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PUBLIC SUBMISSION TO THE IMO

Draft 2016 Maximum Reserve Capacity Price for the 2018-19 Capacity Year

1.0 Introduction

Thank you for the opportunity to comment on the draft Maximum Reserve Capacity Price (MRCP) for the 2018/19 that was released in November 2015.

The Tesla Corporation (Tesla) operates four 9.9 MW diesel generators in the South West Interconnected System (SWIS) that are mainly used to provide energy to meet peak demand. The generators operate at low capacity factors due to the relatively high cost of the fuel, but have relatively low capital costs, which make them an efficient method for providing peak energy and reserve margin.

Given the low capacity factor of the units and the price caps that exist in the STEM/Balancing Market, the ongoing financial viability of the units are highly dependent on the Reserve Capacity Price (RCP); which is in turn a function of the level of the MRCP.

Since 2016-17, the MRCP has been declining in nominal terms and is almost at levels that are not viable for owners of existing peaking units in the Wholesale Electricity Market (WEM). Combine the lower MRCP with a downward sloping demand curve for capacity and the current levels of excess capacity (26%)[1], the resultant RCP is at levels that would not enable an owner of peaking units to recover operating and finance costs.

While owners of generation capacity typically repay the original capacity investment over 15 years, (15+ years), the generators need to be re-financed every 3 to 5 years. Persistently low RCP's, which are a function of the MRCP, make re-financing difficult and can result in debt providers putting a risk premium on interest rates.

Our experience is that costs of operating and financing (and re-financing) peaking units has increased, yet the MRCP keeps declining. We think that the current choice of the benchmark

1 2015-16 Capacity Year.

generator, the use of the June 2015 exchange rate (EUR /AUD), and the methodology for calculating the WACC underestimates the capital costs of a new entrant generator and contributes to a lower MRCP for 2018-19 than is warranted.

2.0 Benchmark Generator

The MRCP is based on the capital cost of a 160 MW Open Cycle Gas Turbine (OCGT) power station with inlet cooling[2] located in the SWIS. The choice of the size of the unit is important because larger units typically have lower per MW capital costs compared to smaller peaking units that have been installed in the SWIS in the last 5 years. The units that been installed since 2010 include the following:

- Tesla's four 9.9 MW diesel generating units (installed in 2011 and 2012);
- Merredin Energy's 82 MW OCGT installed in 2012, which consist of two gas generating units;
- Perth Energy's Kwinana Swift OCGT, which consists of four 30 MW units (120 MW nominal capacity in total) installed in 2010.

In fact, the last peaking units to be installed in the SWIS that were approximately 160 MW were the two 165 MW gas fired units installed at Neerabup in 2008.

Presumably the choice of 160 MW units for establishing the MRCP was based on anticipated load growth that was occurring at the time the Reserve Capacity Mechanism (RCM) was designed. For example, anticipated growth in Maximum Demand (based on a 1-in-10 year Probability of Exceedance (POE)) over the period 2005/06 to 2014/15 was estimated to be 156 MW per year.[3] Actual growth in Maximum Demand (1-in-10 year POE) over the period 2009-10 to 2014-15 was 44 MW per annum.[4]

In this environment would a new entrant investor really install such a large generating unit? The answer is no and this has not been the experience for the last 7 years.

On this basis, we argue that the benchmark generating unit should be reduced to reflect the size of units that have recently been installed in the SWIS (i.e. 30 to 40 MW). The installation of these units is more likely to reflect future growth of peak demand in the WEM.

