

AEMO Directions to Participants in South Australia

21 February 2022

IES Ref 6681

Final Determination Report

Disclaimer

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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.



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1 Introduction

IES has been appointed by AEMO as independent expert to assess claims for additional compensation submitted by a *Directed Participant* in relation to the directions issued during Billing Weeks 33 to 36 in 2021.

1.1 Background and direction to participants

During billing weeks 33 to 36 AEMO issued directions to maintain the system in a secure operating state. This report presents the assessment of claims made by the directed claimant. The directions associated with the claims that have been assessed are summarised in Table 1 with the information appropriately masked to maintain confidentiality.

Table 1 Summary of the *directions* – assessed claims

Directed unit	Event number	Issued	Effective	Ended	Reason
PS3	15-3	09/08/2021 16:00	09/08/2021 22:30	10/08/2021 17:00	System strength
PS1	15-2	09/08/2021 16:00	09/08/2021 23:00	10/08/2021 17:00	System strength
PS3	16-3	10/08/2021 17:00	10/08/2021 22:00	11/08/2021 16:30	System strength
PS1	16-2	10/08/2021 17:00	10/08/2021 22:30	11/08/2021 16:30	System strength
PS2	19-3	14/08/2021 17:00	15/08/2021 01:00	15/08/2021 17:00	System strength
PS1	19-2	14/08/2021 17:00	15/08/2021 09:30	15/08/2021 17:00	System strength
PS2	20-2	15/08/2021 17:00	16/08/2021 01:00	16/08/2021 13:45	System strength
PS1	22-1	19/08/2021 17:00	19/08/2021 22:00	20/08/2021 17:00	System strength
PS3	22-2	19/08/2021 17:00	19/08/2021 22:30	20/08/2021 16:30	System strength
PS3	23-1	20/08/2021 17:00	21/08/2021 09:30	21/08/2021 17:30	System strength
PS1	23-2	20/08/2021 17:00	20/08/2021 22:30	21/08/2021 17:30	System strength
PS3	26-1	27/08/2021 16:00	28/08/2021 00:30	28/08/2021 17:00	System strength
PS1	26-2	27/08/2021 16:00	28/08/2021 02:00	28/08/2021 17:00	System strength
PS1	24-1	21/08/2021 17:00	22/08/2021 01:00	23/08/2021 17:15	System strength
PS3	24-2	21/08/2021 17:00	21/08/2021 21:00	23/08/2021 17:00	System strength
PS3	27-2	28/08/2021 16:00	29/08/2021 08:30	29/08/2021 15:30	System strength
PS1	28-2	29/08/2021 16:30	30/08/2021 09:00	30/08/2021 17:00	System strength
PS3	28-3	29/08/2021 16:30	30/08/2021 09:00	30/08/2021 17:00	System strength



Directed unit	Event number	Issued	Effective	Ended	Reason
PS1	29-1	30/08/2021 17:00	30/08/2021 22:30	31/08/2021 15:30	System strength
PS3	29-2	30/08/2021 17:00	30/08/2021 23:00	31/08/2021 16:30	System strength
PS3	30-1	31/08/2021 17:00	01/09/2021 09:00	03/09/2021 04:00	System strength
PS1	30-2	31/08/2021 17:00	01/09/2021 09:30	03/09/2021 04:00	System strength

1.2 Description of services provided

The directions issued by AEMO were for the provision of system strength. A directed participant providing system strength (refer to 3.15.7(a2)(4)(iii)) is deemed, for the purposes of 3.15.7(a1), to provide energy. A directed participant that provides energy is entitled to compensation including for "...additional net direct costs incurred by the directed participant...as a result of the provision of the service". Clause 3.15.7B(a3) lists, without limitation, components included in the calculation of additional net direct costs. 3.15.7B(b) states that submissions made must "(1) itemise each component of a claim; (2) contain sufficient data and information to substantiate each component of a claim..."

The claims for additional compensation include amounts due to four components:

- Additional net direct fuel costs (Gas) – per 3.15.7B(a3)(1), plus
- Additional net direct maintenance costs (VOM) – per 3.15.7B(a3)(2), plus
- Additional net direct other costs (FCAS) – per 3.15.7B(a3)(6), less
- The amount calculated as DCP.

AEMO has calculated the compensation amount the directed participant is entitled to receive (DCP) in accordance with National Electricity Rules (NER) Clause 3.15.7(c). The claimant has submitted written claims for additional compensation under NER clause 3.15.7B. The assessment of these claims is discussed in this report.

