Decision on the Maximum Reserve Capacity price proposed by the Independent Market Operator for the 2018/19 Reserve Capacity Year

March 2016

Economic Regulation Authority
WESTERN AUSTRALIA

This document is available from the Economic Regulation Authority's website at www.erawa.com.au. For further information, contact:

Economic Regulation Authority
Perth, Western Australia
Phone: (08) 6557 7900

Contents

DECISION

1. On 23 December 2015, the Australian Energy Market Operator (**AEMO**) provided the Economic Regulation Authority (**Authority**) with its final report on the 2016 Maximum Reserve Capacity Price (**MRCP**) for the 2018/19 Capacity Year.[1] The Authority approves the revised value for the MRCP for the 2018/19 Capacity Year of $159,800 per MW, as proposed by AEMO.

2. This approval is granted pursuant to clause 2.26.1 of the *Wholesale Electricity Market Rules* (**Market Rules**). The approval is granted on the basis that:

   - the revised value for the MRCP proposed by AEMO reasonably reflects the application of the method and guiding principles described in clause 4.16 of the Market Rules; and
   - AEMO has carried out an adequate public consultation process.

3. Although the Authority considers the proposed MRCP for 2018/19 meets the criteria required for it to be approved, it notes the planned changes to the RCM being considered by the Electricity Market Review (**EMR**) are likely to alter the current methodology for calculating the Reserve Capacity Price (**RCP**) in the 2017/18 and 2018/19 Capacity Years. Currently the RCP is based on a 15 per cent discount to the MRCP with further adjustments to reflect excess capacity. The proposed changes to the RCM would use the MRCP as the benchmark price for a new entrant when establishing the demand curve.

4. The EMR proposals would lead to the RCP declining much more quickly relative to the MRCP in response to an oversupply of capacity. The Authority considers the 2017/18 MRCP (approved by the Authority in 2015) and the 2018/19 MRCP (approved in this decision) should be reviewed to ensure they are appropriate for use as a benchmark price if the RCP methodology is revised, as planned, for the 2017/18 and 2018/19 Capacity Years.

5. For example, as noted in AEMO's report, the regulation of Western Power's distribution and transmission networks is expected to be transferred to the framework established under the *National Electricity Rules* on 1 July 2018 as part of the EMR. As a result, the transmission use of system (TUOS) charges currently paid by generators will be removed. Currently the MRCP includes an allowance for these charges (AEMO have reported this to be $10,300 per MW). An amendment would be required to adjust the MRCP to ensure generators do not recover these costs twice.

6. There may be other changes arising from the EMR which impact on the cost assumptions included in the 2017/18 and 2018/19 MRCPs.

[1] See AEMO website, Maximum Reserve Capacity Price web page, http://wa.aemo.com.au/home/electricity/reserve-capacity/maximum-reserve-capacity-price

REASONS

Background

7. The MRCP sets the maximum price that may be offered in a Reserve Capacity Auction. It is also used to set an administered Reserve Capacity Price if no auction is required.

8. Clause 4.16.3 of the Market Rules requires AEMO[2] to develop a Market Procedure documenting the methodology AEMO must use and the process AEMO must follow in determining the MRCP (**MRCP Market Procedure**).[3]

9. AEMO must follow the MRCP Market Procedure to annually review the value of the MRCP. AEMO must propose a revised value for the MRCP using the methodology described in the MRCP Market Procedure.[4]

10. AEMO must prepare a Draft Report describing how it has arrived at the proposed revised value for the MRCP, publish the report on the Market Web-Site and advertise the report in newspapers widely distributed in Western Australia and request submissions from all sectors of the Western Australian energy industry, including end-users.[5]

11. After considering submissions on the Draft Report, AEMO must propose a final revised value for the MRCP to the Authority for approval.

12. The Market Rules[6] require the Authority to:

    - review the report provided by AEMO, including all submissions received by AEMO in preparation of the report;
    - make a decision as to whether or not to approve the revised value for the MRCP;
    - in making its decision, to only consider:
        - whether the proposed revised value for the MRCP reasonably reflects the application of the method and guiding principles described in clause 4.16 of the Market Rules; and
        - whether AEMO has carried out an adequate public consultation process; and
    - notify AEMO as to whether or not it has approved the revised value.

