IN THE WESTERN AUSTRALIAN ELECTRICITY REVIEW BOARD

No. 1 of 2016

BETWEEN:

INDEPENDENT MARKET OPERATOR (ABN 95 221 850 093)

Applicant

and

VINALCO ENERGY PTY LTD (ACN 137 532 300)

Respondent

DECISION

Made by: DS Ellis (Presiding), J Davis, G Mathieson

Date of Order: 30 August, 2017

Where made: Perth

Having heard from the parties by their counsel Mr MW Knox for the Applicant and Ms C Brown for the Respondent and having read the materials filed by the parties in these proceedings, the Board:

1 finds that the Respondent, Vinalco Energy Pty Ltd ("Vinalco") contravened Rule 7A.2.17 of the *Wholesale Electricity Market Rules* by making balancing submissions:

(a) during the period 23 February 2014 to 24 March 2014 ("first contravention"); and

(b) during the period 9 June 2014 to 30 June 2014 ("second contravention"),

when those balancing submissions were above Vinalco's reasonable expectation of the short run marginal cost of generating the relevant electricity and when the making of those balancing submissions related to market power; and

2 pursuant to Regulation 33(1) of the *Electricity Industry (Wholesale Electricity Market) Regulations*, the Board orders that Vinalco pay the market operator:

(a) $1,000 in respect of the first contravention; and

(b) $1,500 in respect of the second contravention.

The reasons for this decision are attached.

Date: 30 August 2017

DS Ellis
Presiding Member
For the Board

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REASONS FOR DECISION
MADE ON 30AUGUST 2017

Summary

1 The Respondent ("Vinalco") is the lessee and operator of the Muja AB power station, a 240MW coal fired electricity generator at Muja, made up of 4 units, G1 to G4. It supplied electricity into the South West Interconnected System ("SWIS"). The operation of the SWIS, including the Muja AB station, is governed by the Wholesale Electricity Market Rules ("Market Rules"). In accordance with these rules, Vinalco as a "Market Generator" was required to make pricing offers or "balancing submissions" on half hour intervals for each unit for each Trading Day.

2 The Applicant ("IMO") alleged that many of Vinalco's balancing submissions during the period 23 February 2014 to 24 March 2014 ("First Period") and again during the period 9 June 2014 to 30 June 2014 ("Second Period") were made at prices which were higher than Vinalco's reasonable expectation of the short run marginal cost of supplying the electricity

the subject of the Balancing Submissions and that its conduct related to market power, contrary to Rule 7A.2.17 of the Market Rules.

3 Vinalco admitted that it had contravened Rule 7A.2.17 as alleged by the IMO.

4 The IMO and Vinalco provided a statement of agreed facts and joint submissions on liability and penalty ("Joint Statement"). The Board was satisfied that the contraventions alleged by the IMO had taken place.

5 Having regard to all the circumstances of the case, including the matters identified in Regulation 33(4) of the *Electricity Industry (Wholesale Electricity Market) Regulations 2004* ("Regulations"), and the matters identified in the Joint Statement, the Board considers that it is not appropriate to impose a substantial penalty.

6 The Board imposed the following penalties:

(a) $1,000 in respect of the balancing submissions made during the First Period; and

(b) $1,500 in respect of the balancing submissions made during the Second Period.

7 No order was made as to costs.

Introduction

8 It is convenient to deal with the matter under the following headings:

(a) procedural background;

(b) Regulation 32 of the Regulations;

(c) matters relevant to penalty being:

(i) the circumstances in which the contravention took place;

(ii) the nature and extent of the contravention;

(iii) the nature and extent of any loss or damage suffered as a result of the contravention; and

(iv) whether the participant has previously been found by the Board in proceedings under the Act to have engaged in any similar conduct;

(v) the consequences of making the order; and

(d) costs

Procedural matters

9 These proceedings were commenced by the IMO by application dated 5 May 2016.[1]

10 The proceedings were initiated consequent upon investigations undertaken by the Economic Regulation Authority ("Authority") in accordance with the Market Rules. The Authority determined that the prices in the Balancing Submissions the subject of these proceedings exceeded Vinalco's reasonable expectation of the short run marginal cost of generating the relevant electricity. Having made that determination, the Authority is required to request that the IMO apply to the Board for an order for contravention.[2] Upon receipt of a request from the Authority, the IMO is required to refer the matter to the Board.[3] Neither the Authority nor the IMO has any discretion in relation to these steps.

11 On 18 July 2016, the Attorney General appointed Mr Scott Ellis as the presiding member to hear the application. On 28 July 2016, Mr Ellis appointed Ms Jennifer Davis and Mr Graham Mathieson as members of the Board.