3.0 OCGT capital costs

3.1 Scaling costs to Benchmark Generator Size (160 MW)

In deriving the total Engineering, Procurement and Construction (EPC) costs of the benchmark generator, Jacob's have based the plant equipment costs on the cost buying and installing a 178 MW Siemens SGT5-2000E gas turbine. The benchmark generator under the WEM Rules is required to be 160 MW, which requires Jacob's to scale the costs of the 178 MW unit down to obtain 160 MW costs.[5] Jacob's method assumes that it is possible to scale down the costs for plant equipment, civil works, mechanical and electrical works. While Tesla agree that some of these costs can be scaled down (e.g. size of turbine blades), many of these costs are fixed and not scalable. As a result, the capital costs for the benchmark

2 Evaporative air cooling technology.

3 Independent Market Operator, Statement of Opportunities South West Interconnected System, July 2015.

4 Independent Market Operator, Electricity Statement of Opportunities, June 2015.

5 Jacobs, Review of the Maximum Reserve Capacity Price 2018-19, 15 October 2015, p.3.

generator are underestimated. Cost elements that are not scalable should be kept at the 178 MW cost levels.

3.2 Exchange Rate Adjustments and FOREX Hedging

In deriving the total EPC costs, Jacob's have based the plant equipment costs on the cost of importing a 178 MW Siemens gas turbine from Europe.[6] The cost of $A73.5 M is based on an exchange rate (EUR/AUD) of 0.6886 (June 2015 average). However, the AUD has fallen against the EUR (average from July to November 2015 is 0.65), which implies that the $A cost of importing a Siemens gas turbine is likely to have increased to $A77.7 M.

This implies that the MRCP price for 2018-19 should be increased to $A 159,693 per MW per annum (all other parameters remaining the same).

Exchange rate movements pose a significant challenge to generation proponents in the importation and construction of gas turbines. In order to manage costs, investors will typically hedge risks by entering into forward contracts for either EUR or USD. Hedging currencies involves costs which should be recoverable if the MRCP is reflective of 'new entrant' costs. Jacobs' report[7] suggests that a 'Margin' has been included to cover various costs, including financing costs associated with equity raising and contingency costs. It is not apparent to Tesla that FOREX hedging costs are included and suggest that these costs should be included explicitly.

4.0 WACC components

4.1 Equity Beta

The equity beta measures the riskiness of a business or sector relative to the overall market. The equity beta value used in the WACC calculation is 0.83

The risk profile for electricity generators in the WEM (and the NEM) have increased appreciably in the past 5 years. Electricity growth is no longer consistent due to a range of factors, such as: variability in economic growth; increased energy efficiency; and the increased penetration of distributed generation.

Political debate and policy reversals have also impacted the risk profile for power generators, such as the debate over the carbon tax (and eventual closure of the scheme in 2014) and the future of the LRET scheme.

Variability in domestic gas prices due to increased links to international gas (and oil) prices that has resulted from the development of LNG export facilities increases risks, as does the potential impact of energy storage on the need for peaking generation units in the future.

The debate and options outlined by the Electricity Market Review (e.g. capacity auctions) have further increased the risk profile for generation in the WEM.

Given the volatility in the operating environment for electricity generation assets in Western Australia, Tesla considers that the current value for the equity beta is too low. An equity beta > 1 should be considered, which is consistent with WACC determinations by the Independent Pricing and Regulation Tribunal in NSW.

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66 Jacobs (2015, p.4).

7 Jacobs (2015, pp.28-30)

IPART found that equity betas ranged from 0.95 to 1.15 for electricity generators, with a mid-point of 1.05.[8]

If we use an equity beta of 1.05 instead of 0.83, the MRCP increases from $156,402/MW/annum to $165,417/MW/annum.

4.2 Interest Costs

The IMO's methodology of using a risk free bond rate with a duration of 10-years is different to that used by the Economic Regulation Authority (ERA).

The ERA commonly uses a 5-year rate which aligns with the regulatory period for electricity network and gas distribution assets. This recognises that regulated firms should not be exposed to movements in debt markets which they are unable to adjust for or manage.

The IMO's approach to use a 10-year rate and to recalculate this each year may be appropriate with conditions faced by new entrant generators; however, it is not appropriate with regards to compensating existing generation. Existing generation is 1) unlikely to have access to 10-year financing; and b) will have locked in financing in prior years at a different rate. The IMO's methodology essentially exposes existing generation to ongoing exposure to debt markets.

Yours Sincerely,

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8 IPART, Review of WACC Methodology, Research – Final Report, December 2013