

23 March 2018

Mr Noel Ryan
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Dear Noel,

Response to Consultation Paper: Improving access to the Western Power network

1. Introduction

Merredin Energy Pty Ltd (MEPL) owns and operates the 82 MW open cycle gas turbine power station in Merredin, Western Australia. The plant (known as “MEPS”) is connected to the South West Interconnected System (SWIS) via a single circuit 132kV overhead transmission line to Western Power’s Merredin Terminal north of the power station.

MEPS was commissioned in 2012 and has an operating life of 25 years. The plant operates on ultra-low sulphur distillate and operates for around 100 hours per year. The main purpose of the power station is to provide reserve capacity to ensure that supply reliability is maintained if dispatchable demand¹ is unusually high (i.e. 1 in 10-year peak demand) and/or there are unforeseen plant outages. The plant also helps to provide grid stability, particularly in the Eastern Goldfields region.

The MEPS gas turbines are a proven GE Frame 6 reliable design and can be started rapidly (5 minutes from notification) and can achieve maximum generation within 12 minutes from cold start. The ability to respond quickly is important given the increasing amount of intermittent plant connecting to the SWIS and the need for dispatchable generation² to rapidly respond to changes in intermittent generation levels (and hence dispatchable demand).

¹ Dispatchable demand refers to wholesale electricity demand after deducting electricity supplies from embedded generation (e.g. rooftop PV) and electricity supplies from large-scale intermittent generators. Basically, it is demand that will be met by dispatchable generation (see footnote below).

² Dispatchable generation refers to sources of electricity that can be dispatched at the request of the market operator. Dispatchable generators can be turned on or off or can adjust their power output in response to instructions from the market operator.

The financial performance of the plant is highly dependent on the revenue earned by providing Capacity Credits under the Reserve Capacity Mechanism (RCM). Proposed reforms that change network access arrangements, capacity certification processes and Reserve Capacity Prices (RCP) have the potential to significantly impact the profitability of the Merredin Plant.

Given the above, we have a significant interest in proposed reforms and provide this submission to ensure that the policy makers consider the impact of proposed reforms on existing Market Participants and put in place new arrangements that ensure sufficient dispatchable generation capacity remains in the market to ensure a reliable and secure electricity system in the South-West of Western Australia.

2. Loss of Existing Generator Rights in the SWIS

As outlined in the consultation paper³, it is recommended that a constrained access framework be adopted for obtaining access to Western Power's electricity network. Under this framework, generating units do not have "firm" rights to network access and can be constrained-off by market dispatch processes, to maintain power system security, irrespective of the state of the network.

Currently existing generators in the SWIS do have firm access rights and will typically only be "constrained off" or "constrained on" due to the failure of specific network assets. In effect, most generators obtained "unconstrained" network access under normal operating conditions.

Investment cases for new plant built in the SWIS were based on firm and unconstrained access to the SWIS. That is, in most instances, plant could be dispatched into the STEM/Balancing Market at their maximum capacity, with the amount of capacity credits awarded under the RCM at or close to the plant's nameplate capacity. Investors and debtors needed to understand both the operational (e.g. plant performance) and market risks (e.g. energy and capacity prices, renewable energy subsidies etc) associated with entering the WEM, but provided they secured an Electricity Transfer Access Contract (ETAC), network risks were negligible.

The move to a constrained access framework with "non-firm" access rights significantly increases the risks of operating in the SWIS and will act as a barrier to future investment in dispatchable generation. Consequentially this has a potential material impact on projected revenues and profitability. As a result, it is likely that new investment in dispatchable generation in the SWIS will only occur at a significant premium in future years. The premium will have to be paid given that the requirement for rapid response dispatchable generation in the WEM will only increase with likely increasing investment in intermittent generation which has resulted from the imposition of the Small-scale Renewable Energy Scheme (SRES) and the Large-scale Renewable Energy Target (LRET) scheme.

3. How can we ensure sufficient investment in dispatchable plant in the SWIS?

There are real concerns across Australia that current policy settings in the NEM do not provide incentives for dispatchable plant to remain in service nor encourage new facilities to be developed, and that the loss of this type of plant can reduce the reliability and resilience of the electricity system and/or increase wholesale prices.

As a result, the Federal Government has proposed to introduce the National Energy Guarantee (NEG) to ensure that electricity retailers simultaneously underwrite low emission plant to meet

³ Public Utilities Office | Department of Treasury, Improving access to the Western Power network, Implementing a constrained network access regime, 16 February 2018

emission reduction targets, while also underwriting the development of dispatchable plant to meet reliability requirements in the NEM.