12 The Office of the Western Australian Energy Disputes Arbitrator ("Arbitrator") maintains a record of the proceedings on the internet.[4] Directions made by the Board from time to time are reproduced on that page.

13 The proceedings were listed for a substantive hearing for four days commencing on 9 May 2017. Prior to that hearing the parties indicated to the Registrar that they had reached agreement in principle as to disposition of the matter. That agreement involved Vinalco admitting that it had contravened the Market Rules as alleged and the provision of joint submissions by the parties to the Board as to liability and penalty. Consequently, orders

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[1] The IMO's functions have since been transferred to the Australian Energy Market Operator. These proceedings fall within an exception to the transfer created by Chapter 11 of the Market Rules as they subsisted as at 1 July 2016.

[2] Rule 2.16.9G.

[3] Rule 2.16.9H.

[4] http://www.edawa.com.au/reviews/12016.

were made on 5 May 2017 vacating the hearing and programming the matter to a short hearing to provide the parties with an opportunity to put oral submissions to the Board.

14 The parties provided a document entitled "Joint Statement of Agreed Facts and Issues and Joint Submissions on Liability and Penalty" ("Joint Statement") dated 9 June 2017. The parties made oral submissions to the Board as to penalty on 19 June 2017, the effect of which was that a nominal penalty was appropriate.

15 The Board may receive and accept civil penalty submissions agreed between the IMO and Vinalco.[5] The IMO has a regulatory function under the WEM and is in a position to make informed submissions in relation to the matters the subject of this application. The Board is entitled to have regard to them. The Board has drawn on the contents of the Joint Statement in formulating these reasons.

16 A copy of the Joint Statement will be placed on the Arbitrator's website. Because the Joint Statement refers to matters which are commercially confidential to Vinalco, the copy placed on the website will be redacted.

17 The Joint Statement referred to the following additional documents that had previously been filed by the parties:

(a) parties' statement of agreed facts dated 4 November 2016;

(b) Respondent's amended statement of facts and contentions dated 10 November 2016;

(c) the IMO's discovery bundle;

(d) Applicant's amended statement of facts and contentions dated 8 November 2016. (This document had annexed to it a list of the particular balancing submissions alleged to contravene Rule 7A.2.17);

(e) witness statement of Paul Thurston Gower[6] dated 26 April 2017;

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[5] *Commonwealth of Australia v Director, Fair Work Building Industry Inspectorate* [2015] HCA 46; (2015) 326 ALR 476.

[6] General Manager – Operations, Vinalco.

(f) "Advice on Short Run Marginal Cost for Muja A/B Generators whilst Constrained-on" dated 7 April 2017 prepared by Merz Consulting ("Merz");[7]

(g) witness statement of Ronald Roduner[8] dated 8 March 2017;

(h) witness statement of Bruce Dean Layman[9] dated 3 March 2017; and

(i) Joint Experts' Report filed on 21 April 2017;[10]

18 In conducting proceedings, the rules of evidence do not bind the Board.[11] In making its decision, the Board has had regard to the documents identified above and relied extensively on the Joint Statement.

Regulation 32

19 Regulation 32 of the Regulations provides that the IMO may apply to the Board for orders under Regulation 33 if it considers that there has been a breach of the Market Rules.

20 The Board is permitted by Regulation 33 to make an order that the participant pay a civil penalty, where the provision contravened is a civil penalty provision. The Schedule to the Regulations stipulates that Rule 7A.2.17 is a civil penalty provision and that the maximum penalties are $50,000 for a first offence and $100,000 for a second offence.

10 Regulation 33(4) requires the Board, before making an order, to have regard to all relevant matters, including the following specific considerations:

(a) the nature and extent of the contravention;

(b) the circumstances in which the contravention took place;

(c) the nature and extent of any loss or damage suffered as a result of the contravention;

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[7] Merz was an expert witness retained by Vinalco.

[8] Managing Director of RnP Corporate Advisory, engaged by the Authority through Geoff Brown and Associates to provide advice and retained as an expert witness by the IMO.

[9] Chief Economist of the Authority.

[10] The Joint Experts Report was prepared pursuant to directions made by the Board on 31 October 2016.

[11] *Energy Arbitration and Review Act, 1998*, s 57(1).

(d) whether the participant has previously been found by the Board in proceedings under the Act to have engaged in any similar conduct; and

(e) the consequences of making the order.

21 It is convenient to deal with these topics in turn.

Nature and extent of the contravention

22 The IMO contended that Vinalco contravened Rule 7A.2.17 of the Market Rules by submitting the Balancing Submissions in the First and Second Periods.