[2] Market Operations and gas services information functions were transferred from the IMO to AEMO on 30 November 2015.

[3] See AEMO website, *Market Procedure: Maximum Reserve Capacity Price*, http://wa.aemo.com.au/docs/default-source/rules/imo-wem-procedures-and-other-documents/pc_2012__08_final_amended_market_procedure__clean_.pdf?sfvrsn=2

[4] Provided by clause 4.16.3(b) and 4.16.5.

[5] Provided by clause 4.16.6.

[6] Clause 2.26.1.

13. The Market Rules[7] provide that, where the Authority rejects a revised MRCP submitted by AEMO, it must give reasons and may direct AEMO to carry out all or part of the review process under clause 4.16 again, in accordance with any directions or recommendations of the Authority.

MRCP Market Procedure

14. The MRCP Market Procedure sets out the principles to be applied and the steps to be taken by AEMO in order to develop and propose the MRCP.

15. The broad methodology has not changed for four years and includes the following costs:

- capital cost of building a 160 MW open cycle gas turbine (**OCGT**) power station with inlet cooling system in the South West Interconnected System (**SWIS**);
- land cost associated with developing and constructing the power station;
- costs associated with connecting the power station to the transmission system;
- costs associated with building liquid fuel storage and handling facilities sufficient for the power station to operate for 14 hours at full capacity;
- fixed operating and maintenance (**O&M**) costs associated with the power station and transmission facilities;
- margin for legal, approval, financing and insurance costs and contingencies; and
- Weighted Average Cost of Capital (**WACC**).

16. The calculation of the 2016 MRCP is based on a theoretical power station that would begin operating on 1 October 2018. In accordance with the MRCP Market Procedure, capital costs are escalated to 1 April 2018 and fixed O&M costs are escalated to 1 October 2018.

Summary of input parameters and calculated values

17. The MRCP Market Procedure states that the following formulae must be used to determine the MRCP.

MRCP = (ANNUALISED_FIXED_O&M[8] + ANNUALISED_CAP_COST[9] / CC[10])

[7] Clause 2.26.2.

[8] Annualised fixed O&M cost is the annualised fixed operating and maintenance cost for a typical OCGT power station and any associated electricity transmission facilities determined in step 2.5 of the MRCP Market Procedure and expressed in Australian dollars, per MW per year.

[9] Capcost is the total capital cost estimated for an OCGT power station. Annualised capcost is the total capital cost, expressed in Australian dollars, annualised over a 15 year period, using a Weighted Average Cost of Capital (WACC), as determined in step 2.9 of the MRCP Market Procedure.

[10] CC is the expected Capacity Credit allocation determined in conjunction with power station costs in step 2.3.1(c) of the MRCP Market Procedure.

18. The value of CAP_COST must be calculated as:

CAP_COST = ((PC[11] x (1+M[12]) + TC[13]) x CC + FFC[14] + LC[15]) x (1 + WACC[16])^1/2

19. A summary of the input parameters to the MRCP and their calculated values for the 2018/19 Capacity Year in AEMO's Final Report compared with the approved values for 2017/18 is provided in the table below.

	Proposed value 2018/19	Approved value 2017/18	Units	Market Procedure definition
Power station expected Capacity Credit allocation	150.5	150.5	MW	CC
Weighted Average Cost of Capital	5.69	5.81	%	WACC
Power station costs	834,781.53	865,835.57	$/MW	PC
Factor for legal, financing, approvals, contingencies and other costs	20.00	19.97	%	M
Transmission connection works	160,280.00	161,194.00	$/MW	TC
Fixed fuel costs	7,089,948.39	7,282,059.84	$	FFC
Land costs	2,656,498.81	2,751,636.61	$	LC
Total capital cost	189,810,125.56	196,083,111.85	$	CAP_COST
Annualised capital cost	**19,149,362.06**	**19,938,595.51**	**$/year**	**ANNUALISED_CAP_COST**
Annualised fixed O&M cost	**32,581.68**	**32,307.02**	**$/MW/year**	**ANNUALISED_FIXED_O&M**
MRCP (rounded)	**159,800**	**164,800**	**$/MW/year**	**MRCP**

20. The reduction in the proposed value for 2018/19 compared to 2017/18 reflects:

- a reduction in the WACC, largely due to a reduction in the risk free rate;
- reductions in commodity prices, particularly for copper, steel and cement; and
- lower escalation factors reflecting lower commodity prices, lower forecast inflation and labour prices.