Network access in the NEM is based on constrained access, as is being proposed for the SWIS.

The key issue for the WEM and the SWIS is: do proposed changes to network access, energy markets and the RCM ensure electricity is supplied reliably at minimum economic cost? This is the central question that needs to be addressed in implementing constrained network access in the SWIS and associated reforms of the energy and capacity market.

This question implies that proposed reforms should ensure that sufficient dispatchable generation needs to remain in the market and grows overtime to meet the reliability target for the WEM (i.e. meet a 1 in 10-year peak demand with a major plant outage and unserved energy less than 0.002 per cent). This issue does not appear to us to be addressed directly in the consultation paper.

The reforms need to be tested to ensure that reliability can be maintained at minimum economic cost, and if insufficient, additional reforms may need to be considered to ensure sufficient dispatchable generation is available in the system. This could include creating inertia services markets or inertia ancillary services, and/or valuing fast response generation/storage at a premium in the capacity market. This latter issue is discussed further in our response to the PUO discussion paper on “Allocation of capacity credits in a constrained network”.⁴

4. Adverse consequences for existing generators

The loss of “firm” access rights for existing generators (effectively overriding contractual entitlements and replacing the network access framework that supported past investment decisions) for existing generators does not provide incentives for dispatchable generators to remain in the SWIS.

It is foreseeable that the subordination (or overriding) of contractual entitlements under constrained access may lead to adverse consequences for some incumbent generators. Given that any adverse consequences are not the fault of any decision made by incumbent generators, it is fair and reasonable that the Government implement transitional arrangements to implement constrained access, including the provision of transitional assistance.

We understand that the Public Utilities Office is separately undertaking a financial modelling exercise to quantify potential changes to generator dispatch outcomes and future trends in revenue projections and Merredin Energy will provide comments on the modelling approach and assumptions in a separate submission.

While transitional assistance should be provided if existing rights are removed by the implementation of constrained network access, it is Merredin Energy’s strong preference that existing rights for incumbent generators should be maintained and that constrained access should only apply to new facilities. As we discuss in our response to the EY modelling methodology paper⁵ (separate submission from Merredin Energy), there is so much uncertainty about the factors influencing wholesale prices and constrained plant dispatch (e.g. future plant build/retirements, fuel prices etc), it will be difficult to calculate financial impacts for an incumbent generator under unconstrained and constrained access arrangements with a high degree of confidence.

⁴ Public Utilities Office | Department of Treasury, Allocation of capacity credits in a constrained network, 26 February 2018

⁵ EY, Modelling the impacts of constrained access – methodology and assumptions, For the Public Utilities Office, 28 February 2018

Apart from modelling the consequences of network access and wholesale market changes, it is also imperative that future modelling assess the implications of increasing intermittent generation in the SWIS and whether proposed market settings will ensure that reliability and security are maintained at an efficient economic cost. This does not appear to be the aim of the EY modelling.⁶

In addition, the modelling assumptions regarding future plant retirements and new plant investment over the period 2022 to 2032 do not look realistic. There are currently more than 1500 MW of renewable projects attempting to enter the SWIS. It is likely that almost 700 MW of these projects will be commissioned by 2022. Yet the EY modelling assumption is that only 500 MW of renewable projects will be commissioned by 2022. After 2022, it is likely that another 350 MW of projects will be commissioned by 2032 (independent analysis undertaken by Marsden Jacob Associates).

Even if 700 MW of renewable generation enters the system (mix of wind and solar) by 2022, it is only likely to have a capacity factor of around 32 per cent, implying an average load of 224 MW. With anticipated plant retirements (discussed below) and some load growth in the SWIS, this implies that more dispatchable generation will be required to meet SWIS energy requirements, provide ancillary services (e.g. frequency control) and meet peak load in the SWIS.

With regard to plant retirements, it is likely that there will be significant plant retirements over the period 2022 to 2032, especially given the age of some units (“end of life” retirements) as well as economic plant retirements (i.e. retirements that take place because market revenue can’t cover avoidable costs or provide a market revenue benefit to a portfolio generator in the SWIS). In our view, 1000 MW of dispatchable generation will exit the market by 2032.

Given the combination of dispatchable plant exits (i.e. 1000 MW by 2032) and intermittent plant entry (700 MW by 2022, additional 350 MW by 2032), will proposed policy settings address the reliability and security issues facing the system over this period? These issues do not appear to be addressed, yet we are embarking on reforms that mainly disadvantage dispatchable generation in the SWIS. This seems to be a perverse outcome of the reform process at a time when the demand for dispatchable generation is likely to increase significantly and consequently the value of that generation.

