

**AEMO Directions to Participants
in South Australia
in March 2020**

28 August 2020

IES Ref 6519

Final Determination Report

Disclaimer

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Executive Summary

IES has been appointed by AEMO as independent expert to assess claims for additional compensation related to *directed* services provided by a directed participant referred to herein as the Claimant.

At 1200hrs, 02 Mar 2020, at HYTS 500kV CB210 tripped during a prior outage of the MOPS – MLTS No 2 500 kV Line, resulting in the separation of SA region from Vic Region. At 2005 hrs SA Island was successfully re-synchronised to Vic region via HYTS 500kV CB210. During the separation, a significant number of directions were issued to maintain system strength and security issues. During this period directions were issued in relation to units operated by the Claimant. The directions are summarised in Table 1.

In the opinion of IES, the Claimant has followed a reasonable method and made reasonable estimates supported by invoices for gas costs in determining the amounts in the claims for additional compensation. The Claimant has also supported the estimates of variable maintenance costs and followed an established method to arrive at the estimates. Costs were supported by reference to contracted prices for parts and a reasonable estimate of exchange rates.

On 14 July 2020 IES issued a draft determination. There were no submissions made in relation to the draft determination. The amounts in the draft determination were based on the provisional compensation amounts determined by AEMO. The final determination amounts reflect the settlement amounts calculated by AEMO at the 20-week revision. The final determination amounts have been expressed in units of dollars and cents to avoid rounding issues. The final determined amount of additional compensation is summarised below.

Directed unit	Event number	BW	Net amount claimed	Final determination
PS1	2-1	10	\$ 143,558	\$ 146,794.42
PS1	3-1	10	\$ 245,033	\$ 246,879.49
PS2	3-1	10	\$ 211,185	\$ 211,185.01

Assessment of the claims reconciled the amounts in the spreadsheets with the claimed amounts except for an error in the Claimant’s spreadsheet in calculating the claim amounts for PS1. The final determination corrects the error and results in a compensation amount that is higher than claimed by \$4,668. The details of the variance are provided in Section 3.2.

The directed participant has been informed of this final determination in accordance with the intervention settlement timetable.



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Notes to this report

Units and dollars

Unless otherwise specified:

- Dollars refer to Australian dollars.
- The claim amounts do not include interest payable to the participant.



1 Introduction

IES has been appointed by AEMO as independent expert to assess claims for additional compensation submitted by a *Directed Participant*, herein Claimant, in relation to the directions issued in Billing Week 10.

1.1 Background and direction to participants

At 1200hrs, 02 Mar 2020, at HYTS 500kV CB210 tripped during a prior outage of the MOPS – MLTS No 2 500 kV Line, resulting in the separation of SA region from Vic Region. At 2005 hrs SA Island was successfully re-synchronised to Vic region via HYTS 500kV CB210. During the separation, a significant number of directions were issued to maintain system strength and security issues.

During the separation event, a number of *directions* were issued including to units operated by the Claimant. Claims for additional compensation were submitted by the Claimant related to the *directions* summarised in Table 1.

Table 1 Summary of the *directions*

Directed unit	Event number	BW	Direction	Start	End
PS1	2-1	10	G1 to remain synchronised and follow dispatch targets	02/03/2020 09:00	02/03/2020 12:40
PS1	3-1	10	G1 to synchronise and follow dispatch targets	02/03/2020 14:30	02/03/2020 16:45
PS2	3-1	10	G2 to synchronise and follow dispatch targets	02/03/2020 12:50	02/03/2020 16:10

The remainder of this report is organised as follows:

Section 2 – Description of services and final determination

Section 3 – Claims for additional compensation

Section 4 – Conclusion

Where it is considered important for clarity, terms defined in the National Electricity Rules (NER) have been italicised in the report. Reference to clauses in this report is a reference to the clause in the NER unless stated otherwise.

2 Description of services and final determination

2.1 Description of services provided

The directed services, summarised in Table 1, were to synchronise or remain synchronised and follow dispatch targets. AEMO has determined the DCP in accordance with NER Clause 3.15.7(c) and the Retained Trading Amount in accordance with NER clause 3.15.6 (b) for the additional



energy produced. A Provisional Compensation was calculated as (DP-Retained Trading Amount) in respect of each *direction*. The Claimant has submitted written claims for additional compensation to which it is entitled under NER clause 3.15.7B. The assessment of these claims is discussed in this final determination report.

2.2 Submissions in relation to the draft determination

The Claimant was invited to make written submissions in accordance with the intervention timetable should they wish to do so. There were no submissions made in relation to the draft determination.

