

AEMO Directions to Participants in South Australia

24 August 2022

Final Determination Report

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Notes to this report

Units and dollars

Unless otherwise specified:

- Dollars refer to Australian dollars.
- The claim determination amounts do not include interest payable to participants.



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1 Introduction

IES has been appointed by AEMO as independent expert to assess claims for additional compensation submitted by *Directed Participants* in relation to the directions issued during Billing Weeks 9 to 12 in 2022.

1.1 Background and direction to participants

During billing weeks 9 to 12 in 2022 AEMO issued directions to maintain the system in a secure operating state. This report presents the assessment of claims made by two claimants, Claimant1 and Claimant2. The directions associated with the claims that have been assessed are summarised in Table 1 and Table 2 with the information appropriately masked to maintain confidentiality.

Table 1 Summary of the directions – assessed claims – Claimant1

Directed unit	Event number	Issued	Effective	Ended	Reason
PS3	84-1	26/02/2022 15:15	27/02/2022 2:00	27/02/2022 15:30	System strength
PS3	85-2	4/03/2022 16:00	5/03/2022 7:00	6/03/2022 23:30	System strength
PS2	85-1	4/03/2022 16:00	5/03/2022 8:30	9/03/2022 18:00	System strength
PS3	85-3	6/03/2022 17:00	7/03/2022 9:00	10/03/2022 17:15	System strength
PS2	85-4	9/03/2022 16:45	10/03/2022 8:00	10/03/2022 16:00	System strength
PS2	86-1	10/03/2022 17:00	11/03/2022 8:30	11/03/2022 15:30	System strength
PS3	86-2	10/03/2022 17:00	11/03/2022 10:00	11/03/2022 16:40	System strength
PS2	87-1	11/03/2022 17:00	12/03/2022 7:30	12/03/2022 20:30	System strength
PS3	87-2	11/03/2022 17:00	12/03/2022 8:00	12/03/2022 17:30	System strength
PS2	88-1	12/03/2022 17:00	13/03/2022 7:00	13/03/2022 16:00	System strength
PS4	89-2	17/03/2022 17:00	18/03/2022 11:45	18/03/2022 15:30	System strength
PS4	90-1	18/03/2022 17:00	19/03/2022 8:00	19/03/2022 14:30	System strength
PS2	92-1	22/03/2022 17:00	23/03/2022 0:30	23/03/2022 15:05	System strength
PS3	92-2	22/03/2022 17:00	23/03/2022 8:00	23/03/2022 16:50	System strength
PS3	93-1	23/03/2022 17:00	24/03/2022 8:00	24/03/2022 17:05	System strength
PS4	93-2	23/03/2022 17:00	24/03/2022 9:30	24/03/2022 16:05	System strength
PS3	94-1	24/03/2022 17:00	25/03/2022 7:30	25/03/2022 17:00	System strength



Directed unit	Event number	Issued	Effective	Ended	Reason
PS4	94-2	24/03/2022 17:00	25/03/2022 8:00	25/03/2022 16:00	System strength
PS4	95-1	25/03/2022 15:30	26/03/2022 1:00	26/03/2022 16:45	System strength
PS3	95-2	25/03/2022 15:30	26/03/2022 7:30	26/03/2022 15:30	System strength

Table 2 Summary of the directions – assessed claims – Claimant2

Directed unit	Event number	Issued	Effective	Ended	Reason
PS3	89-4	18/03/2022 9:15	18/03/2022 9:25	18/03/2022 12:05	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 and start-up costs where applicable) – 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 Claimants have 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 – Claimant1,

Section 3 – Claims for additional compensation – Claimant2, and

Section 4 – Submissions on matters in the Draft Determination report.



2 Claims for additional compensation – Claimant1

2.1 Summary of claims by Claimant1

The assessed claims submitted by Claimant1 are summarised in Table 3.