23 Rule 7A.2.17 provides:

> Subject to clauses 7A.2.3, 7A.2.9(c) and 7A.3.5, a Market Participant must not, for any Trading Interval, offer prices in its Balancing Submission in excess of the Market Participant's reasonable expectation of the short run marginal cost of generating the relevant electricity by the Balancing Facility, when such behavior relates to market power.

24 In order to understand the operation of this provision it is necessary to describe some aspects of the system in which Rule 7A.2.17 arises and to explain some of the expressions used in it.

25 The Market Rules, of which Rule 7A.2.17 forms part, govern the operation of the wholesale electricity market ("WEM"). The WEM is a mechanism by which market participants may buy and sell, on a wholesale basis, electricity and generation capacity relating to the SWIS. The WEM is, in effect, an electricity clearing house.

26 The SWIS is the largest interconnected electricity network in Western Australia. It covers most of the Southwest of Western Australia. Vinalco was, and is, a "Market Participant" within the meaning of that expression in the Market Rules and is registered as a Market Generator.

27 There are a number of mechanisms in the WEM by which market participants may transact with each other, including the Short-Term Energy Market ("STEM") and the Balancing Market. Transactions occur by reference to "Trading Intervals", which are the 48 half hour periods, commencing at 8am, into which each day is divided.

28 The STEM is, in effect, a daily auction by which the price for wholesale electricity for the next day is determined. The process also determines the amount of electricity which market participants are cleared to purchase and sell.

29 The Balancing Market operates in tandem with the STEM. It provides for the settlement of differences between the contracted positions arrived at by the day-ahead STEM and the actual electricity generated and dispatched by the Market Generators and therefore consumed by the market customers within each Trading Interval. The Balancing Market is also an auction based system.

30 Each of Vinalco's 4 units was a "balancing facility" within the meaning of that expression in the Rules. Vinalco was required by the Rules to submit balancing submissions to the IMO by 6pm on the day before each Trading Day in respect of each balancing facility. A balancing submission is, in effect, an offer to supply additional electricity, if required, to "balance" the supply and demand for electricity. A balancing submission must be made in respect of each of the 48 Trading Internals of each relevant trading day. For each Trading Interval, the balancing submission must identify the quantity of electricity which the Market Generator is offering, and its price in dollars per megawatt-hour ("$/MWh").

31 A contravention of Rule 7A.2.17 only occurs if the conduct "relates to" market power. Vinalco accepted[12], for the purposes of settling these proceedings, that it had market power during the First and Second Periods and that the relevant market was the Balancing Market.[13]

32 Rule 7A.2.17 refers to the "short run marginal cost" or "SRMC" of generating the relevant electricity. This expression is not defined in the Rules. The Authority expressed the view that marginal cost is a well-established concept in economics[14] and may be defined as being the cost of producing one more unit of output, in this case, electricity. Issues relating to the SRMC are discussed in greater depth below. For present purposes, it is sufficient to

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[12] Joint Statement at [186] and [192]

[13] Joint Statement at [186] and [192].

[14] The Authority's First Investigation Report at page 26 referenced Nicholson, W and C. Snyder, Microeconomic Theory: Basic Principles and Extensions, 10th Edition, South-Western: Cengage Learning, 2008., p231

note that the SMRC does not include all costs which a Market Generator might incur in producing electricity. The SRMC does not, for example, include an allowance for plant maintenance.[15]

33 Rule 7A.2.17 does not impose an absolute prohibition on offering prices which are above the reasonable expectation of the SRMC. A contravention only occurs when the pricing above SRMC "relates" to market power. The Rules do not provide a definition of when pricing "relates" to market power.

34 In its Investigations, the Authority identified circumstances in which pricing by Vinalco above the SRMC would *not* relate to market power. First, the Authority recognized that pricing at the SRMC would not cover costs, so that a Market Generator without market power would decline to provide electricity at a price which did not cover its costs. However, a Market Generator would provide electricity at a cost which covered its avoidable variable costs ("AVC"). Second, the Authority also took the view that pricing that was unrelated to market power would take into account the Theoretical Energy Schedule ("TES"). The TES is an adjustment made under Rule 6.17.3, which determines the theoretically optimal generation schedule. In practice, it takes into account (ie does not pay for) energy a market generator could not have avoided producing anyway. Third, the Authority proceeded on the basis that prices offered in balancing submissions did not relate to market power where those prices did not exceed the "competitive" prices. The Authority took the view that the Vinalco's competitive prices could be ascertained by considering the prices that Vinalco would have offered and received under a long-term supply contract it had with another market participant.

35 Having regard to these matters, the Authority concluded in its Investigations that, during the First Period, four prices offered by Vinalco were above the Vinalco's reasonable expectation of SRMC: $120/MWh, $150/MWh, $304.95/MWh and $305/MWh. It concluded that those prices were above the TES adjusted AVC price and above the price

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[15] Joint Statement at [156].