21. The Authority has reviewed AEMO's Draft Report and Final Report, MRCP calculation spreadsheet and public submissions received by AEMO in response to its Draft Report. The Authority has also reviewed reports commissioned by AEMO in

[11] PC is the capital cost of an OCGT power station, expressed in Australian dollars per MW, as determined in step 2.3 of the MRCP Market Procedure for that location.

[12] M is a margin to cover legal, approval, financing and other costs and contingencies as detailed in step 2.8 of the MRCP Market Procedure.

[13] TC is the estimate of Total Transmission Costs as determined in step 2.4 of the MRCP Market Procedure.

[14] FFC is the Fixed Fuel Cost as determined in step 2.6 of the MRCP Market Procedure.

[15] LC is the Land Cost as determined in step 2.7 of the MRCP Market Procedure.

[16] WACC is the Weighted Average Cost of Capital as determined in step 2.9 of the MRCP Market Procedure.

regard to input parameters for the MRCP, in order to assess that these reports reasonably reflect the application of the method and guiding principles described in clause 4.16 of the Market Rules.

22. The Authority is satisfied that AEMO has calculated the MRCP according to a methodology that reasonably reflects the application of the method and guiding principles described in clause 4.16 of the Market Rules and the MRCP Market Procedure.

23. In particular, the Authority notes that AEMO has calculated the MRCP using the formula set out in section 2.10.1 of the MRCP Market Procedure.

Power station costs (PC)

24. Section 2.1.1 of the MRCP Market Procedure states that the power station upon which the MRCP is based must:

- be representative of an industry standard liquid-fuelled OCGT power station;
- have a nominal nameplate capacity of 160 MW prior to the addition of any inlet cooling system;
- operate on distillate as its fuel source;
- have a capacity factor of 2%;
- include low Nitrous Oxide (NOx) burners or associated technologies, as would be required to demonstrate good practice in power station development;
- include an inlet air cooling system and water receival and storage facilities to allow 14 hours of continuous operation, where in the opinion of the IMO[17] this would be cost effective; and
- include the minimum level of equipment or systems required to satisfy the Balancing Facility Requirements.

25. The MRCP Market Procedure states that AEMO must engage a consultant to provide:

- an estimate of the costs associated with engineering, procurement and construction of the power station as at April in Year 3 of the Reserve Capacity Cycle;
- a summary of any escalation factors used in the determination; and
- likely output at 41 degrees Celsius, which will take into account available turbine and inlet cooling technology, likely humidity conditions and any other relevant factors, which represents the expected Capacity Credit allocation of the power station.

26. AEMO commissioned Jacobs to provide estimates of generation plant capital costs for a 160 MW OCGT power station located within the SWIS. Based on Jacobs' capital cost estimate, escalated forward to 1 April 2018 dollars as required by the MRCP Market Procedure, AEMO has proposed a value of $834,782 per MW for the capital cost of an OCGT.

[17] Since market operations and gas services information functions were transferred from the IMO to AEMO on 30 November 2015, AEMO must now follow the MRCP Market Procedure to annually review the value of the MRCP according to the MRCP Market Procedure.

27. AEMO notes the power station costs have reduced from last year's estimation as a result of lower commodity prices, particularly for copper, steel and cement.

28. Jacobs used the same methodology to calculate the power station capital costs as last year. Jacobs selected a 178MW OCGT generator[18] as the reference equipment on the basis that it is currently the most appropriate machine available that meets the criteria for the MRCP calculation. As the nameplate capacity of this machine is 178 MW, Jacobs identified the components of the capital costs that are likely to be scalable with generator size and those components that are likely to be fixed, and only adjusted the scalable costs in estimating the capital cost for a nominal 160 MW power station.

29. Given that the MRCP Market Procedure requires that the capital cost of the notional power station be based on a 160 MW industry standard liquid-fuelled OCGT power station with inlet cooling, located within the SWIS, the Authority considers the scaling approach by Jacobs to be a reasonable application of the MRCP Market Procedure and is consistent with previous years.

