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Submission re:

- **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)**

The Sustainable Energy Association of Australia Inc. (SEA) in the peak renewable energy industry body in WA and represents a broad range of businesses in the sustainable energy and electricity market. SEA desires to see a healthy and robust energy market that supports both reliability and competition but also recognises the significance in the decarbonisation of WA energy generation. The rule changes for capacity credits and intermittent generation are significant and these changes will potentially have the biggest impact on the renewable energy sector in WA in the past 5 years.

These rule changes acknowledge that Intermittent Generation has a degree of uncertainty involved with their connection to the grid. However, it utilises only wind data to allocate develop a new capacity credit model. As yet, there is no commercial scale solar PV or solar thermal generation attached to the grid and the lack of data has caused the potential of solar contributions to be ignored. However, with new solar generation coming on line (Verve's Geraldton project) and other proposed projects by various proponents, we believe that the lack of addressing solar generation in this rule change may act as a barrier / disincentive to the development of new solar projects by independent power producers. This is an issue of concern to SEA and many of its members.

SEA Corporate members

SEA position

The modified capacity credit calculation is a significant improvement over the previously suggested IMO rule change but it is in itself not without issues. The single greatest problem in the new formula is to effectively treat all Intermittent Generation as wind power, even if it is not and this issue is covered in subsequent sections

However, SEA overall position is in support of the 'amended' RC_2011_25 rule change 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 Load Scheduled Generation (LSG); and
2. The 'U' factor being removed from the calculation or substantially modified to account for difference between the performance and profiles of Intermittent Generators based on the type of technology used.

The Load Factor issue

SEA 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. By utilising a different methodology in this instance, we question whether this is fair and equitable to non-wind intermittent generation. 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.

The Uncertainty or 'U' Factor

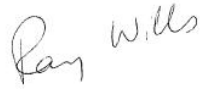
The new capacity credit calculation include an uncertainty measurement (the 'U' factor) which is not central to the revised Rule Change Proposal RC_2010_25 methodology and appears to be an arbitrary amendment to reduce the capacity credits allocated to intermittent generators. The U factor calculated in the Sapere 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 PV and similar technologies. We do not believe that this is arbitrary capacity amendment for uncertainty is appropriate. Treating different technologies as being essentially the same makes no sense in either technical performance or economic measures. Incorporating the U factor in the revised Rule Change Proposal RC_2010_25 methodology is an unnecessary discount.

Unlike the Intermittent Generation (wind only) example provided by Sapere in the Draft Rule Change Report (18th August 2011), solar generators have a very high correlation between high temperatures and generator output capacity. SEA's position is that it is perplexing that the IMO would apply an arbitrary discount factor to the output of solar generation based on the performance of wind generation.

SEA 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-based generation should receive a highly discounted U factor given its close correlation with peak demand.

SEA would be pleased to provide further information on the above or any other matter related to this issue if requested.

Yours sincerely



Prof Ray Wills
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