



Phone: (08) 9389 8982
Fax: (08) 6314 6646
Level 3, 1060 Hay Street
West Perth WA 6005
PO Box 814
Claremont WA 6910

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

31 July 2010

Re: Annual WEM Report to the Minister

Introduction

Mid West Energy Pty Ltd (MWE) welcomes the opportunity to comment on the ERA's Annual Report to the Minister Discussion Paper.

MWE is a renewable energy project developer. Its most advanced project is the 200MW Perenjori Solar Thermal Power Project located in the heart of the Mid West region of WA.

1. Strategic issues affecting the WEM

MWE believes that in assessing the effectiveness of the Wholesale Electricity Market (WEM), the ERA should take into account both global policy drivers, such as mitigating carbon emissions from the stationary energy sector, as well as local conditions. For example, some key themes should underpin policy development:

- WA has a rich renewable energy potential;
- In the next decade the State Government will have to take positive policy steps to ensure the 20% renewable energy target is met;
- The move towards cost reflective pricing should be a driver that underpins energy policy formation – this will enable renewable energy to compete more evenly with fossil fuel generation;
- Renewable energy will form the basis for the transition to a low carbon energy sector, but there needs to be a diversity of energy types;
- Western Power, as the main network provider needs to be more pro-active in facilitating and planning for renewable grid connections, by identifying with industry and the Office of Energy future areas for new technologies such as solar, wave and geothermal power;

- Private sector developers of renewable energy need encouragement and support from the Government as they are the best placed to take risks and develop new projects;
- Government's role should by and large be to set the policy framework and put in place targeted incentives to encourage private sector investment in renewable and low carbon technologies – not to compete with them.

2. Impact of feed-in tariff and renewable energy rebates/buy back schemes, as they relate to the efficiency, reliability and security objectives of the WEM

Currently, the two major policies relating to renewable energy in WA are the Renewable Energy Target (RET) and the feed-in tariff for small scale generators.

The RET's target of 20% renewable energy by 2020 is a 'volume' based target, with no consideration given to the time at which REC's are produced, or their value to the electricity network. In the absence of complimentary policies, it is quite likely that almost all of the target will be met with wind generation, as this is currently the lowest direct cost form of renewable energy. Several market observers believe this level of wind generation on the SWIS would present several challenges to the network.

Electricity generated from solar energy is ideally suited to the WEM due to the high correlation of solar output to times of peak network demand and the feed-in tariff for small scale generators will assist with the penetration of small scale generators, mainly residential photovoltaic (PV) systems. Distributed small scale generation has certain benefits for the network, including:

- the potential to defer transmission line upgrades;
- diversifying the fuel source both technologically and geographically; and
- increasing consumers awareness of electricity consumption in the home.

However, despite considerable price reductions in recent years, residential PV systems remain a very expensive method of generating electricity. The WA feed-in tariff rate of 40c/kwh plus the 7c/kwh renewable energy buyback scheme provide small scale with revenue of 47c/kwh in addition to generous purchase rebates.

This is significantly higher than large scale solar projects which can produce electricity for less than 20c/kwh. The feed-in tariff for small scale generators is therefore a highly inefficient mechanism for delivering renewable energy to the WEM.

A feed-in tariff for large scale solar projects of 20c/kwh would deliver hundreds of MW of large scale solar projects and MWE considers the feed-in tariff should be expanded to cover large scale solar projects, with a reduced feed-in tariff rate.

A feed-in tariff for large scale solar projects would produce more electricity for less than half the price of the feed-in tariff for small scale generators.

3. Reserve Capacity Credit allocation to Intermittent Generators

The current methodology for the allocation of capacity credits to intermittent generators is based on an averaging approach, with no consideration given to the correlation of output to times of peak network demand. Solar energy has a low average capacity factor (approximately 25%), but an excellent correlation of output to times of network demand (approximately 60%).

Accordingly, the current methodology discriminates against solar energy by undervaluing the contribution to reserve capacity and is a major impediment to the development of solar energy projects.

The Renewable Energy Generation Working Group (REGWG) has been tasked with recommending a revised methodology and MWE has contributed to the REGWG since mid 2009. The capacity credit allocation methodology that is decided upon and adopted by the market rules will have a material impact on the type and amount of renewable energy developed in Western Australia.

With some of the best solar resources in the world, Western Australia is well placed to develop a leading solar renewable energy sector that will play a critical role in cutting Australia's greenhouse gas emissions and help to build a strong renewable energy industry in Australia.

Current Market Rules

The current method used to calculate capacity credits for intermittent generators under Rule 4.11.3A is based on an average generation for the preceding 3 years and does not give consideration to the contribution to capacity during times of peak demand.

This has the inequitable effect of over allocating capacity credits to intermittent generation sources that have a low correlation between output and times of peak demand (such as wind), and under allocating capacity credits to intermittent generators that have a very high correlation between times of peak output and times of peak demand (such as solar).

Solar is the most valuable of the intermittent generation sources, yet it is being penalised by the current calculation methodology of clause 4.11.3A of the Market Rules.