30. The Authority notes that the estimated capital cost of a power station has decreased by 3.6 per cent compared to last year's cost, due to reductions in commodity prices.

31. The Authority is satisfied that AEMO has calculated the capital cost of an OCGT according to a methodology that reasonably reflects the application of the method and guiding principles described in clause 4.16 of the Market Rules and the MRCP Market Procedure.

Factor for legal, insurance, approvals, other costs and contingencies (margin M)

32. Step 2.8 of the MRCP Market Procedure states that AEMO must engage a consultant to determine the value of margin M, which comprises the following costs associated with the development of the power station project:

- legal costs associated with the design and construction of the power station.
- financing costs associated with equity raising.
- insurance costs associated with the project development phase.
- approval costs including environmental consultancies and approvals, and local, state and federal licensing, planning and approval costs.
- other costs reasonably incurred in the design and management of the power station construction; and
- contingency costs.

33. AEMO commissioned Jacobs to provide an estimate of the above costs. Jacobs estimated these based on the costs associated with recent comparable developments, excluding any project specific abnormal costs. Jacobs has scaled the costs for a 160 MW power station where relevant.

[18] The Siemens SGT5-2000E (33MAC) which is the only gas turbine make/model in production that is rated in close proximity to the notional power station required under the MRCP Market Procedure (i.e. 160MW industry standard liquid-fuelled OCGT power station with inlet cooling).

34. Based on Jacobs' report, AEMO proposed a margin of 20.00 per cent, which is added as a fixed percentage of the capital cost of developing the power station.

35. The Authority is satisfied that AEMO has calculated the margin for M according to a methodology that reasonably reflects the application of the method and guiding principles described in clause 4.16 of the Market Rules and the MRCP Market Procedure.

Transmission connection works (TC)

36. Step 2.4 of the MRCP Market Procedure states that Western Power must provide an estimate of the total transmission costs, in accordance with the methodology in the Market Procedure to connect the generator and deliver the output to loads, consistent with the relevant planning criteria in the Technical Rules.[19]

37. The estimated total transmission costs must be derived from capital contributions either paid historically or expected to be paid to Western Power under Access Offers[20] and Western Power's Contribution Policy as approved by the Authority by generators that are capable of being gas or liquid fuelled.[21]

38. According to the MRCP Market Procedure, the transmission connection cost is calculated by using actual connection costs for projects completed within a five-year window, and each connection cost is weighted according to the year that the facility commenced, or is expected to commence operation.

39. For any year for which no actual project data is available, Western Power is required to estimate the shallow connection cost consistent with the MRCP Market Procedure. The shallow connection cost, as specified in the MRCP Market Procedure, includes the direct infrastructure costs to connect a new generator to the existing transmission system, including the cost of construction of a substation, two kilometres of overhead line to the power station and an overhead line easement.[22]

40. The Authority understands from AEMO that in this year's review, actual project data was only available for one year within the five-year window and that the remaining four years have been based on shallow connection cost estimates.

41. In accordance with the requirement of the MRCP Market Procedure, Western Power has calculated the transmission connection cost estimate as part of its obligations under the MRCP Market Procedure, and has provided an independent audit report to AEMO verifying the accuracy of the estimates on the basis that the underlying data is commercial in-confidence and cannot be published. Based on this, AEMO has proposed a value of $160,280 per MW for transmission connection costs. This is a decrease of 0.6 per cent from the 2015 estimate, reflecting a fall in the transmission connection cost escalation factor, offset by an increase in substation costs.

42. The Authority is satisfied that AEMO has calculated the transmission connection costs according to a methodology that reasonably reflects the application of the

[19] See Western Power website, *Technical Rules web page*, http://www.westernpower.com.au/aboutus/accessArrangement/Technical_Rules.html

[20] Access Offers are made in accordance with the *Electricity Networks Access Code 2004* and Western Power's Capital Contribution Policy.

[21] Facilities excluded from the Access Offers calculation are stipulated in section 2.4.1 of the Market Procedure.

[22] AEMO provides easement costs to Western Power for use in estimating shallow connection costs.

method and guiding principles described in clause 4.16 of the Market Rules and the MRCP Market Procedure.

