Level 3 Exchange House
68 St Georges Terrace
Perth WA 6000
Phone: +61 (8) 6143 1850
Fax: +61 (8) 6316 4411

29 January 2016

Department of Finance / Public Utilities Office
electricitymarketreview@finance.wa.gov.au

# Reserve Capacity Mechanism Position Paper Response – Tesla Corporation

## 1.0 Introduction

Thank you for the opportunity to comment on the Reserve Capacity Mechanism Position Paper (*the RCM Position Paper*) that was released on 3 December 2015.

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). The reform proposals outlined in the RCM Position Paper are a fundamental change in approach from the current RCM; the latter formed the basis for decisions by Tesla in the period 2010-2012 to invest in merchant peaking plant in the Wholesale Electricity Market (WEM).

It is extremely doubtful that the proposed RCM reforms would enable merchant plant to enter the WEM in the future. The potential price volatility that could result from auctions with steep demand curves for capacity, combined with a vast array of market power mitigations to compensate for the fact that the current industry structure is not conducive to competitive outcomes, and a government predilection for changing market rules to suit its own commercial position, highlights to us that private sector investment in power generation is not welcome in Western Australia.

It is clear from the Paper, and it has been publicly stated by EMR2 Project Managers that the intention of the RCM redesign, both transition and auction, is to force surplus generation from the market. Given that previous investment in existing generation plant was made under the terms of an "administered market", this latest initiative, taken without regard to the financial viability of existing investments is a clear example of sovereign risk. If sovereign risk is to be avoided, there must be a scheme of compensation and/or grandfathering for existing generation plant.

The RCM proposals significantly disadvantage merchant plant in the WEM and reflect upon the composition of the Electricity Market Review Steering Committee, who are all government

representatives, or representatives of government business enterprises that have significantly contributed to problems with the electricity market in Western Australia. It appears that private sector investors in the WEM must wear the pain associated with poor decision-making by Governments, market operators and government energy utilities.

Tesla also draws to the attention of the Energy Market Review the following commercial framework that guided the Tesla investment decision-making:

- Generation assets are long lived (25+ years) with slow capital paybacks (+15 years). It is therefore not unreasonable to expect that any market review by government would respect this fundamental and specifically address this issue in the *RCM Position Paper.*
- All rules and policies of the WEM were fully understood by Tesla at the time of its investment. Tesla has always followed the rules and expectations of the WEM and its administrators. Tesla's availability to the system exceeds 96%.
- Tesla sought and received encouragement from the Government, IMO and WPC concerning the type and location of its generation plant, seeking to provide maximum benefit to the SWIS from its investment in peaking plant.
- The continued uncertainty surrounding the policy settings of the WEM have caused debt providers to become "nervous", making it difficult for Tesla to re-finance its portfolio. Capital market belief in Government decision-making in the electricity industry is at a very low level.

# 2. Causes of Excess Capacity in the WEM

## 2.1 Poor Decision-Making by Market Administrators

Electricity supply shortages in the early 2000's provided impetus for the State Government to include a capacity market in the original electricity market design. The intent was to provide a financial incentive for peaking plant to enter the market to achieve the mandated reliability standard. However, the design and application of the RCM has contributed to creating excess capacity in the WEM due to the following causes:

- Incorrect demand forecasts resulted in the Independent Market Operator (IMO) setting Reserve Capacity Requirements (RCR) in the period 2005/06 to 2013/14 that were consistently higher than warranted;
- Allowing Demand Side Management (DSM) to participate in the RCM, and being rewarded on the same basis as long lived generation assets, despite not providing the same level of availability as generation; and
- A capacity refunds regime that did not sufficiently penalise old, unreliable plant for being unavailable for considerable periods, therefore not providing an incentive for this type of plant to retire.

Since 2012, Tesla has been working with the IMO to introduce dynamic capacity refunds and harmonise DSM facilities in the WEM in order to ensure that excess capacity is eliminated and doesn't result in RCPs that are not sustainable to allow owners of long lived generation assets to provide a return to equity holders and repay debt.

## 2.2 Outcomes of Poor Government Policy

While the RCM has contributed to creating excess of capacity in the WEM, the policy settings implemented by the Commonwealth Government and successive State Governments in

Western Australia, and decisions by the state owned energy utilities (i.e. Verve Energy and Synergy Retail), have been the major contributors to creating excess capacity in the WEM.