2.3 Final determination of the claim for additional compensation

After assessing the claims for additional compensation made by the Claimant, IES has made the following final determination summarised in Table 2. The amounts in the final determination reflect a correction to an error in the Claimant’s spreadsheet, which affected costs for PS1, but otherwise agree with the Claimant’s claimed amounts. The error in the Claimant’s Excel spreadsheet was that the sum formula range did not include the cell containing EOH costs. The total difference across both events 2-1 and 3-1 is \$4,668.25. Further details about the final determination are discussed in Section 3 including details of the correction to the PS1 amounts, refer to Section 3.2.

In order to avoid rounding issues when calculating the final settlement, the draft determination and final determination amounts have been expressed in units of dollars and cents. This resulted in a corresponding rounding adjustment to the draft determination amounts.

Table 2 Claims for additional compensation – draft and final determinations

Directed unit	Event number	BW	Net amount claimed	Draft determination	Change due to 20-week revision	Final Determination
PS1	2-1	10	\$ 143,558	\$ 146,451.08	\$ 343.33	\$ 146,794.42
PS1	3-1	10	\$ 245,033	\$ 246,808.18	\$ 71.31	\$ 246,879.49
PS2	3-1	10	\$ 211,185	\$ 211,185.36	- \$ 0.35	\$ 211,185.01

Note: The determined amounts in the table do not include the amount of interest payable to the directed participant.

The amounts in the draft determination were based on the provisional settlement amount calculated by AEMO. The final determination amounts have been updated to reflect the 20-week revision settlement amounts. Table 3 Shows the provisional and 20-week revision amounts.



Table 3 **Changes to DCP. 20-week revision compared to provisional compensation amounts**

Directed unit	Event number	BW	Direction	DCP provisional	DCP 20-week revision	Add to positive claimed amount
PS1	2-1	10	G1 to remain synchronised	\$ 81,962.75	\$ 81,619.42	\$ 343.33
PS1	3-1	10	G1 to synchronise targets	\$ 48,037.89	\$ 47,966.58	\$ 71.31
PS2	3-1	10	G2 to synchronise	\$ 11,527.60	\$ 11,527.95	- \$ 0.35



3 Claims for additional compensation

3.1 Method used in calculating the amounts claimed

The claims are set out in a letter to AEMO by the Claimant dated 9 April 2020. The claims for additional compensation include amounts due to four items:

- Additional Net Direct Costs (Gas Costs) – per 3.15.7B(a3)(1), plus
- Additional Net Direct Costs (EOH Costs) – per 3.15.7B(a3)(2), plus
- Additional Net Direct Costs (Other Costs) – per 3.15.7B(a3)(6), less
- Compensation for the Energy *direction*.

As these components are common to all the claims they are discussed next followed by a summary of the assessment of the claims.

3.1.1 Additional Net Direct Costs (Gas Costs) – per 3.15.7B(a3)(1)

The method used by the Claimant to calculate gas costs was described as follows:

(a) the calculation of an effective gas price for the relevant gas day – this is a load weighted average gas price of all the gas received on the relevant gas day via the pipelines which can deliver to the power station involved

(b) the calculation of the power station’s generation output (%) while under direction during the relevant gas day (directed generation (MWh) / total generation (MWh));

(c) the calculation of the total quantity of gas (in TJ) burned by the power station in generating on the relevant gas day;

(d) the calculation of the total quantity of gas (in TJ) burned by the power station while under direction during the relevant gas day (the value in paragraph (b) * the value in paragraph (c));

(e) the calculation of the value (\$) of the gas burned by the power station while under direction on the relevant gas day using the effective gas price for that day (the value in paragraph (d) * the value in paragraph (a)); and

(f) the calculation of a gas cost (\$) per MWh generated while under direction for the relevant gas day (the value in paragraph (e) / directed generation (MWh)).

The method as described is implemented in a spreadsheet to derive the cost of gas related to the unit carrying out the direction the *direction*.

Gas costs were supported by invoices.

This is a standard method that in the view of IES provides a reasonable reflection of the gas costs incurred in relation to carrying out the *direction*.

3.1.2 Additional Net Direct Costs (EOH Costs) – per 3.15.7B(a3)(2)

Incremental maintenance costs in connection with the relevant generating unit, (EOH Costs) were quantified in equivalent operating hours (EOH).