43. The Authority notes that, prior to the 2012 Reserve Capacity Cycle, transmission costs were based on a high level indicative estimate of future costs. As a result of the five-yearly review of the MRCP Market Procedure, a modified approach to calculating total transmission costs was adopted whereby the cost estimate is based on actual connection costs. This change was adopted because it was considered the previous approach could lead to inaccuracies and year-to-year volatility. The Authority notes that the current MRCP Market Procedure requires shallow connection costs to be estimated by Western Power in instances where no actual project data is available, which may also lead to inaccuracies in the calculation of total transmission connection costs for the determination of the MRCP. The Authority recommends the methodology for calculating transmission connection costs should be reviewed in the next five-yearly review of the MRCP Market Procedure.

Fixed fuel costs (FFC)

44. Step 2.6 of the MRCP Market Procedure states that AEMO must engage a consultant to determine an estimate of the costs for the liquid fuel storage and handling facilities of the power station. This includes the initial cost of filling the tank with diesel fuel to a level sufficient for 14 hours of operation.

45. AEMO commissioned Jacobs to estimate the fixed fuel costs. Based on Jacobs' estimates, escalated to 1 April 2018 as required by the MRCP Market Procedure, AEMO has proposed a value of $7.090 million for fixed fuel costs which is lower than the 2015 value of $7.282 million. This is largely a result of a decrease in the price of diesel fuel which reduces the cost of the first fill of the storage tank.

46. The Authority is satisfied that AEMO has calculated fixed fuel costs according to a methodology that reasonably reflects the application of the method and guiding principles described in clause 4.16 of the Market Rules and the MRCP Market Procedure.

Land costs (LC)

47. Step 2.7 of the MRCP Market Procedure states that AEMO must retain Landgate under a consultancy agreement to provide valuations on parcels of industrial land. The regions in which the analysis is required to be conducted include:

- Collie Region
- Kemerton Industrial Park Region
- Pinjar Region
- Kwinana Region
- North Country Region; and
- Kalgoorlie Region.

These areas represent the regions within the SWIS where generation projects are most likely to be proposed and should provide a broad cross-section of options.

48. The MRCP Market Procedure states that AEMO will provide an indication as to the size of land required, which should be limited to:

- a three hectare parcel of land in an industrial area of a standard size, with consideration given to any requirements for a buffer zone in that specific location (where the minimum land size is greater than three hectares, the minimum available land size shall be used); and
- the summation of multiple smaller parcels of land, as appropriate to meet these requirements.

49. The Authority notes that three hectare sites were used for all locations except Kemerton, for which the smallest available lot is five hectares. This approach is identical to that used in previous MRCP reviews. The Authority also notes that Landgate has provided its estimate of the cost of each land parcel as at 30 June 2015 excluding transfer duty, and that applicable transfer duty was added to each land parcel cost, as in the last three MRCP reviews. The Authority recognises that the inclusion of the transfer duty is not explicitly specified in the MRCP Market Procedure but considers that it is appropriate to include the transfer duty as part of the land costs calculation, as has been the case in previous years.

50. Pursuant to the MRCP Market Procedure, AEMO has calculated the mean of the seven valuations, and has escalated the land cost to 1 April 2018 as required in the MRCP Market Procedure. AEMO has proposed a value of $2.656 million for land costs, which represents a decrease of 3.5 per cent from the corresponding value for the 2015 MRCP. This is due to the slowdown in the WA economy, driven by a weakening resources sector, which reduced demand for industrial land resulting in lower sales and land prices. This specifically affected the land valuations of Collie, Eneabba, Kwinana and Pinjar regions.

51. The Authority is satisfied that AEMO has calculated land costs according to a methodology that reasonably reflects the application of the method and guiding principles described in clause 4.16 of the Market Rules and the MRCP Market Procedure.

Fixed operating and maintenance costs (Annualised fixed O&M)

52. Step 2.5 of the MRCP Market Procedure states that AEMO must determine fixed O&M costs for the power station and the associated transmission connection works. Fixed O&M costs must also include:

- fixed network access and/or ongoing charges, which are to be provided by Western Power; and
- an estimate of annual insurance costs as at 1 October in Year 3 of the relevant Reserve Capacity Cycle, in respect of power station asset replacement, business interruption and public and products liability insurance, as required under network access arrangements with Western Power.