Where it is considered important for clarity, terms defined in the NER have been italicised in the report. A reference to a clause in this report is a reference to the clause in the NER unless stated otherwise.

The remainder of this report is organised as follows:

Section 2 – Claims for additional compensation by the claimant, and

Section 3 – Submissions on matters in the draft report.



2 Claims for additional compensation

2.1 Summary of assessed claims

The assessed claim submitted by the claimant are summarised in Table 2.

Table 2 Summary of claims – assessed claims

Directed unit	Event No.	Effective	Total Fuel Cost	VOM Cost	FCAS Recovery	Total Cost of Direction	DCP	Additional Compensation Claimed
PS3	15-3	09/08/2021 22:30	\$137,759.47	\$2,244.22	\$286.68	\$140,290.37	\$66,553.89	\$73,736.48
PS1	15-2	09/08/2021 23:00	\$141,049.14	\$2,183.56	\$274.60	\$143,507.29	\$65,444.42	\$78,062.88
PS3	16-3	10/08/2021 22:00	\$120,558.44	\$2,244.22	\$336.25	\$123,138.91	\$67,023.03	\$56,115.88
PS1	16-2	10/08/2021 22:30	\$125,828.11	\$2,183.56	\$331.43	\$128,343.10	\$65,855.46	\$62,487.64
PS2	19-3	15/08/2021 01:00	\$130,184.21	\$1,940.94	\$68.52	\$132,193.68	\$60,514.84	\$71,678.84
PS1	19-2	15/08/2021 09:30	\$63,370.70	\$909.82	\$4.22	\$64,284.73	\$28,100.09	\$36,184.64
PS2	20-2	16/08/2021 01:00	\$103,971.76	\$1,577.02	\$160.73	\$105,709.50	\$47,011.46	\$58,698.04
PS1	22-1	19/08/2021 22:00	\$158,943.60	\$2,304.87	\$231.00	\$161,479.48	\$70,144.94	\$91,334.54
PS3	22-2	19/08/2021 22:30	\$143,419.92	\$2,183.56	\$197.46	\$145,800.94	\$66,084.47	\$79,716.47
PS3	23-1	21/08/2021 09:30	\$53,118.01	\$970.47	\$83.41	\$54,171.89	\$29,678.03	\$24,493.86
PS1	23-2	20/08/2021 22:30	\$140,796.15	\$2,304.87	\$443.11	\$143,544.13	\$70,173.92	\$73,370.21
PS3	26-1	28/08/2021 00:30	\$127,452.94	\$2,001.60	\$358.02	\$129,812.56	\$61,012.60	\$68,799.96
PS1	26-2	28/08/2021 02:00	\$121,305.85	\$1,819.63	\$297.90	\$123,423.38	\$54,827.86	\$68,595.52
PS1	24-1	22/08/2021 01:00	\$320,977.28	\$4,913.01	\$811.91	\$326,702.20	\$150,403.10	\$176,299.11
PS3	24-2	21/08/2021 21:00	\$323,858.31	\$5,337.59	\$913.14	\$330,109.05	\$162,370.00	\$167,739.05
PS3	27-2	29/08/2021 08:30	\$54,878.27	\$849.16	\$76.10	\$55,803.53	\$26,342.43	\$29,461.10
PS1	28-2	30/08/2021 09:00	\$67,421.13	\$970.47	\$53.60	\$68,445.20	\$29,771.58	\$38,673.62
PS3	28-3	30/08/2021 09:00	\$64,195.29	\$970.47	\$53.60	\$65,219.36	\$30,127.91	\$35,091.44
PS1	29-1	30/08/2021 22:30	\$132,506.50	\$2,062.25	\$258.46	\$134,827.21	\$63,582.17	\$71,245.05
PS3	29-2	30/08/2021 23:00	\$130,047.95	\$2,122.91	\$250.34	\$132,421.19	\$63,517.03	\$68,904.16
PS3	30-1	01/09/2021 09:00	\$189,196.56	\$5,216.29	\$393.72	\$194,806.57	\$159,510.13	\$35,296.44
PS1	30-2	01/09/2021 09:30	\$196,694.12	\$5,155.63	\$388.66	\$202,238.41	\$159,181.38	\$43,057.03
Total			\$3,047,533.69	\$52,466.13	\$6,272.86	\$3,106,272.67	\$1,597,230.75	\$1,509,041.93



The components of the claim comprise Fuel cost (Gas), variable operations and maintenance cost (VOM) and recovery of contingency FCAS charges incurred as a result of the units operating in compliance with the directions. The total cost of the direction is the sum of these components. The additional compensation claimed is equal to the latter sum less DCP. The amounts in the claims submitted by the claimant were all rounded to the nearest dollar. The amounts shown in the above table are given in dollars and cents based on the information provided in the supporting information and calculations. IES was provided with a claim for additional compensation submitted by the claimant in which the amount was below \$20,000. Pursuant to the NER this claim for event 31-1 was not assessed by the independent expert and therefore is not included in the above table.