The significant factors that have resulted in a persistent surplus of capacity in the WEM include the following:

- Unanticipated uptake of solar PV by residential and commercial customers that significantly reduced peak demand for electricity in the WEM. This was driven by both Commonwealth (Small Scale Renewable Energy Scheme or SRES) and State policies (i.e. solar feed-in tariffs), and the State Government's failure to rebalance electricity tariffs to reflect the fixed costs of network services.
- Establishing a Vesting Displacement Process that resulted in new entrant plant competing with Verve Energy's existing portfolio. When Bluewaters II (200 MW) was successful in winning the displacement tender for providing generation capacity in 2009/10, Verve Energy did not retire plant, even though there was a significant surplus of baseload generation in the WEM that would result in lower wholesale energy prices and reduce returns to its plant portfolio.
- The Commonwealth Government's Large-scale Renewable Energy Target (LRET) drove investment in renewable energy projects in Western Australia. For example, the Collgar Windfarm (200 MW) commenced production in 2011-12 and significantly reduced the output of Synergy's coal-fired generators overnight.

Much of the RCM Position Paper is focused on providing price signals to ensure that excess capacity is minimised in the WEM in the future. Yet it clear that the current RCP formula is not responsible for the persistent surplus of capacity in the WEM. The RCP is simply being used as a smokescreen for poor commercial decision-making and policy settings from Government and its agencies.

We contend that the RCP is only responsible for a small amount of generation to enter the WEM. The following table shows accredited capacity that has entered the market since 2006 and the key driver for that capacity entering the market. The analysis summarised in Table 2 suggests that the RCP Formula is only responsible for 561 MW of new generation capacity being accredited since 2005/06 out of total increase in capacity of 3,162 MW. This only represents 18% of capacity credit additions, and is essentially the proportion of installed generation that is required for reserve generation purposes.

It should be pointed out that of the 561 MW of new peaking generation capacity that has come into the market since 2005/06, 330 MW of this (NewGen Neerabup) was contracted by Synergy under a long term PPA (which implies that the generator is not exposed to variable capacity prices), with the balance (220 MW) fully exposed to changes in the RCP.

DSM has been incentivised by both high and low RCP's to enter the market, since the upfront capital costs of these facilities are significantly below $100,000/MW. Since 2011-12, accredited DSM capacity increased by 300 MW and has not been responsive to low RCP's.

**Table 1: Key Drivers of Additional Capacity Credits since 2005/06**

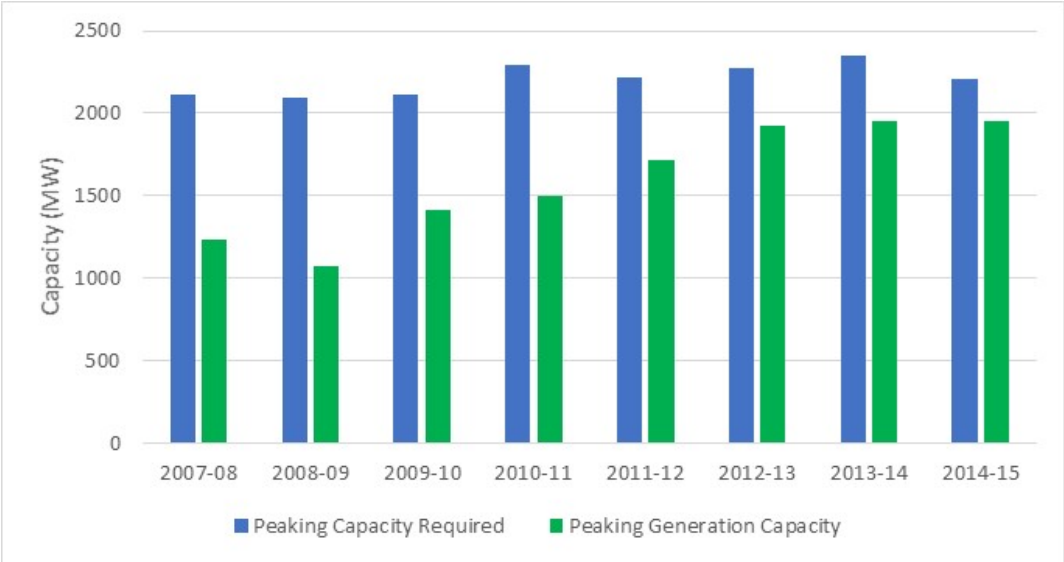
| Key Drivers | Capacity Credits (MW) | % of Total Capacity Credits |
|---|---|---|
| DSM | 561 | 18% |
| RCP Formula | 561 | 18% |
| Energy | 1,276 | 40% |
| LRET | 62 | 2% |
| Fuel Security | 220 | 7% |
| Ancilliary Services | 196 | 6% |
| Other | 287 | 9% |
| **Total** | **3,162** | **100%** |

Table 2 (on page 6) shows in more detail the generation units and DSM capacity that has been added to the WEM since 2005/06 and what the key drivers for that investment was.