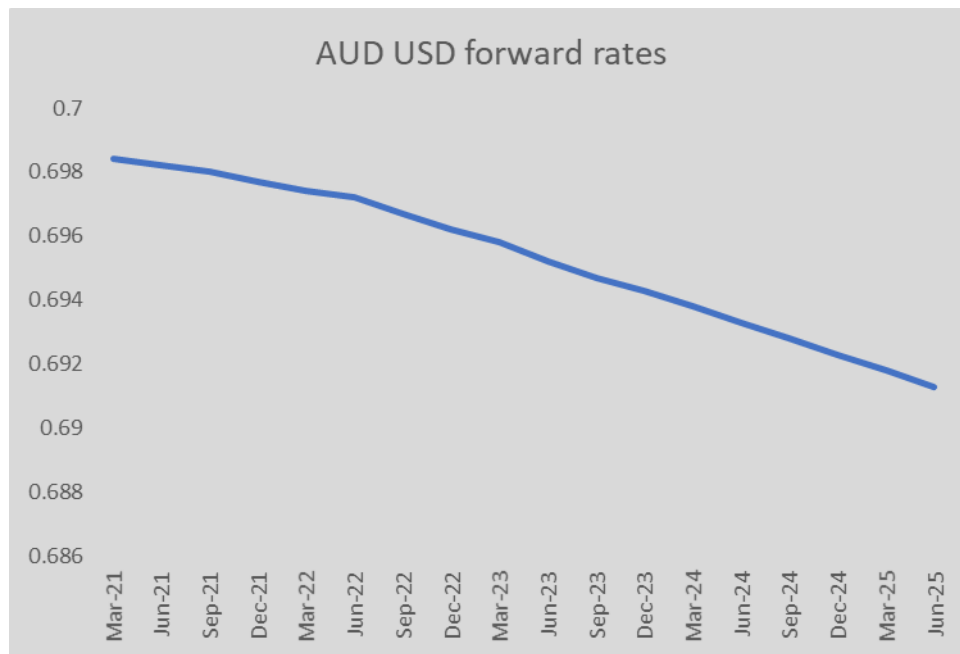
For PS1 and PS2, the Claimant estimated the EOH on a best estimate basis using the following assumptions:

- (a) exchange rate for outages in 2021 and for subsequent outages for parts priced in USD;
- (b) costs for GT parts extracted from contractual documentation;
- (c) overall outage costs used for the period 2021-2030 over 6 cycles (3 cycles per GT); and
- (d) costs for the ST outages based on historical estimates

The costing methodology using EOH estimated over a cycle or number of cycles is an established method in the industry. The costs for PS2 include 10 effective EOH for start-up based on EOM recommendation. The O&M costs are based on historical data from the past 10 years adjusted up to and including 2019.

IES requested further supporting information from the Claimant regarding the calculation of EOH costs and the derivation of the assumptions used. In this information, the Claimant explained how the exchange rate was arrived at. Further the rate for 2021 is not relevant for PS1 as the parts subject to the exchange rate relate to work to be done later than 2021. To assess the reasonableness of the exchange rate for the future dates, IES obtained publicly available forward rates from CME, an established exchange, shown in Figure 1. The chart shows that forward rates are below the estimate used. This implies that the Claimant’s assumption does not overstate the cost in Australian dollars.

Figure 1 AUD USD forward rates



Source: https://www.cmegroup.com/trading/fx/g10/australian-dollar_quotes_settlements_futures.html
SETTLE column accessed on 9 July 2020.



In the further information the Claimant provided support for the EOH estimate for both PS1 and PS2. The estimate is based on historical cost data of variable O&M. The method and justification lead IES to be of the view that the EOH amount used by the Claimant represents a reasonable estimate. Further relevant detail is discussed in Sections 3.2 and 3.3.

3.1.3 Additional Net Direct Costs (Other Costs) – per 3.15.7B(a3)(6)

The Claimant included in its claim for additional compensation an amount to recover the FCAS charges it incurred due to carrying out the *direction*. The Claimant stated in the letter to AEMO dated 9 April 2020 that these charges would not have been incurred by PS1 and PS2 had they not been directed. These charges are calculated in Excel spreadsheets provided by the Claimant with reference to the FCAS recovery amounts charged during the period of the *direction*. The calculations implemented by the Claimant reflect the portion of charges related to the output under direction. In the view of IES the calculations reasonably reflect the costs incurred as a result of the *direction*.

3.1.4 Compensation for the Energy direction

The compensation to which a directed participant is entitled (DCP) in the case of a direction for the provision of energy is specified in 3.15.7(c). This is based on a formula where, simply put, the price is the 90th percentile of prices for energy a year immediately preceding the trading day of the *direction*. This amount has been subtracted from the sum of the foregoing three amounts and the net difference represents the amount claimed by the Claimant.

3.2 Claims relating to directions issued to PS1 in billing week 10

The claims relating to the directions issued to PS1 are summarised in Table 4.