Table 3 Summary of additional compensation claimed – assessed claims - Claimant1

Directed unit	Event No.	Total Fuel Cost	VOM Cost + Start up Cost	FCAS Recovery	Total Cost of Direction	DCP	Additional Compensation Claimed
PS3	84-1	\$83,463.66	\$1,637.67	-\$ 42.66	\$85,058.67	\$57,198.94	\$27,859.73
PS3	85-2	\$277,094.72	\$23,660.51	-\$137.99	\$300,617.24	\$172,589.16	\$128,028.08
PS2	85-1	\$761,524.44	\$28,662.93	-\$1,146.72	\$789,040.65	\$468,880.10	\$320,160.56
PS3	85-3	\$567,156.40	\$28,259.67	-\$1,138.72	\$594,277.34	\$353,991.22	\$240,286.13
PS2	85-4	\$56,153.50	\$12,896.68	-\$47.62	\$69,002.57	\$34,597.05	\$34,405.52
PS2	86-1	\$49,479.10	\$12,807.12	-\$27.66	\$62,258.56	\$30,724.23	\$31,534.33
PS3	86-2	\$46,087.25	\$15,828.61	-\$21.47	\$61,894.39	\$27,308.36	\$34,586.03
PS2	87-1	\$95,723.50	\$13,504.29	-\$78.81	\$109,148.98	\$59,352.41	\$49,796.57
PS3	87-2	\$64,628.59	\$16,264.99	-\$40.15	\$80,853.43	\$40,688.48	\$40,164.95
PS2	88-1	\$74,378.82	\$13,022.72	-\$51.48	\$87,350.06	\$47,283.67	\$40,066.39
PS4	89-2	\$27,510.27	\$14,348.38	-\$100.00	\$41,758.65	\$15,921.81	\$25,836.84
PS4	90-1	\$44,971.27	\$19,975.53	-\$100.00	\$64,846.80	\$27,200.06	\$37,646.73
PS2	92-1	\$114,752.92	\$1,769.09	-\$194.41	\$116,327.60	\$73,112.89	\$43,214.71
PS3	92-2	\$60,936.46	\$19,645.46	-\$96.41	\$80,485.52	\$38,054.51	\$42,431.01
PS3	93-1	\$64,943.82	\$16,655.65	-\$106.61	\$81,492.87	\$38,681.03	\$42,811.84
PS4	93-2	\$43,618.27	\$23,152.94	-\$40.95	\$66,730.26	\$26,510.36	\$40,219.89
PS3	94-1	\$65,811.22	\$16,560.31	-\$170.19	\$82,201.34	\$41,716.99	\$40,484.35
PS4	94-2	\$55,627.08	\$16,73.09	-\$132.04	\$71,868.13	\$34,142.59	\$37,725.53
PS4	95-1	\$121,406.01	\$20,728.96	-\$57.36	\$142,077.61	\$75,790.68	\$66,286.93
PS3	95-2	\$54,494.81	\$16,343.78	-\$25.74	\$70,812.85	\$34,495.57	\$36,317.27
Total		\$2,729,762.12	\$332,098.38	-\$3,757.00	\$3,058,103.50	\$1,698,240.11	\$1,359,863.39

The components of the claim comprised Fuel cost (Gas), variable operations and maintenance cost (VOM), start-up costs for some events and recovery of contingency FCAS charges incurred while the units operated 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 quantity less DCP. The amounts in the claims submitted by Claimant1 were all rounded to the nearest dollar. The amounts shown in the above table are given in dollars and cents based on the supporting information and calculations in the provided excel models. All FCAS amounts included in the supporting information was indicated as negative amounts. This is considered a spreadsheet model error as in previous models by this claimant this amount was multiplied by '-1' to reverse the sign but this was not done in the case of the models provided in this case, refer to Table 3. There are differences between four of the claim letters submitted and the supporting information. Claim letters for events 92-1 and 92-2 have different Gas Cost, Contingency Recovery Cost and total claimed amount compared to the supporting information. Claims for 89-2 and 90-1 have different Gas Cost, Contingency Recovery Cost, VOM and total claimed amount compared to the supporting information.