53. AEMO commissioned Jacobs to provide an estimate of fixed O&M costs for the power station and the associated transmission connection works.

54. Jacobs has calculated the power station fixed O&M costs based on similar recent and current OCGT projects. These costs are annualised and escalated to 1 October

2018 using the generation O&M escalation factor, providing a value of $16,330 per MW per year.

55. The fixed O&M costs for transmission connection works include the switchyard and the transmission line O&M costs. Jacobs used a bottom-up approach to estimate these costs using data from several Australian transmission network service providers. These costs are annualised and escalated to 1 October 2018 using the connection O&M escalation factor, resulting in a value of $501.47 per MW per year.

56. AEMO estimated the fixed network access charges using Western Power's 2015-16 Price List which was approved by the Authority. It used the Transmission Reference Tariff (**TR2**), which is the relevant tariff that applies to generation facilities. The Muja Power Station substation was selected as the base tariff input for the calculation of the fixed network access charges. These charges have been escalated to 1 October 2018 using the Consumer Price Index in accordance with the MRCP Market Procedure, providing a value of $11,096 per MW per year.

57. The fixed O&M costs include annual insurance costs to cover asset replacement, business interruption and public and products liability insurance. AEMO obtained advice on insurance costs from an independent insurance broker to calculate insurance premiums. The insurance costs in the fixed O&M costs is escalated to 1 October 2018, resulting in an annualised value of $4,654 per MW per year. This represent a 1.7 per cent decrease from last year's costs, which is due to lower business interruption and asset replacement insurance premiums as a result of fewer natural disasters and manufacturing claims.

58. Based on the cost estimates discussed above, AEMO has proposed a value for the total annualised fixed O&M costs of $32,582 per MW per year.

59. The Authority is satisfied that AEMO has calculated fixed operating and maintenance costs according to a methodology that reasonably reflects the application of the method and guiding principles described in clause 4.16 of the Market Rules and the MRCP Market Procedure.

Weighted average cost of capital (WACC)

60. Step 2.9 of the MRCP Market Procedure states that AEMO must determine the cost of capital to be applied to various cost components of the MRCP. The MRCP Market Procedure sets out the parameters and a formula for calculating the WACC in real pre-tax terms. The WACC parameters are classified into two categories in the MRCP Market Procedure: the annual components and the five-yearly components.

61. The MRCP Market Procedure states that in determining the WACC, AEMO must review and determine values for the annual components. It may also review and determine values for the five-yearly components that differ from those in step 2.9.8 of the procedure if, in AEMO's opinion, a significant economic event has occurred since undertaking the last five-yearly review of the MRCP, in accordance with clause 4.16.9 of the Market Rules.

62. AEMO determined the WACC by using the Capital Asset Pricing Model. It engaged PricewaterhouseCoopers (**PwC**) to calculate the Debt Risk Premium (**DRP**) and calculated the remaining WACC components from information available from the RBA website. The nominal risk free rate was determined from observed yields of

Commonwealth Government bonds, while the DRP was derived from observed yields of corporate bonds.

63. The MRCP Market Procedure requires AEMO to determine the methodology to estimate the DRP, which in the opinion of AEMO is, "consistent with current accepted Australian regulatory practice". The MRCP Market Procedure footnotes the "bond yield approach" developed by the Authority which is published in the Authority's Rate of Return Guidelines.[23] This approach uses a sample of bonds issued in Australian dollars by Australian entities to estimate a DRP. The average term to maturity (tenor) of bonds samples used to estimate the DRP has a tendency to be around five years. AEMO has used this approach to estimate the DRP.

64. The Authority has recently adopted a modified bond yield approach to estimate the DRP in its Final Decision on Proposed Revisions to the Access Arrangement for the Mid-West and South-West Gas Distribution System in September 2015.[24] This modified approach uses a larger sample of bonds where the country associated risks primarily stem from Australia and allows for the inclusion of bonds issued in local and foreign currencies. The larger sample allows the estimation of a yield curve across a range of tenors so that a ten-year DRP can be calculated. The Authority is of the view that the modified approach overcomes the issue of the sample of bonds producing a DRP with an implied term to maturity of less than ten years.

