:

1. That Merredin Energy's facility is surplus to the WEM capacity needs and as such if issued with a generation licence will increase costs without commensurate reliability benefits in contradiction to the market rule objectives and the policy objectives of the government.
2. That the cost of a unit of capacity to retail customers is increasing and that by granting a generation licence to Merredin Energy would add to this increase in cost to customers.
3. Given that cost reflectivity has not been established for tariff customers and the government is paying a CSO to make up the shortfall, any increase in surplus capacity will increase the CSO payment from government to Synergy. The granting of a licence to Merredin Energy would increase the level of CSO payments.
4. There is no economic, environment or local benefit reason for the ERA to grant Merredin Energy a generation licence.
5. The wholesale electricity market is already in an over supply of peaking capacity which is not expected to be needed and so adding more of this capacity is generally not in the public interest.