
**Wholesale Electricity Market
Rule Change Proposal Submission Form**

**RC_2010_25 Calculation of the Capacity value of Intermittent
Generation – Methodology 1 (IMO)**

**RC_2010_37 Calculation of the Capacity value of Intermittent
Generation – Methodology 2 (Griffin)**

Submitted by

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Submission

1. Please provide your views on the proposal, including any objections or suggested revisions.

Mid West Energy Pty Ltd (MWE) has participated in the IMO's Renewable Energy Generation Working Group (REGWG) since 2009 including providing modelling of its proposed solar project output to the REGWG and its consultant, MMA. MWE is developing a number of medium and smaller scale solar projects on the SWIS.

MWE welcomes the recognition by the Independent Market Operator of the important role that solar projects will play in the Western Australian electricity market and the discrimination that solar projects face as a result of the current Reserve Capacity Mechanism of the Market Rules. With some of the best solar resources in the world, Western Australia is well placed to develop a leading solar sector that will provide cost effective, zero emission electricity to the SWIS at times of peak network demand.

MWE is prepared to support the 'amended' RC_2011_25 as proposed by the IMO Board, subject to:

1. The peak 12 intervals per year being selected based on times of peak demand, rather than LSG; and
2. The 'U' factor being removed from the calculation.

LSG Concept

MWE does not support the LSG methodology as it is inconsistent with the treatment of other generation capacity under the market rules which are allocated capacity credits based on their output at 41 degrees. The capacity credit methodology should encourage the installation of generation that reliably produces electricity at times of peak network demand (such as solar).

The key issue with using the LSG concept in modified RC_2011_25 methodology is that by using a small number of peak intervals for each year over the past 5 years, a new intermittent generator will alter the LSG intervals used as its 'estimated' output over the past 5 years will be incorporated into the LSG calculations. This would introduce a level of variability into the reserve capacity allocation from one year to the next and is not in the interests of the reserve capacity market, nor is it in the interests of market participants.

Forecasting revenue from capacity credits available to an intermittent generator under the Rule Change Proposal RC_2010_25 involves three steps: Firstly, the output of the intermittent generator is modelled. Secondly, the forecast output is compared to the assessment criteria (top 60 intervals) to determine the relevant level of capacity credits, which can be done with a higher degree of confidence when assessed against times of peak demand, but with a lower level of confidence when assessed against forecast LSG. Thirdly, an adjustment factor is applied (discussed below).

The LSG methodology in Rule Change Proposal RC_2010_25 is impacted by the output of installed and new intermittent generators which greatly increases the complexity and uncertainty of forecasting capacity credit revenue as it requires various assumptions to "predict" the installed intermittent generator fleet output in future periods of peak demand. Uncertainty when modelling revenues is an impediment to developing renewable energy projects. Put simply, if financiers and power purchasers do not have comfort that the methodology assigning capacity credits to a project is stable and provides certainty from one period to another, they will discount or disregard this critical income stream, increasing the cost of intermittent generation.

Using peak demand intervals over each of the 5 years, rather than LSG intervals to calculate capacity credits for intermittent generators will create significantly less volatility.

'U' Factor

The U factor is not central to the revised Rule Change Proposal RC_2010_25 methodology and is an arbitrary amendment¹ to reduce the capacity credits allocated to intermittent generators. The U factor calculated in the Sapre report only used the actual output of existing wind farms, yet the revised Rule Change Proposal RC_2010_25 methodology will apply to all intermittent generators, including solar. Solar generators have a very high correlation between high temperatures and generator output and it is incomprehensible that the IMO would apply an arbitrary discount factor to the output of solar generation. In fact, solar should receive a positive U factor.

Incorporating the U factor in the revised Rule Change Proposal RC_2010_25 methodology is an unnecessary discount.

MWE strongly believes the U factor is discriminatory and should be removed from the RC_2010_25 methodology. If the IMO was to retain the U factor, then different U factors should be applied to different technology types, and solar generation should receive a positive U factor given its close correlation with peak demand..

In summary, MWE is prepared to support the 'amended' RC_2011_25 as proposed by the IMO Board, subject to:

1. The peak 12 intervals per year are selected based on times of peak demand, rather than LSG; and
2. The 'U' factor is removed from the calculation

as both these factors are discriminatory against intermittent generators.

2. Please provide an assessment whether the change will better facilitate the achievement of the Market Objectives.

- 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 potential volatility introduced by new intermittent generators under the LSG concept does not meet the objective of economic efficiency. If financiers and power purchasers do not have comfort that the methodology assigning capacity credits to a project is stable and provides certainty from one period to another, they will discount or disregard this critical income stream, increasing the cost of intermittent generation.

The U factor does not promote economically efficient outcomes as it arbitrarily discriminates against solar generation, despite the strong positive correlation between project output and times of peak demand.

¹ 'Ultimately in determining a value some judgement is required.' Page 18 of Sapre report.

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

Removing the LSG and U factor concepts from the RC_2010_25 methodology will lower volatility and facilitate the efficient entry of new competitors.

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;

The U factor is a clear discrimination against solar generation and should not be included in the RC_2010_25 methodology.

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

Removing the LSG and U factor concepts from the RC_2010_25 methodology will increase the capacity credit allocation to solar facilities, ultimately leading to lower costs for consumers.

e) to encourage the taking of measures to manage the amount of electricity used and when it is used.

Increasing the level of solar generation with negative SRMC (including RECs) during periods of peak network demand will send appropriate signals to users of electricity.

3. Please indicate if the proposed change will have any implications for your organisation (for example changes to your IT or business systems) and any costs involved in implementing these changes.

MWE has been developing a large scale solar project on the SWIS since mid-2009. MWE considers that the adoption of RC_2010_25, with the amendments requested above, will remove a large portion of the discrimination against solar generators found in the current market rules. This will be positive for MWE's business.

4. Please indicate the time required for your organisation to implement the change, should it be accepted as proposed.

Immaterial