Vinalco could get under its long term supply contract. It concluded that these prices, which were offered on a total of 218 Trading Intervals, related to market power.

36 The Authority concluded that, during the Second Period, the two prices offered by Vinalco, $305/MWh and $243.62/MWh, were both above Vinalco's reasonable expectation of the SRMC. These prices were offered in respect of a total of 2,611 Trading Intervals and again, were found by the Authority to be above the TES adjusted AVC price and above the price Vinalco could have potentially received under its long term supply contract.

37 Vinalco admitted that the Balancing Submissions, as identified by the Authority, contravened Rule 7A.2.17.

38 Although Vinalco priced above its reasonable expectation of the SRMC in respect of a number of Trading Intervals, it was agreed between the parties that there were in fact just two contraventions; the first relating to the balancing submissions made in the First Period and the second relating to the balancing submissions during the Second Period. This reflects the approach taken by the Courts to contraventions in other similar legislative contexts in which there is a course of conduct.[16] The Board is satisfied that it is not appropriate to treat each individual balancing submission made during the two periods as separate contraventions. The individual balancing submissions made during each of the two Periods were not the result of a separate, considered decision as to pricing. Each was the implementation of more general pricing behaviour. There was no natural break in the conduct within the two Periods. For these reasons, the Board accepts that it is appropriate to proceed on the basis that there were only two contraventions of Rule 7A.2.17.

39 The Joint Statement recorded that the parties agreed that there was no evidence that Vinalco deliberately misused market power during either the First Period or the Second Period.[17] The lack of deliberate intent to abuse market power is an important factor in favour of a nominal penalty.

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[16] See *Australian Competition & Consumer Commission v Telstra Corporation Limited* (2010) 188 FCR 238; [2010] FCA 790

[17] Joint Statement at [233].

The circumstances in which the contraventions took place

40 It is convenient to consider the circumstances in which the contraventions took place by reference to the following:

(a) system stability;

(b) order of merit; and

(c) the SRMC.

System stability

41 The contraventions occurred in the context of the failure of two critical transformers at the Muja AB terminal.

42 The Muja AB terminal (not to be confused with the Muja AB power station) is one of the largest terminals in the SWIS. It provides significant generation connections and connections with SWIS transmission lines to neighboring regions at multiple voltage levels. This part of the SWIS is designed so that an 80% peak load can be maintained following the occurrence of two "contingencies".

43 The first transformer failure occurred on 11 September 2012. It resulted in a loss of direct connection between 330kv and 132kV systems at the Muja AB terminal. Then, on 23 February 2014, an unrelated fault occurred on a second transformer. These two events were contingencies allowed for in the design of the SWIS. If there had been any more such contingencies, the SWIS could not have maintained an 80% peak load.

44 Because of these failures, the Great Southern 132kV network was being supplied through two long 132kV transmission lines. There was a significantly increased risk of high voltage and voltage instability in this 132kV network, and there was limited ability to control it. There was additionally a significant risk of line thermal overloads in the Bunbury 132kV network if something else went wrong. Finally, there was also a significantly increased risk of losing 220kV supply to the Eastern Goldfields region in the event of a failure of Bus-Tie Transformer No. 3, which was the last transformer remaining in service at the Muja AB terminal.

45 On 23 February 2014, System Management declared the SWIS to be in a "High Risk Operating State". It sought to dispatch various of Vinalco's generating plants continuously to maintain system stability, in particular in the Great Southern region of the SWIS. It issued a "Dispatch Advisory" with respect to its action to market participants.

46 As at 23 February 2014:

(a) Vinalco's plants were not fully operational. The Muja AB plant had been built in the 60s and had been retired in 2007, some 40 years later. After the Varanus Island explosion, steps were taken to repair, refurbish, and recommission the Muja AB plant. Muja G4, G3 and G2 had been declared capable of meeting their nominal capacities on 11 February 2013, 1 April 2013, and 31 January 2014 respectively but had been mothballed pending commissioning of Muja G1. Muja G2 also had a problem with its boiler feed water system;

(b) Muja G1 had been refurbished, but had not yet been declared able to meet its capacity credit obligation. (That declaration occurred on 26 February 2014.) The units take 3 days to move from a mothballed state to a state in which they can safely be synchronized into the SWIS; and

(c) Muja G1 had suffered a condenser water failure which caused the unit to fail.

Even after the units had been declared capable of meeting their capacity credit obligations, it was considered undesirable to stop and start the units because that would lead to reliability issues and difficulties in coordinating the startup times of the units.