In our view, the reform process should not disadvantage existing (or incumbent) generation in the SWIS. If it does, then incumbent generation should be fully compensated for any potential financial loss. Compensation should not be based on a scenario as outlined by EY in the modelling consultation paper but should be based on a high renewables/high plant retirement scenario which in our view is most likely. It is likely that both equity and debt providers will undertake valuations of existing generation assets on this type of scenario and not an Expected Case as outlined in the EY consultation paper.

5. Transitional Assistance Approach

It is likely that the implementation of constrained network access and wholesale market reforms (i.e. certification of plant under constrained access) will result in adverse consequences for some incumbent generators that have made investments based on the existing policy and regulatory framework.

The Public Utilities Office intends on developing a mechanism to deliver transitional assistance to adversely effected incumbent generators. The PUO has identified the following considerations that influence the selection of a mechanism to provide transitional assistance:

⁶ Ibid

- Generator financial losses can be identified and directly attributed to the introduction of constrained access.
- Generator financial losses can be quantified reasonably accurately, using an open and transparent process.
- Administrative costs are kept to a minimum and the mechanism is simple to implement and operate.

Generator financial losses have already resulted from the reform process that commenced in 2014. Changes to the Reserve Capacity Price formula (increased responsiveness to excess capacity), possibility of future auctions with low capacity prices (which could result from “gaming” by significant market participants), loss of firm access rights and general uncertainty have resulted in incumbent generators making more conservative revenue forecasts (e.g. energy and capacity revenue). As a result, incumbent generators have experienced a write-down on asset values (i.e. reduction in equity value of assets). The increased uncertainty has made refinancing of power stations more difficult (required every 3 to 5 years), with the result that interest rates on debt finance have risen for private sector generation assets in the SWIS.

In general, the above considerations in providing transitional assistance are relevant (*Question 3*). The challenge will be accurately measuring financial losses and attributing them to constrained access only. As outlined, revised revenue forecasts have already resulted in reduced operating profits and reduced asset values for incumbent generators.

The above framework appears to be focused on the implementation of constrained access in October 2022 and consequent changes to wholesale energy and capacity markets. This suggests that changes in future generation valuations will need to reflect future proposed changes. Reluctantly we agree that the transitional framework needs to be future focused as previous changes to asset valuations have already been incorporated into the balance sheets of existing generators and assistance shouldn't be used to compensate for past losses. It would also be too difficult to estimate financial losses accrued only due to the widely anticipated move to constrained network access.

The types of losses that are attributable to constrained network access can include the following:

- Loss of energy revenue due to being constrained off;
- Loss of LGC revenue;
- Reduction in ancillary service revenue (e.g. LFAS, network control ancillary services etc).
- Incurring additional fuel costs due to ‘take or pay’ fuel supply arrangements
- Reduction in capacity revenue (due to a reduction in the number of capacity credits issued to a participant due to the proportion of unconstrained access being reduced).
- Capital contributions made to Western Power for obtaining firm and unconstrained access to the SWIS

Other losses (or additional costs) which have not been factored into the assessment is the higher refinancing costs for incumbent generators that may result directly from the implementation of constrained access and associated wholesale market reforms. Merredin Energy has already absorbed higher refinancing costs associated with proposed market reforms to date and the implementation of further reforms that negatively impact the financial performance of MEPS will increase refinancing costs.

The consultation paper suggests that it is too difficult to identify and quantify all incumbent generator costs associated with the move to constrained network access, and only wants to focus on changes in wholesale market revenues that result (pp.16-17). As a result, the discussion paper recommends that a “market-based solution” be adopted for providing transitional assistance rather than the more detailed “administrative solution”.

The number of incumbent market generators in the WEM is around 27. To suggest that the government can’t undertake an assessment on a case-by-case basis (voluntary for participants) would not be significantly burdensome. As owner of Synergy’s assets, the PUO and WA Treasury will likely investigate in detail the impacts of moving to constrained access on Synergy’s operating profits and future asset values.

The reform process that evolved out of the Electricity Market Review (EMR) was not what the private sector wanted nor was warranted given the challenges at the time were a highly concentrated market structure, limited retail contestability and over-rewarding DSM facilities via the Reserve Capacity Mechanism. The key questions that we wanted addressed was reform of the market structure (e.g. addressing Synergy’s dominant role in the wholesale market), opening up of the retail market (e.g. Full Retail contestability) and reform of the Reserve Capacity Mechanism to ensure that capacity resources were valued appropriately (e.g. DSM). While the removal of DSM facilities from the RCM and separate pricing of DSM facilities resulted from reforms implemented to date, the other issues have not been adequately addressed.