2.2 Assessment of the claimed amounts

This Section assesses the claimed amount by examining the method used and correctness of the calculation of 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)

Claimant1 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 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. Purchases were made from two contracts and invoices provided in support.
- 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 issues are noted.

2.2.1.1 Calculation of the gas volume

There was a spread sheet error in the implementation of the relationship used to calculate the gas volume. The mathematical relationship was provided on the model provided by Claimant1 in the tab 'HR' and implemented correctly in that tab. However, there was an error in the Excel implementation of the relationship when calculating the volumes associated with the electricity dispatched during the direction (incorrectly placed brackets) which affected 11 of the models for the following events: 84-1, 85-1, 85-2, 85-3, 85-4, 86-1, 86-2, 87-1, 87-2, 89-2 and 90-1. This was corrected during the assessment and the corrected volumes used for the determination. The correction was relatively small.

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. Claimant1 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 Claimant1 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 and the amounts were indexed to March quarter 2022 terms.² It is noted that this approach to estimating VOM is essentially the same approach adopted in a recent final determination.³ The models for two events 89-2 and 90-1 have applied half hourly VOM costs to 5-minute intervals.

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. In our view this is a reasonable method of attributing these costs to the direction.

While the calculations in the spreadsheet model were correct, the claimant included in its claim a negative value for each event as shown in Table 3. This is treated as an Excel error and corrected in the determination. Other than the issue with the sign reversal, the calculations of FCAS costs in the spreadsheet model submitted by the claimant were checked and found to be correct. The sign reversal has been treated as a spreadsheet error and the correctly calculated values were determined to be the costs that apply to the additional costs as shown in Table 4.

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, incurred in some events, were based on an engineering report and information provided by the claimant. To assess reasonableness of the start-up costs included in the claim, the claimed costs were benchmarked against independent information in the public domain for the units concerned. IES has allowed the start-up costs included in the claims.

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). The price used in determining the DCP is the 90th percentile of prices for energy a year immediately preceding the trading day of the *direction*. This amount was calculated by AEMO.

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 Australian Bureau of Statistics (March 2022) 'TABLE 5. CPI: Groups, Index Numbers by Capital City' [time series spreadsheet], Consumer Price Index, Australia, accessed 30 June 2022. Available at <https://www.abs.gov.au/statistics/economy/price-indexes-and-inflation/consumer-price-index-australia/latest-release#data-download>

³ Final Assessment of Additional Compensation for Directions in SA Between February 25th and March 26th, 2021 by the consultancy SLC.



2.3 Summary of the determination – Claimant1

As a result of reviewing the claim submitted by Claimant1 two corrections were made: one to gas volume and the other to the FCAS claimed. Both of these corrections were corrections to spreadsheet errors. The independent expert also made what it considered to be a more reasonable estimate of the VOM costs related to the direction. Table 4 summarises the determination based on the above assessment. Following assessment of the claim submitted by Claimant1 the independent expert determination is that Claimant1 is entitled to an additional compensation amount equal to \$1,347,481.84.