2.2 Calculating the claimed amounts

This Section assesses the claimed amount by examining the method used, correctness of the calculation and supporting evidence for each of the components of net additional costs included in the claim.

2.2.1 Additional net direct fuel costs (Gas) – per 3.15.7B(a3)(1)

The claimant calculated gas costs as follows:

- 1) Calculated the gas volume consumed by the units as the product of the heat rate and energy dispatched while under direction. The heat rate relationship was based on a technical report and the energy quantities were sourced from the dispatch data.
- 2) Calculated a volume weighted average price of gas based on the volumes and prices of the gas supplied to the units while generating under direction. Supporting invoices were provided.
- 3) Gas transportation costs were not claimed as no additional costs were incurred in connection with the directions.

This method in the view of IES provides a reasonable reflection of the gas costs incurred in relation to carrying out the *direction*. However, the following issue is worthy of note.

2.2.1.1 Calculation of the gas volume and cost

There was a spread sheet error in the implementation of the relationship used to calculate the gas volume. The mathematical relationship was set out in the 'HR' tab of the Excel model provided by the claimant and implemented correctly in that tab. However, there was an error in the Excel implementation of the relationship when calculating the gas volumes associated with the electricity dispatched related to the direction (incorrectly placed brackets in the Excel formula). This was corrected during the assessment and the corrected volumes used to calculate gas costs for the determination. The impact of correcting the gas volume on gas cost was relatively small in comparison to the amount claimed. The gas volume correction reduced gas cost by \$1,935.22 relative to the amount in the claim.

2.2.2 Additional net direct maintenance costs (VOM) – per 3.15.7B(a3)(2)

The claim included a component of additional maintenance costs of the directed units. The claimant used a VOM rate based on data from a very old study and indexed that cost by 2.5% for each year from the date of the study to the present. This is not a reliable estimate of VOM



but the claimant could not furnish other supporting data. In view of this we have used the VOM for these units provided in the “2021 Inputs and assumptions workbook” available on AEMO’s website.¹ The workbook expresses the VOM costs in 2021 terms. It is noted that this approach to estimating VOM is essentially the same approach adopted in a recent final determination.² The effect of this adjustment is to reduce the claimed amount by \$13,062.29. This amount has been updated from the amount in the draft determination. The update corrected a spreadsheet error which divided the MWh used in determining the VOM by 2.

2.2.3 Additional net direct other costs (FCAS) – 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 calculated the dispatched energy from the directed units as a percentage of the total energy and applied that factor to the contingency raise costs incurred during the direction period. The energy quantities were supported by dispatch data. Raise contingency costs are charged to generators on the basis of the energy they produce at the time.

Two directions, 20-2 and 24-1 ended at 13:45 and 17:15 respectively. The claimant estimated the FCAS recovery amount as if the directed unit operated for the entire 30-minute trading interval instead of only half of it. A correction was made to reflect this which resulted in a small reduction of \$36.81 in the amount claimed for that component.

In IES’ view this is a reasonable method of attributing these costs to the direction. The claimant’s amounts for this component included in the claim are accepted.

2.2.4 Additional net direct other costs (Transportation) – per 3.15.7B(a3)(6)

Gas transportation costs were not claimed as no additional costs were incurred in connection with the directions.

2.2.5 Additional net direct other costs (Start-up costs) – per 3.15.7B(a3)(6)

Start-up costs were not claimed.

2.2.6 The amount calculated as DCP

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 was calculated by AEMO.

2.3 Summary of the determination

As a result of reviewing the claim submitted by the claimant corrections were made to the gas volume and FCAS recovery as detailed above. The first correction corrected a spreadsheet error in the implementation of a formula in the Excel model. The second correction was a much smaller adjustment which IES considers to be a more reasonable estimate of the FCAS costs incurred in connection with the corresponding directions. The independent expert also

¹ <https://aemo.com.au/en/energy-systems/major-publications/integrated-system-plan-isp/2022-integrated-system-plan-isp/current-inputs-assumptions-and-scenarios>.

² Final Assessment of Additional Compensation for Directions in SA Between February 25th and March 26th, 2021 by the consultancy SLC.