The last peaking units to enter the WEM were the three Tesla Units (9.9 MW each) and the Merredin Energy Diesel Generator (70 MW initially, then 82 MW) in 2012-13. The business case for these units was based on RCP's of $186,000 and $178,500 per MW that prevailed in the 2012-13 and 2013-14 capacity years. No other peaking units have been incentivised to enter the market at prices of ~$120,000 per MW that have prevailed since 2014-15. Hence, the current RCP formula has done its job and stopped further investment in peaking plant.

While there is an overall surplus of capacity credits in the WEM, due to an excess of baseload generation and DSM capacity, there is not a surplus of peaking generation capacity in the WEM. In all years there has been a deficit of peaking plant to meet peak load plus reserve margin (margin).[1]

**Figure 1: Peaking load and margin versus peaking load generation capacity**




Source: IMO 2015

The deficit between peaking load and margin (referred to as Peaking Capacity Required in Figure 1) and peaking generation capacity has been made up by a combination of DSM facilities and the inefficient application and dispatch of baseload generation. Baseload

[1] Dispatachable peaking plant (e.g. gas turbines, diesel generators) are typically used to provide reserve margin and ancilliary services (e.g. spinning reserve etc.) given that they have relatively low capital costs, despite having relatively high energy costs. This plant will typically have low capacity factors (<5%).

generation is not the most efficient generation to meet peak demand requirements or provide ancilliary services (e.g. LFAS) for the following reasons:

- In many cases, coal units are not able to provide ancillary services because they have relatively low response times (e.g. start up and ramp rates) and need to operate for minimum trading intervals when operating; the latter increases costs if they are not required and cannot be turned off.
- Baseload units have significantly higher fixed costs of operation – capital and labour, which makes them expensive units to operate at low capacity factors.
- A surplus of baseload generation will depress wholesale energy prices in non-baseload trading intervals, reducing returns to investors in both mid-merit and peaking plant.

An efficient portfolio of plant would have much less baseload generation operating in the market, compared to the current portfolio mix in the WEM. Conversely, an efficient plant portfolio for the WEM would have close to the current amount of peaking plant already installed.

While we believe that much of the additional capacity that has entered the WEM since market start has been driven by factors other than the RCP Formula, it has permitted old, inefficient generation such as Muja AB to remain in the market simply to collect Capacity Payments. Our view is that Government agencies such as Synergy should not be permitted to game the market with old, unreliable plant. The introduction of dynamic capacity refunds will be important to ensure that this behaviour does not continue.

Table 2: Drivers of Capacity Additions in the WEM since 2005/06

| Plant | Description | Key Drivers | MW |
|---|---|---|---|
| Alinta Pinjarra 2 Cogen Unit | Committed prior to market start | Low gas price and to meet Alcoa's steam requirements | 134.64 |
| Alinta Wagerup Units | Committed prior to market start | Initially peaking units, but to be converted to Cogen units later to meet future Alcoa expansion plans. | 379.23 |
| NewGen Kwinana | Baseload Gas Plant | Meet future energy requirements | 327.80 |
| Bluewaters I | Baseload Coal | Underwritten by Boddington Goldmine | 217.00 |
| Bluewaters II | Baseload Coal | Vesting Displacement Tender (Synergy) | 217.00 |
| NewGen Neerabup | Gas Peaking Units | Driven by RCP Formula | 330.60 |
| Muja AB | Mid Merit Coal | Driven by the State Government's concern about the high dependence of the SWIS on gas generation in wake of Varanus Island explosion in 2008 | 220.00 |
| Kwinana HEGTs | Mid Merit Gas | Rapid start and load following plant was required to provide ancilliary services to the WEM | 195.50 |
| Demand Side Management (DSM) | | Driven by RCP Formula - but should have never been part of the RCM. | 560.50 |
| LRET | Renewables | Includes windfarms and biomass facilities | 62.38 |
| Tesla Units | Diesel Peaking Units | Driven by RCP Formula | 39.60 |
| Merredin Energy | Diesel Gas Turbine | Driven by RCP Formula | 82.00 |
| Kwinana Swift | Gas Turbine | Driven by RCP Formula | 109.00 |
| Other | | | 286.84 |
| | | | |
| **Total** | | | **3,162.09** |

Notes: Includes all capacity credits additions over the period 2006/07 to 2016/17

## 2.3 Is the Private Sector to Blame for Excess Generation Capacity in the WEM

The WA Government has blamed the RCM and private sector generators who responded to the market signals provided by the RCM – both forecast capacity requirements and prices, for surplus generation capacity in the SWIS. Table 3 demonstrates the fallacy of the WA Government contention.