Capacity Credit Methodologies

MWE recognises that the underlying basis for the Reserve Capacity Mechanism is to create a financial mechanism that ensures that there is sufficient generation capacity in the market to meet electricity demand during periods of peak consumption.

MWE believes that methodologies having a high degree of variability of reserve capacity allocation from one year to the next are not in the interests of the reserve capacity market, nor are they in the interests of market participants. As solar energy has an excellent

correlation of output to times of peak demand, the methodology that is selected must appropriately value this contribution.

Wholesale Market Objectives

Adopting a methodology that accurately values the contribution solar makes to system reliability will support the Wholesale Market Objectives, in particular:

(a) to promote the economically efficient, safe and reliable production and supply of electricity and electricity related services in the South West interconnected system

The recent gas crisis caused by the Varanus gas explosion highlights the need for increased diversity in generation sources in the SWIS. Changing the capacity credits methodology as proposed above will facilitate new solar generation into the SWIS, increasing the diversity and hence reliability of electricity supply in the SWIS.

Further, the legislation for the Renewable Energy Target (RET), gives no consideration to the contribution that a renewable energy facility makes to capacity at times of peak demand. This is likely to cause a dramatic expansion of wind capacity (which is currently the lowest direct cost renewable energy) installed on the SWIS and exacerbate the current situation where wind generators receive capacity credits in excess of their contribution to system capacity.

(b) to encourage competition among generators and retailers in the South West interconnected system, including by facilitating efficient entry of new competitors

As discussed in (a) above, changing the capacity credits methodology will facilitate the entry of new solar generation in the SWIS, increasing the diversity and hence reliability of electricity supply in the SWIS.

(c) to avoid discrimination in that market against particular energy options and technologies, including sustainable energy options and technologies such as those that make use of renewable resources or that reduce overall greenhouse gas emissions.

A methodology that is based on contribution to capacity at times of peak demand will avoid discrimination against solar facilities and will drive investment decisions toward technologies that reduce greenhouse gas emissions and provide capacity during periods of peak demand.

(d) to minimise the long-term cost of electricity supplied to customers from the South West interconnected system

As discussed above, the current capacity credit methodology for intermittent generators favours wind generators. While wind generators make an important contribution to electricity networks such as the SWIS, there are substantial "hidden" indirect costs associated with wind generation such as network reinforcement, additional spinning reserve and the costs of curtailing other power stations in off peak

periods that are not absorbed by the wind generators and are therefore ultimately borne by the electricity consumer.

Financial Impact

Revenue from capacity credits is an important component of the income required to make any generation project in Western Australia economically viable, but it is crucial for solar generation facilities where the capital cost per MW installed is currently considerably higher than that of conventional generation technologies.

MWE recognises that the Reserve Capacity Mechanism lies at the heart of the IMO's role in ensuring that there is sufficient capacity in the market to meet demand in accordance with the Market Rule Objectives referenced in this letter. MWE believes there is a need to ensure that any changes to the market rules achieve these objectives. Further impetus to change the market Rule in relation to intermittent generation is the significant and rapidly evolving policy developments in the renewable energy sector; with the Carbon Pollution Reduction Scheme, the Renewable Energy Target and the Clean Energy Initiative all currently driving business decisions and investment.

With the best solar resources in Australia, WA should be well placed to lead exploit this natural advantage to produce reliable, zero emission, competitively priced electricity for the SWIS, though under the current WEM capacity credit methodology, it is foreseeable that solar project developers will focus their attention to other states where project returns may be better.

4. Existing and potential impact of intermittent generation on the WEM, including the need for cost reflectivity under the existing framework and Market Rules.

MWE believes that until such time as fossil fuel based generators pay a price for the greenhouse gas emissions they emit, intermittent generators should not be forced to incur additional market costs, as to do so would send the wrong investment signals to the market. If and when fossil fuel generators are required to pay for the greenhouse gas emissions they emit, then it may be appropriate to revisit this issue.

To ensure Western Australia is not developing excess additional fossil fuel generation with the associated future carbon liability, the WEM must send appropriate investment signals to project developers to ensure renewable energy generation projects are developed in priority over fossil fuel based generation projects.

The Authority's discussion paper makes the following comment:

Another cause for concern with the high levels of intermittent generation is that the SWIS has low levels of overnight load. Rapid penetration of intermittent technologies could have a significant impact on the operational regimes of existing base load plant overnight and, as a result, the reliability of the system. With intermittent generation

spilling into the market there may be an increased risk of operational failures if base load plant needs to be decommitted overnight and then fails to start when demand on the system increases the following day.

MWE suggests that the above statement is not correct and that the Authority should refer to wind generation rather than intermittent generation when referring to network problems relating to overnight load. Solar generation, by its nature, only produces electricity during the day with output highest in the summer months when demand is at its highest and is therefore ideally suited to the WEM.

This is a further reason the WEM should develop policies to encourage large scale solar projects, for example a policy of 5% solar target by 2020.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Richard Harris', with a long horizontal flourish extending to the right.

Richard Harris
Managing Director