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made what it considered to be a more reasonable estimate of the VOM costs related to the direction. Table 3 summarises the determination based on the above assessment. Following assessment of the claims submitted by the claimant, it is IES' view that the claimant is entitled to an additional compensation amount equal to \$1,494,007.60. This amount does not include any amounts that the claimant may be entitled to in connection with the claim for event number 31-1.

Table 3 Summary of determination – assessed claims

Directed unit	Event No.	Effective	Total Fuel Cost	VOM Cost	FCAS Recovery	Total Cost of Direction	DCP	Additional Compensation determination
PS3	15-3	09/08/2021 22:30	\$137,571.82	\$1,658.13	\$286.68	\$139,516.63	\$66,553.89	\$72,962.75
PS1	15-2	09/08/2021 23:00	\$141,103.16	\$1,630.49	\$274.60	\$143,008.24	\$65,444.42	\$77,563.82
PS3	16-3	10/08/2021 22:00	\$120,393.13	\$1,666.59	\$336.25	\$122,395.98	\$67,023.03	\$55,372.94
PS1	16-2	10/08/2021 22:30	\$125,876.18	\$1,637.55	\$331.43	\$127,845.16	\$65,855.46	\$61,989.70
PS2	19-3	15/08/2021 01:00	\$129,824.09	\$1,503.68	\$68.52	\$131,396.29	\$60,514.84	\$70,881.45
PS1	19-2	15/08/2021 09:30	\$63,396.40	\$698.24	\$4.22	\$64,098.86	\$28,100.09	\$35,998.76
PS2	20-2	16/08/2021 01:00	\$103,739.43	\$1,192.17	\$160.47	\$105,092.07	\$47,011.46	\$58,080.60
PS1	22-1	19/08/2021 22:00	\$159,004.23	\$1,729.61	\$231.00	\$160,964.84	\$70,144.94	\$90,819.91
PS3	22-2	19/08/2021 22:30	\$143,225.00	\$1,629.49	\$197.46	\$145,051.95	\$66,084.47	\$78,967.48
PS3	23-1	21/08/2021 09:30	\$53,043.23	\$731.94	\$83.41	\$53,858.58	\$29,678.03	\$24,180.55
PS1	23-2	20/08/2021 22:30	\$140,850.93	\$1,730.67	\$443.11	\$143,024.72	\$70,173.92	\$72,850.80
PS3	26-1	28/08/2021 00:30	\$127,273.39	\$1,500.95	\$358.02	\$129,132.35	\$61,012.60	\$68,119.75
PS1	26-2	28/08/2021 02:00	\$121,353.00	\$1,348.80	\$297.90	\$122,999.70	\$54,827.86	\$68,171.84
PS1	24-1	22/08/2021 01:00	\$321,107.72	\$3,744.19	\$775.36	\$325,627.28	\$150,403.10	\$175,224.18
PS3	24-2	21/08/2021 21:00	\$323,400.03	\$4,003.25	\$913.14	\$328,316.42	\$162,370.00	\$165,946.42
PS3	27-2	29/08/2021 08:30	\$54,799.06	\$646.61	\$76.10	\$55,521.77	\$26,342.43	\$29,179.34
PS1	28-2	30/08/2021 09:00	\$67,447.72	\$731.74	\$53.60	\$68,233.05	\$29,771.58	\$38,461.47
PS3	28-3	30/08/2021 09:00	\$64,104.21	\$740.49	\$53.60	\$64,898.30	\$30,127.91	\$34,770.39
PS1	29-1	30/08/2021 22:30	\$132,506.50	\$1,552.13	\$258.46	\$134,317.09	\$63,582.17	\$70,734.92
PS3	29-2	30/08/2021 23:00	\$129,871.03	\$1,550.54	\$250.34	\$131,671.91	\$63,517.03	\$68,154.87
PS3	30-1	01/09/2021 09:00	\$188,938.81	\$3,892.31	\$393.72	\$193,224.84	\$159,510.13	\$33,714.71
PS1	30-2	01/09/2021 09:30	\$196,769.38	\$3,884.29	\$388.66	\$201,042.33	\$159,181.38	\$41,860.95
Total			\$3,045,598.46	\$39,403.84	\$6,236.05	\$3,091,238.35	\$1,597,230.75	\$1,494,007.60



3 Submissions on matters in the draft report

In fulfilment of the NER requirements interested parties were invited to make submissions on the matters contained in the draft report in accordance with the intervention settlement timetable. No submissions were received.