**Table 3: Sources of Reserve Capacity (MW)**

| Year / Participant | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | Total |
|---|---|---|---|---|---|---|---|
| Private Sector (without bilateral contracts) | | | | | | | |
| Tesla | | | 10 | 30 | | | |
| Perth Energy | | 105 | | | | | |
| Merredin Energy | | | | 80 | | | |
| Total | 0 | 105 | 10 | 110 | 0 | 0 | 225 |
| Public Sector (inc. generation underwritten by bilateral contracts with Synergy) | | | | | | | |
| Bluewaters 2 | 216 | | | | | | |
| NewGen Neerabup | 330 | | | | | | |
| Kwinana A (retire) | | | -216 | | | | |
| High Efficiency Gas Turbines | | | 184 | | | | |
| Collgar Windfarm | | | 90 | | | | |
| Muja AB (Vinalco) | | | | 220 | | | |
| Solar PV | | 100 | 100 | 50 | 50 | 50 | |
| Total | 546 | 100 | 158 | 270 | 50 | 50 | 1174 |
| Public Sector Share | 100% | 65.6% | 94.0% | 71.0% | 100% | 100% | 83.9% |
| Demand Side Mngt | -29 | 55 | 107 | 194 | 45 | 24 | 396 |

In all capacity years 2009/10 to 2014/15, the public sector (Synergy and/or Verve Energy and Government policy, such as generous solar feed-in prices) has been responsible for the majority of new capacity additions. In total over this period, the Government and its energy utilities has been responsible for 84% of new generation capacity additions. The private sector has only added generation in the three years 2010/11 to 2012/13 (225 MW in aggregate).

### 2.4 RCM reform proposals focus too much on one instrument - price

The need to provide incentives for participants not to overinvest in generation capacity, and/or exit the market, are outlined in both the transitional and auction arrangements in the RCM Position Paper:

- Transitional arrangements – maintain an administered price mechanism but with a steeper pricing curve (slope of -5 compared to the current slope of -1) and differential treatment of DSM (i.e. lower availability or capacity payments, but increased dispatch payments);
- Auction arrangements - capacity prices are set by an auction (triggered by an excess capacity level of 5 to 6%), combined with a steep demand curve for capacity (1.6 times the MRCP at 0% excess capacity; zero price at 15 to 20% excess capacity).

The RCM Position Paper indicates that it is only via the threat of low capacity prices in both cases, which will make some plant uneconomic, can it be guaranteed that demand and supply remain in balance in most years.

Plant investment and retirement decisions are not simply a function of the RCP. They are a function of future wholesale energy prices, the need to provide ancilliary services, and the need to meet the LRET. Capacity prices are only one component of the decision to invest or retire plant.

- For peaking units, with existing energy caps in place, the decision on investing or retiring is critically determined by the RCP.
- For mid-merit and baseload plants, the future level of the RCP is much less important. Future energy prices are the major driver.
- For older, inefficient plant (all types), the decision to retire the plant will depend mainly on penalties for not being available when required – especially in summer months when penalties are highest (i.e. capacity refunds).

Relying heavily on the RCP to encourage efficient plant investment and retirement decisions implies that the RCP must be volatile to ensure that the demand and supply of capacity credits is balanced. It is our view that both the Transitional and Auction Arrangements for the RCM place too much emphasis on capacity prices to encourage efficient investment, when in fact they are not a major factor in most plant increment/decrement decisions.

The Transitional and Auction Arrangements will however unfairly financially penalise physical generation plant that has been established in good faith under the existing rules, and in some cases such as Tesla's, may cause the financial collapse of the entity.

The EMR has stated that all plant must participate in the capacity auction, even if bilaterally contracted and that the market price for all capacity will be determined by the highest cost plant cleared in the auction – which will typically be determined by the new build cost of an open cycle gas turbine now, and the cost of battery storage facilities in the future.

Plant investment decisions are not made based on the auction price in one year, but the forecast auction price for the next 15 years. How is an investor in new plant able to forecast, with a reasonable degree of accuracy, the forecast auction price with a steep capacity demand curve? The proposed approach will become a significant barrier and deter investment in generation capacity in the future.