65. In its report, AEMO notes that since the global financial crisis, Australian regulators have applied multiple methodologies for estimating the DRP as bond market data has become increasingly difficult to obtain. AEMO notes that Australian regulators have yet to implement a common methodology. It notes the Authority has developed and used a modified bond yield approach in the final decision on the Access Arrangement for the Mid-West and South-West Gas Distribution System in September 2015[25], but that the Rate of Return Guidelines have not been updated to reflect it and it has only been used in one decision. AEMO also notes the Australian Energy Regulator (**AER**) uses a different methodology, which AEMO considered inappropriate for financing a new asset. Therefore, AEMO has not considered AER's methodology in the determination of the 2016 MRCP.

66. AEMO concludes it is appropriate to continue to use the bond yield approach consistent with the approach adopted for the 2015 MRCP on the basis it has been applied in numerous decisions by the ERA since 2011 and is therefore still representative of current accepted Australian regulatory practice.

67. AEMO's Final Report notes that the WACC has reduced this year largely due to a reduction in the risk free rate. This has reduced the MRCP by 0.6 per cent.

68. The Authority acknowledges that the "bond yield approach" was upheld by the ACT in June 2012, and that it has been applied in a number of the Authority's decisions

[23] Economic Regulation Authority, *Rate of Return Guidelines*, 16 December 2013, https://www.erawa.com.au/cproot/11953/2/Rate%20of%20Return%20Guidelines.PDF

[24] Economic Regulation Authority, *Final Decision on Proposed Revisions to the Access Arrangement for the Mid-West and South-West Gas Distribution System*, 30 June 2015, as amended on 10 September 2015, https://www.erawa.com.au/cproot/13880/2/GDS%20-%20ATCO%20-%20AA4%20-%20Amended%20Final%20Decision%20-%20PUBLIC%20VERSION.PDF

[25] AEMO states in its Final Report that ATCO appealed to the Australian Competition Tribunal (**ACT**) the Authority's use of the modified bond yield approach in its Final Decision on Proposed Revisions to the Access Arrangement for the Mid-West and South-West Gas Distribution System. This is inaccurate as ATCO did not apply for review of the modified bond yield approach in deriving the DRP.

including the Final Decision on Proposed Revisions to the Access Arrangement for the Western Power Network,[26] the Final Decision on Proposed Revisions to the Access Arrangement for the Dampier to Bunbury Natural Gas Pipeline,[27] and the Final Decision on WA Gas Networks Proposed Revised Access Arrangement for the Mid-West and South-West Gas Distribution Systems.[28]

69. Although the Authority has now modified its approach to calculating the DRP, it acknowledges that the Authority's Rate of Return Guidelines have not been amended to reflect the modified bond yield approach, and that the Final Decision on Proposed Revisions to the Access Arrangement for the Mid-West and South-West Gas Distribution System is the only final decision to which this modified approach has been applied.

70. For these reasons, the Authority considers it reasonable for AEMO to continue to take the view that the bond yield approach is consistent with current accepted Australian regulatory practice. However, the Authority considers that further clarity and definition of "current accepted Australian regulatory practice" should be incorporated in the next five-yearly review of the MRCP Market Procedure.

71. The Authority notes that PwC has excluded two corporate bonds[29] from its initial sample of 30 bonds in its calculation of the DRP. The Authority understands from AEMO that these two bonds were excluded because they are inflation indexed bonds, and that they are not actively traded in financial markets due to their poor liquidity thereby making the reported yield unrepresentative. The Authority is of the view that it is reasonable to exclude these two bonds on the basis that the yields reported for these bonds are real and that the yields are too low by the amount of inflation in the index they reference, rather than on the basis of poor liquidity.

72. The Authority has also examined the other annual WACC components determined by AEMO. Similar to last year's review, the Authority notes an inconsistency in the calculations, whereby data used to derive the Risk Free Rate and DRP were based on different date ranges.[30] Although the Authority accepts that AEMO has calculated the annual WACC components in line with the MRCP Market Procedure, best regulatory practice would be to calculate all annual WACC parameters using consistent date ranges. The Authority recommends that AEMO review this element of methodology in the next five-yearly review of the MRCP Market Procedure.