Instead we now have a raft of reforms to change network access and wholesale market reforms which aim to harmonise the WEM with the NEM. Yet the NEM is facing significant challenges with the integration of intermittent plant into various regions of the NEM and face significant changes to the market to address the associated issues (e.g. inertia services, National Energy Guarantee, 5-minute market settlement, centralised management of battery storage technologies given their rapid response capability, and the proposed development of large scale energy storage, e.g. Snowy 2.0)

Given that the WA Government has committed to moving to constrained network access and the purported benefits and costs that will result (many of which will never be fully identified and estimated), at a minimum, the WA Government should address adverse consequences on a case-by-case basis (*Question Nine*). This would allow parties to present more accurate estimates of the revenue and cost implications of constrained access on an individual party. Assistance calculations can be calculated for that party, rather than just relying on broad market revenue impacts.

The PUO suggests that an administrative solution will be less accurate because it relies on market simulation models (e.g. forward projections) as opposed to actual market outcomes. However, future valuation of each generator in the WEM requires making forward projections and refinancing of these assets depends on those assumptions. These forecasts will have been undertaken for each incumbent market generator regardless of whether the PUO implements a market based or administrative solution.

6. Treatment of capital contributions

It is our understanding that some generators (mainly those connected prior 1999) have paid capital contributions for firm and unconstrained access to the Western Power network. Given that firm and unconstrained access has been removed, those parties should be compensated for the loss of these rights.

It is claimed that Western Power has been unable to manage its capital contribution records for the connection of around 21 large generation units built pre-1999 and around 51 generation

units built since that time. If we aggregate by power station, then the number of connections and associated capital contributions is even lower.

We do not believe that it is onerous for Western Power to review past contribution policies, capital contribution payment records and determine (even approximately) amounts owned to generators who have lost rights to their network. The degree of difficulty is reduced if any capital contributions paid by Synergy (and previous state-owned organisations) were excluded since this represents transfers between WA government entities (*response to Question 10*).

7. Contractual certainty and limiting exposure to Western Power

The discussion paper (Section 2.6) emphasises that the reform process and the negotiation of network access contracts must provide contractual certainty and limit any damage claims against Western Power by market participants. The PUO is proposing that Western Power will receive statutory immunity from inconsistencies in the terms and conditions of current access contracts and constrained access reforms.

In our view, the statutory immunity releases Western Power from “good faith” negotiations with market participants on revised access terms and conditions. It would be our preference that Western Power renegotiate access terms and conditions with parties, of which there is only likely to be around 27 parties. This is not onerous and helps both parties to build an understanding of the issues confronting each party and allows for some flexibility in terms and conditions.

Western Power would not be obligated to provide firm and unconstrained access to new entrants (as this would be prohibited as discussed in Section 2.3.3 of the Discussion Paper). However, existing access rights should be honoured or transferred to another party on commercial terms (see our discussion in Section 4).

By over-riding contractual entitlements to incumbent generators, WA Government is clearly signalling to domestic and overseas investors/debt providers that there are significant ‘sovereign’ risks associated with funding long, lived infrastructure assets in WA. This raises the cost of refinancing existing power stations and financing new power stations, all of which will be required to help manage the increased penetration of intermittent generation in the SWIS and to replace retired power stations.

It is our strong preference that WP not receive immunity from inconsistencies in the terms and conditions of current access contracts and constrained access reforms and that WP negotiate with each market participant impacted by the proposed reforms.

8. Address specific questions asked in the discussion paper

Provided below are our views on the specific issues raised by the PUO in the discussion paper. Some of these issues were addressed above and our response is summarised below.

Question 1: Are there other reforms that are essential to implement a constrained network access regime?

We agree that necessary reforms to implement a constrained network access regime includes the following: security-constrained market design, facility bidding for all market participants, co-optimisation of energy and ancillary services, and the implementation of five-minute dispatch. However, given the likely increase in large-scale intermittent generation (at least 1050 MW by 2032), continued growth in rooftop PV and retirement of dispatchable generation (1000 MW) in the SWIS, proposed reforms need to be tested to ensure the WEM will continue to meet reliability targets at minimum economic cost. If this is not the case, additional reforms may need to be considered to ensure sufficient dispatchable generation is available in the

system. This could include creating inertia services markets or inertia ancillary services, and/or valuing fast response generation/storage differently in the capacity market.