Table 4 Summary of determination – Claimant1

Directed unit	Event No.	Total Fuel Cost	VOM Cost + Start up Cost	FCAS Recovery	Total Cost of Direction	DCP	Additional Compensation Claimed
PS3	84-1	\$83,348.40	\$1,272.29	\$42.66	\$84,663.35	\$57,198.94	\$27,464.41
PS3	85-2	\$276,718.03	\$22,534.15	\$137.99	\$299,390.16	\$172,589.16	\$126,801.01
PS2	85-1	\$759,681.80	\$26,152.19	\$1,146.72	\$786,980.72	\$468,880.10	\$318,100.62
PS3	85-3	\$566,259.41	\$26,313.52	\$1,138.72	\$593,711.65	\$353,991.22	\$239,720.43
PS2	85-4	\$56,029.43	\$12,687.58	\$47.62	\$68,764.63	\$34,597.05	\$34,167.58
PS2	86-1	\$49,359.78	\$12,633.80	\$27.66	\$62,021.24	\$30,724.23	\$31,297.01
PS3	86-2	\$46,026.61	\$15,620.59	\$21.47	\$61,668.67	\$27,308.36	\$34,360.30
PS2	87-1	\$95,457.93	\$13,234.55	\$78.81	\$108,771.29	\$59,352.41	\$49,418.88
PS3	87-2	\$64,541.67	\$16,008.74	\$40.15	\$80,590.56	\$40,688.48	\$39,902.08
PS2	88-1	\$74,378.82	\$12,973.66	\$51.48	\$87,403.96	\$47,283.67	\$40,120.30
PS4	89-2	\$27,384.46	\$11,968.47	\$8.42	\$39,361.35	\$15,921.81	\$23,439.54
PS4	90-1	\$44,757.85	\$15,840.23	\$10.33	\$60,608.41	\$27,200.06	\$33,408.34
PS2	92-1	\$114,752.92	\$1,590.82	\$194.41	\$116,538.16	\$73,112.89	\$43,425.26
PS3	92-2	\$60,936.46	\$19,401.90	\$96.41	\$80,434.77	\$38,054.51	\$42,380.27
PS3	93-1	\$64,943.82	\$16,395.40	\$106.61	\$81,445.83	\$38,681.03	\$42,764.80
PS4	93-2	\$43,618.27	\$22,931.15	\$40.95	\$66,590.37	\$26,510.36	\$40,080.00
PS3	94-1	\$65,811.22	\$16,315.57	\$170.19	\$82,296.99	\$41,716.99	\$40,580.00
PS4	94-2	\$55,627.08	\$16,145.50	\$132.04	\$71,904.62	\$34,142.59	\$37,762.03
PS4	95-1	\$121,406.01	\$20,467.43	\$57.36	\$141,930.80	\$75,790.68	\$66,140.12
PS3	95-2	\$54,494.81	\$16,123.88	\$25.74	\$70,644.42	\$34,495.57	\$36,148.85
Total		\$2,725,534.77	\$316,611.42	\$3,575.76	\$3,045,721.94	\$1,698,240.11	\$1,347,481.84



3 Claims for additional compensation – Claimant2

Claimant 2 submitted a claim for additional compensation which included Fuel cost (Gas), operations and maintenance cost expressed in equivalent operating hours terms (EOH) incurred while the units operated in compliance with the directions. No amounts related to FCAS recovery were included in the claim. The total cost of the direction is the sum of the cost components in the claim. The additional compensation claimed is equal to the latter sum less DCP (as calculated by AEMO in accordance with the NER) was \$20,155.00, shown in Table 5.

Fuel and transport costs were supported by invoices. The EOH included Start costs, Fixed and Variable O&M. The amounts in Table 3 are based on the information provided by Claimant2 in a model except for the last column of the table which shows the additional compensation amount in the claim with the rounding as submitted.

Table 5 Summary of additional compensation claimed – assessed claims – Claimant2

Directed Unit	Event	Total Fuel Cost	EOH	Transportation	Total Cost of Direction	DCP	Additional Compensation Claimed
PS3	89-4	\$11,577.48	\$9,513.61	884.53	\$21,975.62	\$1,820.68	\$20,155.00

The determined amount is shown in Table 6 based on the sum of the components rounded to the nearest cent.

Table 6 Summary of determination – Claimant2

Directed Unit	Event	Total Fuel Cost	VOM Cost + Start up Cost	Transportation	Total Cost of Direction	DCP	Additional Compensation Claimed
PS3	89-4	\$11,577.48	\$9,513.61	884.53	\$21,975.62	\$1,820.68	\$20,154.95

Following assessment of the claim submitted by Claimant2 the independent expert determination is that Claimant2 is entitled to an additional compensation amount equal to \$20,154.95.

4 Submissions on matters in the Draft Determination Report

No submissions were received on the matters contained in the draft determination report.