Table 4 Summary of claims in billing week 10 – PS1

Event number	EOH Cost	Total Fuel Cost	FCAS Recovery	Total Costs ¹	Total Compensation	Net Cost Claimed ²	Final Determination
2-1	\$ 2,893	\$ 49,177	\$ 176,344	\$ 225,521	\$ 81,963	\$ 143,558	\$ 146,794.42
3-1	\$ 1,775	\$ 28,864	\$ 264,206	\$ 293,071	\$ 48,038	\$ 245,033	\$ 246,879.49
Total amount						\$ 388,591	\$ 393,673.91

Note 1: The amounts shown in the Total Costs column reflect amounts included in the Claimant's claim.

Note 2: Net Cost Claimed = Total Costs less Total Compensation

The amounts in the Total Costs column of Table 4 do not include the EOH costs due to an error in the Claimant's spreadsheet. The sum formulas in cells K5 and K6 in the 'Summary' tab of the Excel file corresponding to PS1, exclude cells H5 and H6. Cells H5 and H6 include the corresponding EOH costs. Including these costs increases the Total Costs associated with Events 2-2 and 3-1, shown in Table 4, to \$228,413.83 and \$294,846.07 respectively. The amounts in the Final Determination column reflect this correction. The total difference due to the correction is



\$4,668.25. The final determination amount incorporates the correction as well as the updated settlement amounts calculated in the 20-week revision.

The NER, version 132 current at the time, clause 3.15.7B(a) provides the opportunity for a *Directed Participant* that is entitled to compensation under 3.15.7 to make a written submission to AEMO within 15 business days of receipt of the advice under 3.15.7(e). Clause 3.15.7B(a2) states that the written submission is to be made in accordance with the *intervention settlement timetable*. The EOH cost was included in the spreadsheet provided by the Claimant and, in the opinion of IES, is admissible under the NER because the amount would have been reflected in the written claim but for the spreadsheet error. As discussed in Section 3.1 IES is of the view that the method and supporting data are in keeping with the requirements of NER clause 3.15.7B.

3.3 Claim relating to directions issued to PS2 in billing week 10

The claims relating to the directions issued to PS1 are summarised in Table 5. The final determination amount incorporates the updated settlement amount calculated in the 20-week revision.

Table 5 Summary of claims in billing week 10 – PS2

Event number	EOH Cost	Total Fuel Cost	FCAS Recovery	Total Costs	Total Compensation	Net cost claimed ¹	Final Determination
3-1	\$ 18,533	\$ 18,450	\$ 185,729	\$ 222,713	\$ 11,528	\$ 211,185	\$ 211,185.01
Total amount						\$ 211,185	\$ 211,185.01

Note 1: Net Cost Claimed = Total Costs less Total Compensation

As discussed in Section 3.1, IES is of the view that the method and supporting data are in keeping with the requirements of NER clause 3.15.7B.

There is a discrepancy between the \$/hour amount for EOH stated in the claim letter dated 9 April 2020¹ and the \$/hour amount for EOH included in the spreadsheet showing the calculation of the claim. The Claimant was asked to provide further information relating to the difference in the \$/hour EOH amounts. The Claimant provided supporting data for the \$/hour EOH rate used in the claim calculations. The Claimant also provided a higher (third) rate which, according to the Claimant, includes major outage maintenance cost that was not included in the \$/hour EOH rate in the claim. The NER, version 132 current at the time, clause 3.15.7B(a) provides the opportunity for a *Directed Participant* that is entitled to compensation under 3.15.7 to make a written submission to AEMO within 15 business days of receipt of the advice under 3.15.7(e). Clause 3.15.7B(a2) states that the written submission is to be made in accordance with the *intervention settlement timetable*. In the opinion of IES, the claim for additional compensation that was submitted by the Claimant in accordance with the timeline specified in the NER did not include a claim for major outage maintenance costs. For this reason, IES is of the view that the higher (third) rate cannot be used in determining the compensation for this claim according to the NER.

¹ Refer to the claim letter to AEMO dated 9 April 2020, Part B, Additional Net Direct Costs (EOH Costs) section



4 Conclusion

Claims for additional compensation submitted by the Claimant in relation to services provided in response to *directions* were assessed and a final determination made. In the opinion of IES, the claimant followed a method that is reasonable and in accordance with 3.15.7B. The amounts claimed were reconciled with the Claimants calculations. The final determination incorporates a correction to the amount claimed in the Claimant's letter of 9 April 2020 by \$4,668.25 as well as the updated settlement amounts in AEMO's 20-week revision. The correction is due to an error in the Claimant's spreadsheet made in relation to the claim for PS1 in billing week 10.