If constrained access is to be implemented, in our view, any new plant entering the SWIS who may restrict the output from an incumbent generator (based on Western Power or technical consultant modelling) should negotiate with an incumbent generator to buy existing additional access rights from the incumbent generator (a process that could be facilitated by the PUO). The access right should exit beyond an Electricity Transfer Access Contract (ETAC) for an individual plant, since investments in incumbent plant were based on firm and unconstrained access for the anticipated life of the plant (e.g. 40 to 50 years coal, 25 years for gas and renewable plant). This overcomes any problems with removing contracted rights and claims for compensation from the WA government. It also helps to facilitate the economic dispatch of plant since the new generator (if it has a lower SRMC than the incumbent plant), can dispatch its full output into the market given it has purchased sufficient network capacity (via WP and the incumbent generator) to export at this level.

This is a reform that should be considered if constrained network access is implemented.

Question 2: Are there other issues associated with the implementation timeline, including the proposed 'go-live' date of 1 October 2022?

While it is our preference that constrained access is not implemented in the SWIS, we need to provide certainty to both investors and debt providers on the future network access regime. If this does not happen soon, then it will be difficult to underwrite existing and new dispatchable generation in the SWIS which will be required to maintain reliability and security due to the anticipated increase in intermittent generation connected to the SWIS. From this standpoint, a 2022 start date will help achieve this objective.

Given the significance of the changes, time required for negotiations with WP on network access and the WA Government on transitional assistance, as well as time to develop new business plans for incumbent generators (typically are 5-year plans), it is our preference that implementation would occur on October 2023.

Question 3: Are there other principles that should be considered?

A key principle omitted is that market generators should be compensated for the loss of rights granted by contract and current (and previous) network access arrangements that underpinned the decision to invest in dispatchable generation in the SWIS.

In addition, proposed arrangements should incentivise investment in dispatchable generation (or storage) in the SWIS to improve the resilience and reliability of the SWIS at least economic cost.

Question 4:

(a) Are there other options (including variations of each option above) that could better meet the guiding principles?

(b) Are there other advantages and disadvantages of each option (including other alternatives) that should be considered?

Parties should be able to renegotiate the terms and conditions of their network access contracts, or to negotiate a new access contract, so that it is consistent with a constrained network access regime. In our view this provides more flexibility to accommodate particular circumstances and helps Western Power and market generators understand the issues which will arise with constrained access for each market generator. It is not onerous for Western Power to negotiate with up to 27 incumbent market generators.

Question 5:

- (a) Does this approach best meet the guiding principles?**
- (b) Are there other approaches that should be considered?**
- (c) Are there other legislative provisions should be considered?**
- (d) What consequences could arise from the proposed approach (including the impact on specific arrangements such as bilateral trading agreements)?**

In our view it is sufficient that access to Western Power's network must *only* be provided on a constrained basis for new generators. Existing generators should retain all existing rights, unless they have negotiated for their rights to be transferred to another party (e.g. another incumbent or new entrant generator).

Question 6: Are there other considerations that should influence the design of a mechanism to provide transitional assistance?

The current list appears sufficient.

Question 7: Are there other types of financial losses that should be considered? Why?

Reduction in ancillary service revenue (e.g. LFAS, network control ancillary services etc).

Question 8: Are there other options that could be utilised to provide transitional assistance?

Market-based and Administrative solutions appear to cover most approaches.

Question 9: Is a market solution preferable to an administrative solution?

Given that the WA Government has committed to moving to constrained network access and the purported benefits and costs that will result (many of which will never be fully identified and estimated), at a minimum, the WA Government should address adverse consequences on a case-by-case basis. This would allow parties to present more accurate estimates of the revenue and cost implications of constrained access on an individual party. Assistance calculations can be calculated for that party, rather than just relying on broad market revenue impacts.

The PUO suggests that an administrative solution will be less accurate because it relies on market simulation models (e.g. forward projections) as opposed to actual market outcomes. However, future valuation of each generator in the WEM requires making forward projections and refinancing of these assets depends on those assumptions. These forecasts will have been undertaken for each incumbent market generator regardless of whether the PUO implements a market based or administrative solution.

Question 10:

- (a) Under what conditions should a refund be made available to a transmission connected generator who has paid a capital contribution to augment the shared network?**
- (b) How should the refund be paid to the generator who qualifies for a refund, and who should pay for the refund?**

We do not believe that it is onerous for Western Power to review past contribution policies, capital contribution payment records and determine (even approximately) amounts owned to generators who have lost rights to their network. The degree of difficulty is reduced if any capital contributions paid by Synergy (and previous state-owned organisations) were excluded since this represents transfers between WA government entities.



Question 11:

(a) Are there other considerations that influence the choice of the dispatch engine?

(b) Are transitional arrangements required to facilitate the relocation of the reference node?

No comment.

Regards,

A handwritten signature in black ink that reads 'J. Delicato'.

John Delicato

General Manager

Merredin Energy