## 3.0 Implications for Tesla

Since the Tesla Units first entered the market in the 2011/12 capacity year, Tesla expected to earn $38.39 M in capacity credit revenue up until the end of the 2016-17 capacity year. However, due to many of the poor decisions made by both the Commonwealth and State Governments, and State Energy Utilities, Tesla expects to only earn $30.17 M. This is a reduction of $8.21 M in expected revenue.[2]

Tesla, like other owners of merchant plant in the WEM, typically repay the original capacity investment over 15 years; however, these generators need to be re-financed every 3 to 5 years. Persistently low RCP's, which have been a feature of the WEM since Tesla entered the market in 2011/12, make re-financing difficult, and if we are able to obtain finance in the future, will likely be provided at higher interest rates reflecting the increased insolvency risk.

**The current proposals outlined in the RCM Position Paper will most likely result in Tesla declaring insolvency and exiting the WEM. If the intent of these proposals is to reduce the amount of excess capacity, then these proposals will certainly drive merchant plant out the market, or at a minimum, result in these assets changing hands.** This will reduce the number of private sector participants operating in the WEM and increase industry concentration. This will reduce competition and ultimately result in consumers paying a higher price for generation capacity in the future. We do not see that these reforms are consistent with Australia's National Reform Agenda[3], nor are they consistent with the stated objectives of the EMR, which includes *"having future generation built by the private sector without Government investment or underwriting"*, and attracting *"private-sector participants that are of a scale and capitalisation sufficient to facilitate long-term stability and investment."*

Tesla has invested in peaking generation without requiring the government (via Synergy) entering into long term power purchase agreements (PPAs). The Tesla Corporation is 72% owned by Koon Holdings Pty Ltd (listed on both the ASX and SGX) and is one of Singapore's leading infrastructure and civil engineering providers. Koon Holdings has both the *"scale and capitalisation"* to invest further in Western Australia if the electricity market requires further investment in conventional and renewable generation, and/or new technologies, such as battery storage.

## 4.0 Implications of the Transitional Arrangements

The RCM Position Paper clearly states that if an auction was held today with the high levels of excess capacity, it is likely that capacity prices will fall to zero.[4] One of the purposes of the transitional arrangements is to ensure that participants are not financially disrupted to the extent that a zero price would disrupt participants.

The RCM Position Paper states that it *"is not desirable for consumers to continue paying for capacity that is over-valued"*. Every document written by the PUO to date has stated that consumer bear the costs of excess capacity. This is clearly incorrect.

In the contestable electricity market in WA (>50 MWh/annum), all retailers "pass thru" IMO capacity prices to customers. The reason for this is that a potential new entrant in the WEM do not need to build generation capacity or enter into a long term power purchase agreement

---

2 Have derived these estimates assuming that Solar PV penetration is lower reflecting the absence of subsidies to PV buyers, Bluewaters I & II did not enter the WEM, Muja AB was not reopened, and DSM was not permitted to participate in the RCM.

3 Australia's National Reform Agenda is the successor to the National Competition Policy that was in place from 1995 to 2005 and delivered significant benefits to the Australian economy.

4 Department of Finance / Public Utilities Office, *Position Paper on Reforms to the Reserve Capacity Mechanism*, 3 December 2015, p.12.

(PPA). They can simply buy capacity from the IMO at the prevailing rate. If there is excess capacity, the RCP falls in such a way that consumers are indifferent between 0 or 20% excess capacity. It is generators and DSM providers that are financially impacted by excess capacity – not contestable customers.

It is hard to understand why the PUO makes this mistake in every document that has been produced on this subject to date, apart from erroneously using this as an argument for reform.

Rather than using the transitional period to enable generation owners to obtain a reasonable return on funds invested under the existing rules, the PUO wants to steepen the demand curve for capacity to drive generation plant out of the market so that an auction can be brought forward from 2024-25 to 2020-21.

Transitional arrangements, in Tesla's view, should be designed to keep owners of long lived generation assets whole, not to drive them out of the market. Compensation arrangements were established by the Commonwealth Government when the carbon tax was introduced in 2012 to ensure that coal-fired generators remained financially sound as a result of the introduction of the carbon tax. These arrangements reflected the fact that the introduction of a carbon tax would fundamentally change the economics of coal fired generation.

This is not the approach that has been adopted by the PUO. Even though changing the slope of the capacity demand curve from -1 to -5 will substantially alter the economics of peaking generation in the WEM, no compensation will be provided to owners of peaking generation.