47 In light of the failure of the second transformer, and in response to notification from System Management, Vinalco altered its commissioning activities in order to bring forward the date that Units G1 and G2 could satisfy their capacity credit obligation and thus provide the necessary support to the system. The Board accepts that the units likely would not have been operating during the period February to June 2014, but for the two transformer failures and the consequential dispatch instructions from System Management.

48 The Board also accepts that complying with System Management's dispatch instructions during the two periods required Vinalco to operate its plant in ways that were outside its

standard operating profile, which increased the risk of equipment failure and damage.[18] The continuous operations required of Vinalco during the two periods appear to have placed additional demands upon its personnel.

49 Vinalco also contended,[19] and the Board accepts, that it operated its units in high security mode during the two periods, which involved running backup sets of ancillary equipment, eg two sets of fans, two boiler feed pumps etc. This increased the security of the system by reducing risk that an equipment failure would disable the unit but added to Vinalco's operational costs.

50 Vinalco's services were needed in maintaining the stability of the great southern region of the SWIS. Vinalco received some payment for these unusual services, which is discussed more below, and Vinalco had an interest in maintaining the stability of the system. However, at all times Vinalco responded positively to the transformer failures. It did so, notwithstanding its expectation that it was likely to lose money and increase its risk profile by doing so. This is a strongly mitigating factor in assessing penalty.

Order of merit

51 Ordinarily, Market Generators providing balancing submissions are dispatched by System Management in their economic order of merit, that is to say, in accordance with the price competitiveness of their balancing submissions. System management will dispatch low priced balancing submissions before higher priced submissions are dispatched in accordance with a balancing merit order ("BMO")[20] provided by the IMO to System Management following the IMO's auction process. The system may be seen as an ongoing auction, with bids put in the day before and demand for electricity varying in real time. Dispatch instructions are mostly issued to generation facilities automatically by System

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[18] Vinalco's strategy was to operate the Muja AB units as "mid merit" generators, cycling between minimum and maximum load on a daily basis to meet its bilateral contract obligations.

[19] Joint Statement at [132], Gower statement at [35].

[20] The BMO supplied to System Management by the IMO is in the form of an order of dispatch exclusive of prices

Management's Real-time Dispatch Engine ("RTDE"), following the principle outlined above.

52 A generation facility may be "in-merit" during one Trading Interval, but become "out-of-merit" in a subsequent Trading Interval. If this occurs, the facility will, ordinarily, be instructed to dispatch zero electricity into the system (a "zero MW Dispatch Instruction") and therefore proceed to ramp-down its output.

53 System Management may dispatch a generation facility "out of merit", that is to say, in circumstances where the generation facility's price is higher than the highest "in merit" generation facility. Where this occurs, the particular generation facility is said to be "Constrained-on". In the circumstances prevailing immediately after the second transformer failure, System Management wanted Vinalco to generate and supply electricity into the SWIS, whether it was "in merit" or not. It was to be "Constrained-on".

54 A complication in these circumstances is that it is not possible to turn a generating facility on and off like a light bulb. It is more like stopping and starting an ocean-going liner. Each of Vinalco's Muja AB units had a maximum generation capacity of 55MW, a minimum generation capacity of 27.5MW and a ramp up rate of 1MW per minute. It would take about half an hour to increase the production from 27.5MW to 55MW and the same time to ramp down to 27.5MW again. Below 27.5MW the plant would be shut down.

55 It in this context, a problem may have arisen if Vinalco had put in a balancing submission where it was "in-merit" during a particular Trading Interval, but fell "out-of-merit" subsequently. During the First Period, the RTDS could not be instructed to automatically Constrain-on Vinalco, if it fell out of merit. The RTDS would have automatically sent Vinalco a zero MW dispatch instruction if it fell out of merit. It takes 3 days to "cold start" one of Vinalco's units. Seventeen hours is required for a warm start. It takes a day to synchronise the unit with the SWIS. There were also concerns that the plant was unreliable on start up. Had Vinalco complied with such a zero MW dispatch instruction and ramped down to zero MW, as required by the Market Rules, the power reliability and quality in the

Great Southern region of the SWIS would have been at risk under certain circumstances[21], possibly leading to power failures.

56 The possibility of an automated zero MW dispatch instruction was discussed between System Management and Vinalco at the time. System Management would have had to manually override such an instruction. System Management told Vinalco's operators to contact System Management if a zero MW Dispatch Instruction was received before taking action to ramp down. However, there was a concern that Vinalco might have received and acted upon an (automated) instruction to dispatch zero electricity to the SWIS, notwithstanding. Given the periods of time taken to ramp the units back up once they had been shut down, this might have had substantial adverse consequences for power supply and voltage stability in the Great Southern region of the SWIS in particular and perhaps more broadly.