---

[26] Economic Regulation Authority, *Final Decision on Proposed Revisions to the Access Arrangement for the Western Power Network*, 5 September 2012, http://www.erawa.com.au/cproot/10737/2/20120905%20-%20D94955%20-%20Final%20Decision%20on%20Proposed%20Revisions%20to%20the%20Access%20Arrangement%20for%20the%20Western%20Power%20Network%20-%20Published%20Version.pdf

[27] Economic Regulation Authority, *Final Decision on Proposed Revisions to the Access Arrangement for the Dampier to Bunbury Natural Gas Pipeline*, 31 October 2011 as amended on 22 December 2011, https://www.erawa.com.au/cproot/10009/2/20111031%20FD%20on%20Proposed%20Revisions%20to%20the%20AA%20for%20the%20DBNGP%20-%20Submitted%20by%20DBNGP%20(WA)%20Transmission%20Pty%20Ltd.PDF

[28] Economic Regulation Authority, *Final Decision on WA Gas Networks Pty Ltd Proposed Revised Access Arrangement for the Mid-West and South-West Gas Distribution Systems*, 28 February 2011, https://www.erawa.com.au/cproot/9382/2/20110228%20Final%20decision%20on%20WA%20Gas%20Networks%20Pty%20Ltd%20proposed%20revised%20access%20arrangement%20for%20the%20MW%20and%20SW%20GDS.pdf

[29] Two Sydney airport finance bonds.

[30] The DRP and Risk Free Rate were estimated from data ending in 13 November 2015 and 30 November 2015, respectively.

73. The Authority is satisfied that AEMO has calculated the WACC according to a methodology that reasonably reflects the application of the method and guiding principles described in clause 4.16 of the Market Rules and the MRCP Market Procedure.

Public consultation process

74. The IMO[31] published a Draft Report on 6 November 2015, which described how it arrived at the proposed revised value for the MRCP and called for submissions by 4 December 2015. Rule Participants and other industry stakeholders were advised of the publication of the Draft Report and supporting documents. Announcements were also published in the Australian Financial Review newspaper and the West Australian newspaper on 9 November 2015. The Draft Report and supporting documents, including reports from Jacobs, PwC, Landgate and Western Power were published on the Market Web-Site.[32]

75. Two submissions were received through the public consultation process on the Draft Report from Synergy and Tesla Corporation. The Authority notes the issues raised include the assumptions and methodology to estimate the cost of a representative power station and the methods used to calculate the WACC components. Summary of the submissions and responses to the submissions are detailed in chapter 4 of the 2016 MRCP for the 2018-19 Capacity Year Final Report.

76. Issues similar to these have been raised over the past few reviews. Similar to the response made in previous years, AEMO has noted the proposed MRCP is based on the current Market Procedure and that these issues would need to be addressed as part of the next five-yearly MRCP Market Procedure. The Authority notes that AEMO should ensure issues raised by Market Participants in this year's and previous years' reviews are appropriately addressed in the next MRCP Market Procedure review.

77. The Authority is satisfied with the public consultation process undertaken by AEMO.[33] In the context of the application of the method and guiding principles described in clause 4.16 of the Market Rules and the MRCP Market Procedure, the Authority is of the opinion that the comments raised by stakeholders have been appropriately addressed in AEMO's Final Report.

CONCLUSION

78. The Authority is satisfied that AEMO has met the requirements of the Market Rules in proposing the MRCP for the 2018/19 Capacity Year for the following reasons:

- the Authority is satisfied that the proposed revised value of the MRCP reasonably reflects the application of the method and guiding principles described in clause 4.16 of the Market Rules; and

[31] Market Operations and gas services information functions were transferred from the IMO to AEMO on 30 November 2015.

[32] AEMO website, *MRCP web page*, http://wa.aemo.com.au/home/electricity/reserve-capacity/maximum-reserve-capacity-price/maximum-reserve-capacity-price-overview

[33] Market Operations and gas services information functions were transferred from the IMO to AEMO on 30 November 2015.

- the Authority is satisfied that AEMO has carried out an adequate public consultation process.

79. Based on the above assessment, the Authority approves the proposed revised value for the MRCP for the 2018/19 Capacity Year of $159,800 per MW per year, effective from 1 October 2018.