The likely result of the transitional arrangements is that the RCP will decrease to $85,000/MW.[5] At this level, merchant peaking plant in the WEM will not be able to survive. Even portfolio generators will most likely have to write down the value of their peaking generation (i.e. Alinta and Synergy).

An alternative approach to overcome the insolvency scenario for merchant generators that would arise from the transitional arrangements, is to implement the Lantau method as agreed by industry in 2012 (slope of -3.75), but with a price cap of 1.2 times the MRCP; the higher price cap reflects the fact that a shortage of capacity increases the probability of customer supply interruptions. In addition, a price floor for long lived generation investment would be established to ensure that merchant plant can remain solvent if government policy or commercial decisions by market participants result in too much additional capacity.

Prior to introducing a steeper capacity demand curve, some excess capacity should be removed from the market to ensure that the price floor is not reached in the first few years of the new capacity market. In our view, the excess capacity in the WEM resulted from the following:

- WEM Rules permitting DSM resources to participate in the RCM and receive an equivalent price to long-lived generation assets, despite the fact that most DSM resources cannot provide an equivalent service – availability, duration and reliability.
- Decisions by State owned energy entities (i.e. Verve Energy and Synergy) to underwrite generation capacity that adversely affected the energy market balance and we believe not be justified on strictly commercial grounds. This includes Synergy Retail's decision to award a long term PPA to Bluewaters II (200 MW) even when Verve Energy already had sufficient generation to meet Synergy Retail's future requirements. Verve Energy's decision to refurbish Muja A/B (220 MW) even when it

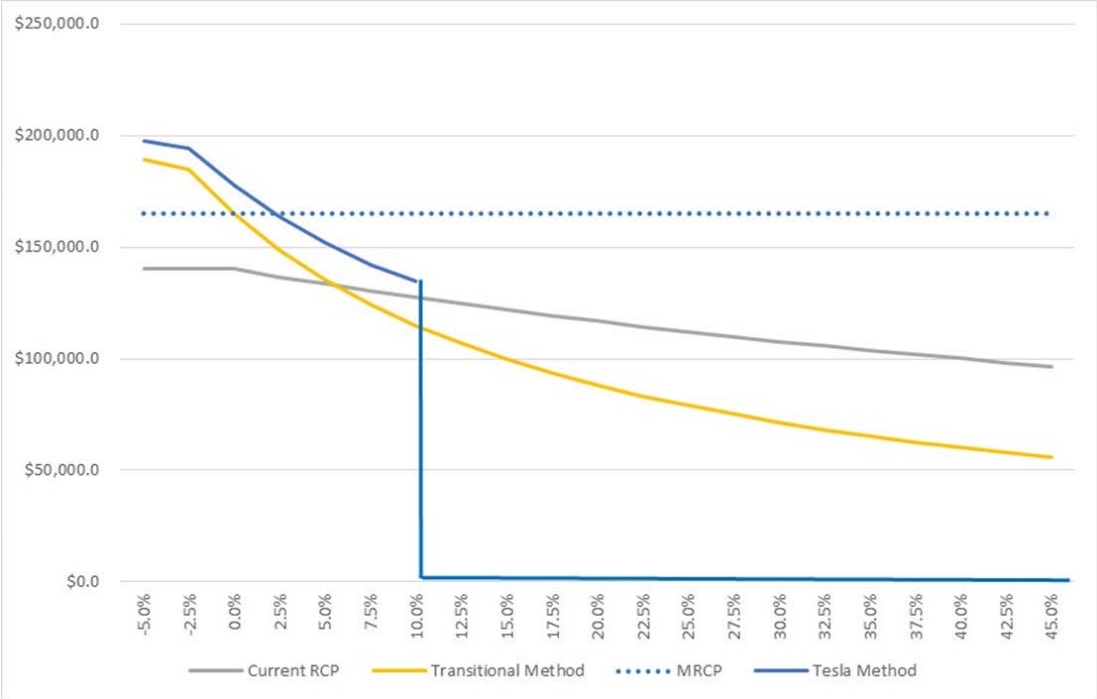
[5] Based on the differential treatment of DSM, the PUO assumes that 220 MW of DSM is removed, which results in a 17.5% level of excess capacity, assuming no plant retirements.

was obvious that forecast load growth could never justify this plant coming back into the market.

All DSM that cannot provide an equivalent service to generation (i.e. availability, duration, reliability etc.) should be removed from the RCM (i.e. should not impact the amount of certified capacity required), and one or more Synergy units (e.g. Muja A/B 220 MW or Muja C 385 MW) should be retired.