57 Mr Paul Gower, the General Manager Operations of Vinalco, provided a witness statement dated 26 April 2017. He identified three options for the preparation of balancing submissions after the first transformer failure:

(a) bid with prices well below the forecast margin price;

(b) bid at the estimated short run marginal cost, except where there was a risk that such bids would be in merit, in which case bid at higher prices, to ensure that Vinalco remained out of merit at all times. Three prices were identified in this context $74/MWh, $243 MWh and $305MWh; and

(c) bid at the estimated SRMC at all times.[22]

58 Mr Gower stated that he chose the second option as it would provide the service being asked for by System Management, was commercially satisfactory (to Vinalco) and would not lead to Vinalco being perceived as responsible for blackouts in the Great Southern region. It may be accepted that the second option carried a lower risk of disruption to

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[21] Economic Regulatory Authority, First and Second Investigation Reports, section 2.3, paragraph 4, Applicant's Discovery Bundle, Volume 3 at [84].

[22] At [37] to [42].

electricity supply than the third option and that Vinalco was motivated by a desire to sustain system stability and reliability support for the Great Southern region and therefore the need to mitigate the risk of being dispatched to zero MW.

59 The strategy adopted by Vinalco must also been seen in light of the fact that, in general,[23] all "in merit" Market Generators are paid the same price, which is the lowest possible clearance price applicable for the last increment of energy supplied for that particular Trading Interval. This is known as the Balancing Price. The Balancing Price may be significantly above the offer price of some of the "in merit" Market Generators. Vinalco's operating strategy prior to 23 February 2014 was to put in balancing submissions at the market floor price of -$1,000/MWh to ensure that they would be in merit and therefore be dispatched.[24] This strategy would have enabled it to meet its obligations under long term contract. Conversely, Market Generators whose balancing submissions were out-of-merit would not be dispatched, and of course, would not receive any payment for providing electricity under their balancing submissions. On occasions, Vinalco priced at the market maximum price of $305/MWh to avoid being dispatched, either where it "cycled" its units or had subcontracted its obligations.[25] This was done by other Market Generators as well.[26] Obviously, bidding at the market floor was below the SRMC and, presumably, bidding at the maximum price in these circumstances was not seen as being related to market power. These practices evidence the use of pricing balancing submissions to manipulate the merit order and thereby ensure that a Market Generator was in or out of merit order for legitimate commercial reasons.

60 Vinalco contended[27] that it was instructed by representatives of System Management to price its balancing submissions so as to remain out of merit at all times. The Authority's investigation did not identify material which supported this contention and it was denied

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[23] This is discussed further at [70] to [72] below.

[24] Joint Statement at [65].

[25] Joint Statement at [65].

[26] Joint Statement at [65].

[27] As part of the First Investigation – see footnote 88 in the Joint Statement.

by System Management. The Board is not prepared to make a finding that Vinalco received explicit instructions from System Management to this effect.

The SMRC

61 The contraventions during the Second Period were associated with a different source of system instability, again in respect of the Great Southern region: a planned maintenance outage of the Worsley Co-Generation Plant. The Worsley Plant is a major base load generator in the SWIS and makes a significant contribution to power system security and reliability in the region. System Management decided to increase the generation dispatch requirement of Vinalco's plants during the period that the Worsley Plant was out of action, providing additional base load power. This enabled System Management to avoid declaring, for a second time, a High-Risk State in the Great Southern Region.

62 By the Second Period, the RTDS had been enhanced, so that it reliably did not issue zero MW Dispatch Instructions to Vinalco when Vinalco was constrained on. The issues described at [55] and [56] above did not arise.

63 Mr Gower stated that he made efforts to make balancing submissions that reflected the SRMC and complied with Rule 7A.2.17, in both the First and Second Periods.[28]

64 "Short run marginal cost" is not a term which is defined in the Rules. The Authority concluded that SRMC excludes avoidable fixed costs. In assessing the SRMC, the Authority excluded the costs of routine operations and maintenance, ancillary expenses, some shared services and mill maintenance. The Authority also excluded other input costs which Vinalco had identified as components of the SMRC. As part of the preparation of the case, Vinalco provided expert evidence from Merz. Merz identified some 10 items which it considered ought to be included in the calculation of the SMRC, particularly where units are being dispatched on a continuous basis over lengthy periods of time. The Authority did not include these items in its assessement of the SRMC. Without accepting that Merz's categorization was correct in every respect, it is apparent that the calculation of the SMRC was a complex issue about which reasonable minds could differ.

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[28] Gower witness statement at [48] to [72].

65 It was difficult for Vinalco to calculate accurately the SRMC for the operation of each unit when lodging its balancing submissions. Prior to the First Period, Vinalco's plan was not to operate its facilities at all until all four units had been commissioned. Vinalco's strategy when generating was to submit balancing submissions at the market floor.[29] Such submissions would not require Vinalco to calculate its SRMC. Vinalco did not have extensive operational staff and did not have trading staff. Vinalco had entered into a shared services agreement with Synergy pursuant to which Synergy provided services; the costs of which impacted on the SRMC but which were not broken down in a manner suited to calculating an SRMC. There were also issues between Vinalco and Synergy about the amount of Synergy's charges, which meant that Vinalco, at least, did not regard those charges, and hence its costs, as fixed definitively.

66 Further, the fact that Vinalco was to provide balancing services while being constrained on significantly complicated the calculation of the SRMC. Vinalco was not in the position of being able to determine its mode and duration of operation and make balancing submissions which reflected them. At various times, System Management required Vinalco to dispatch 45MWh, 30MWh and 27MWh into the SWIS. Because of limitations in the mode of operation of Vinalco's plant and concerns about the unit reliability, the method by which the units were to operate was changed from time to time, particularly in relation to the Second Period. In practice, the SRMC varies depending on the level of output from a generating unit. These matters all affected the calculation of the SRMC.

67 In its investigations, the Authority accepted that a Market Generator, when Constrained-on would take into account the TES adjustment when assessing its likely compensation and therefore its pricing for the purposes of Rule 7A.2.17. The TES is affected by the manner in which a Market Generator's facilities are operated. As indicated above, System Management's instructions to Vinalco about how its units were to operate changed from time to time. The TES is also dependent upon Balancing Prices which are unknown at the time balancing submissions are made. This uncertainty would have further limited the

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[29] Joint Statement at [65].

availability and forecast reliability of some input data and complicated the calculation of the SMRC.

The nature and extent of any loss or damage suffered as a result of the contravention.

68 Regulation 33(4) of the Regulations requires the Board to consider the nature and extent of any loss or damage suffered as a result of the contraventions. This involves comparing what happened with what would have happened if the contraventions had not been committed.

69 It is important to bear in mind that Vinalco was not responsible for the two transformer failures or for the planned outage of the Worsley Co-generation facility. These events reduced the stability of the SWIS and required the provision of replacement generation services into the SWIS to maintain voltage stability and system reliability, particularly in respect to the Great Southern region. The provision of these extraordinary services, irrespective of how they were procured might be anticipated to have involved additional cost and expense to all energy users over the relevant periods. Vinalco is not responsible for these additional costs or any resulting impact on the price of electricity supplied through the SWIS.

70 As mentioned above, the price per megawatt hour paid for electricity provided pursuant to a balancing submission for a given Trading Interval is the lowest price at which supply and demand of electricity in the interval is balanced. In addition to the Balancing Price for the energy supplied, the Balancing Settlement Amount may include an additional amount, the "Constrained-on Payment".[30] Vinalco was Constrained-on during the whole of the two periods in order to maintain power system stability and was entitled to the Constrained-on Payment. The Constrained-on Payment is calculated by multiplying the difference between the Market Generator's offer price and the Balancing Price by the amount of electricity produced by the Market Generator that is attributable to it being constrained on, taking into account the TES.

71 The formula, for any particular trading period is:

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[30] Rule 6.17.3 of the Market Rules.

$$BSA = (BP \times MBQ) + [(B - BP) \times ConQN]$$

Where:

BSA is the Balancing Settlement Amount

BP is the Balancing Price

MBQ is the metered quantity of balancing electricity

B is the price bid by the Market Generator

ConQN is the amount of power attributable to being constrained on.

72 The effect of a Market Generator being Constrained-on is that the Market Generator receives its full bid price in respect of the power that is generated as a result of it being constrained on (subject to the TES). Because Vinalco was Constrained-on for each of the Trading Intervals the subject of these proceedings, the price identified in its balancing submissions did affect the amount it was paid. The amount it was paid was more than it would have been paid had it submitted prices at the SRMC or at the prices considered by the Authority to be "competitive prices".

73 The Board was not provided with calculations showing the difference between what Vinalco was actually paid and what it would have been paid had Vinalco not contravened Rule 7A.2.17. No doubt such a calculation would be difficult. The parties indicated that this counterfactual calculation could not be done without a hearing resolving the differences between the experts about the SRMC. The threshold "competitive price", below which a balancing submission does not relate to market power is similarly uncertain and is different from the SRMC. Finally, the balancing submissions made by Vinalco might well have affected the Balancing Price and the TES.

74 The IMO did not allege and the Board was not provided with any evidence that the price paid by members of the public increased as a result of the Vinalco's conduct the subject of these proceedings.