Figure Two (below) highlights how a price floor in the capacity market would work. For our purpose, we have assumed that the MRCP is set at $164,800 per MW, as $150,000 per MW as outlined in the RCM Position Paper does not reflect the efficient cost of new entry (see Tesla's submission to the IMO on the 2018-19 MRCP). We have adopted the 2012 Lantau demand curve for capacity and compared that to the current RCP and the proposed Transitional Arrangements.

**Figure Two: RCP Transitional Arrangements**




The key features of the Tesla Method with Price Floor include the following

- Minimum price – the minimum price has been set at the level necessary for Tesla (and other generators) to cover fixed operational costs, meet current debt service obligations and provide a minimum return to equity holders. We have estimated that the minimum price required is $135,000/MW based on current interest rates (5% per annum) and leverage of 50%. This minimum price provides a strong disincentive for further investment in peaking plant (19% lower than the efficient new entrant cost); however it may not prevent investment in other capacity (e.g. baseload or renewables), which may require the introduction of a quantitative cap on excess capacity (see below).
- Maximum excess capacity – Excess capacity is set at a maximum of 10% (or 459 MW) above the Reserve Capacity Requirement (RCR). Beyond this level, no capacity credits will be issued to new plant that enters the market. In effect, Reserve Capacity Prices for providers of additional (new) capacity is set to zero above this level.

If DSM is removed that cannot provide an equivalent service to generation (~330 MW) and 385 MW of Synergy plant is retired (Muja C), then the excess capacity will reduce to 6.62%, with a resultant price of $145,331 per MW under the Tesla Method.

A capacity price floor has the advantage of enabling the refinancing of existing investment in merchant plant without the State Government having to effectively underwrite these investments through long term PPA's. However, it does necessitate maintaining a quantity restriction on excess capacity to ensure that new DSM (if they meet the same availability criteria as generation) or generation is not incentivised by the minimum capacity price to enter the market.

The major disadvantage with the capacity price floor approach is that it is applicable to all participants and not tailored to the individual circumstances of any one market participant. A floor price that keeps Alinta Energy or Perth Energy in business may not be appropriate for Tesla. Different project costs and capital structures for participants' funding of power stations imply different floor prices across generation projects or portfolios.

If this is a significant issue, it is preferable that the Government (via Synergy) put in place a PPA with Tesla (and other merchant generators) so that capacity prices can be negotiated that reflect the circumstances of each participant.

Tesla does not believe that there should be a demand curve for excess capacity beyond 10% in the transitional arrangements. The RCR already includes a reserve margin component of about 5%. Allowing another 10% of excess capacity (in excess of 459 MW) is reasonable to enable new plant to enter the system that cannot always be sized for the next increment in the RCR. But even having a demand curve for excess capacity beyond 10% seems ludicrous when in fact the value of this capacity is close to zero – as outlined by the PUO on page 8 of the RCM Position Paper.

We do not need a market for 'excessive' excess capacity. Having a capacity demand curve beyond 10% will most likely result in there always being excess supply and low RCP's.

It appears the PUO is reluctant to consider a quantitative cap (or zero capacity price beyond 10%) because the government does not want to direct Synergy to close down plant that is not required. However, this is not necessary. Synergy already has commercial drivers for closing plant.

## 5.0 Synergy's Business Drivers to Close Plant

As outlined earlier, contestable customers don't bear the costs of excess capacity under the existing RCM – generators and hedged retailers do. In effect, retailers provide capacity to contestable customers at the IMO capacity price ('mark to market' approach) and provide energy to these customers at a premium above balancing market prices. Given the excess of baseload generation in the WEM, balancing prices are at historically low levels, as is the current capacity price ($120,000 MW) because of excess Reserve Capacity.

As a result, contestable customers are receiving capacity and energy at prices that are well below the costs incurred by a vertically integrated or hedged retailer (e.g. Alinta Energy, Perth Energy and Synergy) in providing energy and capacity.

For example, Synergy's likely capacity costs are in the order of $210,000 per MW, reflecting the fact that it has a portfolio of baseload and mid-merit plant (including PPA's) that have more expensive fixed costs than peaking plant ($160,000 per MW). Currently, Synergy can only recover $120,000 per MW from contestable customers (estimated IRCR for Synergy's contestable customers is around 1600 MW), which implies that Synergy is making a loss of $144 M in supplying contestable customers at prevailing capacity prices.

If 330 MW of DSM was removed from the RCM and Synergy retired Muja C, capacity prices under the current RCP formula would increase to $131,382 MW, which if passed through to contestable customers would reduce Synergy's capacity portfolio losses to $125 M; an improvement for Synergy of $18 M per annum in the recovery of its portfolio capacity costs.

In addition, retiring energy producing plant (i.e. baseload coal or gas) would have the added benefit of increasing balancing prices, which would also benefit Synergy. Marsden Jacob Associates (economic consultants) have estimated that net balancing prices (balancing prices minus SRMC) would increase by at least $7 per MWh (delivered to Muja) overall if Muja C retired; which implies that Synergy would obtain an extra $32 M in energy revenue per annum (i.e. $7.40 per MWh multiplied by 4329 GWh – the latter the estimated annual sent out sales for Synergy's current contestable customers).

**Table 4: Benefits to Synergy of Plant Retirement and DSM reduction ($/annum, nominal)**

| **Contestable Customers** | 2015-16 |
|---|---|
| - IRCR (MW) | 1,600 |
| - Energy Sent Out (GWh) | 4,329 |
| Synergy Average Portfolio Capacity Cost ($/MW) | $ 210,000 |
| Current RCP ($/MW) | $ 120,000 |
| Portfolio Capacity Cost Losses $M | $ 144 |
| **Plant Retirement Impacts** | |
| Revised RCP ($/MW) | $ 131,382 |
| Increase in Net Balancing Prices ($/MWh) | $ 7.40 |
| **Synergy Revenue Benefits:** | |
| - reduction in capacity costs to meet loads ($M) | $ 13.00 |
| - reduction in capacity costs for retired plant ($ M) | $ 22.00 |
| - loss of capacity revenue from retired plant ($ M) | $ (46.20) |
| - Increase in capacity revenue ($M) | $ 18.21 |
| - Increase in energy revenue ($M) | $ 32.05 |
| - Overall Benefit to Synergy | $ 50.26 |

*Notes: Assumes retirement of Muja C (385 MW) and reduction in DSM of 330 MW.*

In summary, Synergy would gain extra revenue from contestable customers of $50.3 M per annum in energy and capacity revenue if DSM is reduced (330 MW) and Muja C is retired. In addition, Synergy would also benefit from reduction in Fixed O&M costs for retired plant and a reduction in shared reserve capacity costs. These benefits offset the loss of capacity revenue for the retired plant. In addition, the extra revenue gained every year will more than offset any costs incurred by Synergy in retiring plant (e.g. remediation costs) or renegotiating fuel contracts (i.e. reduced annual coal volumes).

The sensible commercial response is for Synergy to retire plant immediately under the current RCP formula. Competition in the current contestable market already provides an incentive for Synergy to retire energy producing plant and does not require the introduction of steep demand curves for capacity or auctions.

Introducing Full Retail Contestability (FRC) would also provide an added incentive for Synergy to retire excess baseload plant, since Synergy can obtain the capacity and energy

revenue benefits across both franchise (another 6800 GWh/annum of sales) and current contestable customers.

The administrative oversight that will be required to introduce capacity auctions, including market power mitigations to deal with a highly concentrated industry structure, will be a significant expense for such a small market like the WEM (peak load of 3800 MW). Borrowing capacity mechanisms from large US markets, such as the PJM (installed generation capacity of 183,000 MW) and NYISO (39,000 MW of installed capacity) is not appropriate for WA and is not necessary. All that is necessary is for Synergy to respond to the current commercial drivers to improve its profitability under the current contestability threshold (50 MWh/annum), and further increased incentives that would result from the introduction of FRC.

## 6.0 Summary and Conclusion

It is Tesla's view, the following reform proposals should be considered:

- Introduce the Lantau RCP formula (2012 proposal) but include a price floor (minimum price necessary to enable a merchant peaking plant to provide a return to shareholders and meet debt commitments). Introduce a quantitative cap on excess capacity (10%), with a zero capacity price applied to new generation beyond this level. This proposal will require removal of 330 MW of DSM from the RCM and the retirement of some Synergy plant to achieve near market balance (i.e. 6% excess capacity).

The Government should not have to direct Synergy to retire plant. As outlined above (section 5.0), Synergy has commercial drivers to retire baseload plant to improve its profitability in supplying current contestable customers. The incentive for Synergy to retire plant will increase if FRC is introduced. Presumably the current policy uncertainty is delaying decisions by Synergy to retire plant in its own commercial interest.

In essence, both the transitional and auction arrangements proposed in the RCM Position Paper are not necessary to eliminate excess capacity in the WEM. By adopting our proposal and allowing Synergy to retire baseload plant, the Government avoids the overhead costs of substantially changing the RCM and increasing market surveillance to ensure that auctions are competitive.