75 On 24 July 2014, Vinalco wrote to the IMO providing information about its under and over recovery of costs during the two Constrained-on out of merit periods. That material showed that Vinalco made a loss of $744,000 during the First Period and a gain of $876,800 during

the Second Period. The net gain over the two periods is not great and should be seen in conjunction with Vinalco's reported loss of $1,055,904 in the interim period of April 2014, when Vinalco was also constrained-on out of merit.[31] The letter of 24 July 2014 was prepared shortly after the Second Period. The Joint Statement asserted that the reported figures should be treated as an estimate only. The letter of 24 July 2014 did not take into account all the costs Vinalco incurred in being Constrained-on. Costs such as the costs having of a spare unit "on" and available for a "warm start", the costs of start-up and the costs of running in high security mode were not included.

76 Vinalco provided evidence from Merz about the amount of revenue that Vinalco would have received had it priced at what Merz considered to be Vinalco's reasonable expectation of the SRMC. Merz's opinion was that Vinalco received $2.76 million less than it should have received. The IMO did not accept this calculation, but it did accept that the costs identified by Vinalco in its letter of 24 July 2014 were likely to have been understated and that, in all probability, Vinalco made a loss during the first and second periods as a result of its being constrained on. It appears that, if Vinalco had priced in accordance with the Authority's approach to the SRMC, it would have made more of a loss than it did.

77 A fundamental aspect of the SRMC is that, by definition, it does not include a component in respect of risk or profit. At the time, Vinalco requested that either Western Power or System Management respectively enter into a network control services contract or an ancillary services contract with it. System Management took the view that Vinlaco's units operating continuously Constrained-on out of merit was the most appropriate solution, consistent with the Market Rules, to provide the necessary stability. The effect of System Management's conduct was that Vinalco was required to provide the whole of its output during the two extended periods by way of balancing submissions calculated by reference to pricing criterion which did not include a component for risk or profit and did not even represent its total costs. Had a services contract been negotiated at arms' length, one would have anticipated that it would reasonably have included components for risk, costs and profit. The amount that would have been paid to Vinalco under a commercial arrangement

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[31] Gower Witness Statement at [83]. During May 2014, the units were not constrained-on.

would have been greater than the amount that was actually paid. Finally the parties agreed[32] that the pricing mechanism provided for in clause 7A.2.17 of the Market Rules is not an appropriate mechanism for Constrained-on out of merit Dispatch Instructions to a mid-merit coal plant over a significant number of Trading Intervals.

78 Market generators are rarely constrained-on-out-of-merit for as long as Vinalco was during the First Period and the Second Period. [33] The Authority stated in its Investigation Reports that forcing market generators to accept a loss on their short-run costs, which occurs under the Authority's strict economic definition of SRMC, is inconsistent with investment that minimises costs in the long run.[34] It would also reasonably be considered inconsistent with the objective as stated at rule 1.2.1 (d) of the Market Rules, which is to minimise the long-term cost of electricity supplied to customers from the SWIS.

Previous contraventions

79 Vinalco has not previously contravened the Rules.

The consequences of making the order

80 The principal object of a pecuniary penalty provision is specific and general deterrence.[35]

81 However, the circumstances in which the contraventions arose were very unusual. The condition of the SWIS imposed a degree of urgency, even emergency, on the parties. The contraventions only occurred in response to that situation and are not alleged to have been an aspect of Vinalco's usual method of operation. As indicated above, Vinalco's strategy involves making balancing submissions at the market floor.

82 Vinalco cooperated fully with the Investigations by the Authority.

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[32] Joint Statement at [234]

[33] Joint Statement at [232(b)].

[34] First Investigation Report at p 2078; Second Investigation Report at p 2180.

[35] *ACCC v Dimmeys Stores* [2011] FCA 372 at [32], *NW Frozen Foods v ACCC* (1996) 71 FCR 285 at 293, *ACCC v TPG Internet Pty Ltd* (2013) 250 CLR 640; [2013] HCA 54.

83 Vinalco is due to be shut down no later than September 2018. It will not be in business much longer. There is not, therefore, a long-term need for its behavior to be constrained by the threat of a further substantial penalty.

84 The general need for a penalty to deter future contraventions does not require the imposition of a significant penalty in this case.

Costs

85 The IMO initially sought an order that Vinalco pay IMO's costs but did not maintain that position and was content for no order to be made as to costs. No application was made under Regulation 6 of the *Electricity Industry (Arbitrator and Board Funding) Regulations 2009* for an order that the parties, or one of them, pay the costs and expenses of the determination of the proceedings.

86 There will be no order as to costs.

Conclusion

87 In light of the matters set out above, the Board considers that a substantial penalty is not warranted. The Board considers that a penalty of $1,000 in respect of the first period and $1,500 in respect of the second period are the appropriate penalties.

Date: 30 August 2017

DS Ellis
Presiding Member
For the Board