

# **AEMO Directions to Participants in South Australia**

16 June 2022

**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 participants.



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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 49 to 52 in 2021.

## 1.1 Background and direction to participants

During billing weeks 49 to 52 in 2021 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
PS2	51-2	01/12/2021 16:00	02/12/2021 09:00	05/12/2021 15:30	System strength
PS4	51-3	02/12/2021 16:00	03/12/2021 08:15	03/12/2021 15:30	System strength
PS4	51-4	03/12/2021 17:00	04/12/2021 07:45	04/12/2021 17:00	System strength
PS4	51-6	04/12/2021 16:45	05/12/2021 05:00	06/12/2021 13:00	System strength
PS4	51-8	06/12/2021 11:00	06/12/2021 14:00	07/12/2021 19:00	System strength
PS3	51-9	06/12/2021 14:30	07/12/2021 08:45	07/12/2021 16:15	System strength
PS3	51-10	07/12/2021 18:30	07/12/2021 19:00	09/12/2021 22:00	System strength
PS4	51-11	07/12/2021 18:40	08/12/2021 07:15	10/12/2021 16:45	System strength
PS4	52-1	10/12/2021 16:30	11/12/2021 04:00	11/12/2021 15:00	System strength
PS4	53-1	11/12/2021 16:00	12/12/2021 00:30	12/12/2021 12:30	System strength
PS4	54-1	14/12/2021 16:00	15/12/2021 10:30	15/12/2021 09:30	System strength
PS4	55-1	15/12/2021 16:00	16/12/2021 08:00	16/12/2021 13:40	System strength
PS4	56-1	16/12/2021 16:30	17/12/2021 07:30	17/12/2021 11:30	System strength
PS2	57-1	17/12/2021 16:30	18/12/2021 01:00	18/12/2021 13:30	System strength
PS3	57-3	17/12/2021 18:10	18/12/2021 06:00	18/12/2021 05:15	System strength
PS4	57-5	18/12/2021 05:15	18/12/2021 08:00	18/12/2021 12:30	System strength
PS2	58-1	18/12/2021 16:00	19/12/2021 00:30	26/12/2021 00:00	System strength



## AEMO DIRECTIONS TO PARTICIPANTS IN SOUTH AUSTRALIA DURING BW 49-52

Directed unit	Event number	Issued	Effective	Ended	Reason
PS3	58-2	18/12/2021 16:00	19/12/2021 07:30	19/12/2021 18:30	System strength
PS3	58-3	19/12/2021 16:00	20/12/2021 08:00	20/12/2021 16:30	System strength
PS3	58-4	20/12/2021 16:00	21/12/2021 08:30	21/12/2021 16:00	System strength
PS3	58-6	22/12/2021 15:00	23/12/2021 07:30	23/12/2021 16:30	System strength
PS4	58-7	23/12/2021 15:45	24/12/2021 08:00	24/12/2021 16:00	System strength
PS4	58-9	24/12/2021 16:00	25/12/2021 01:00	29/12/2021 13:30	System strength
PS2	58-10	26/12/2021 00:01	26/12/2021 00:01	29/12/2021 15:30	System strength

**Table 2 Summary of the directions – assessed claims – Claimant2**

Directed unit	Event number	Issued	Effective	Ended	Reason
PS1	51-12	09/12/2021 17:30	10/12/2021 08:00	10/12/2021 16:45	System strength
PS1	53-3	11/12/2021 16:00	12/12/2021 07:30	12/12/2021 12:30	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 as 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
PS2	51-2	\$531,174.38	\$57,136.53	-\$100.00	\$588,210.90	\$284,259.23	\$303,951.67
PS4	51-3	\$47,005.21	\$19,352.75	-\$100.00	\$66,257.96	\$25,368.68	\$40,889.28
PS4	51-4	\$61,552.86	\$24,145.26	-\$100.00	\$85,598.12	\$32,771.75	\$52,826.37
PS4	51-6	\$215,167.15	\$40,800.21	-\$100.00	\$255,867.36	\$114,369.90	\$141,497.46
PS4	51-8	\$199,385.03	\$21,107.76	-\$100.00	\$220,392.79	\$105,662.52	\$114,730.28
PS3	51-9	\$45,895.35	\$34,169.40	-\$100.00	\$79,964.75	\$24,757.55	\$55,207.21
PS3	51-10	\$466,534.64	\$37,120.55	-\$100.00	\$503,555.19	\$271,235.56	\$232,319.63
PS4	51-11	\$388,779.89	\$41,851.60	-\$100.00	\$430,531.49	\$204,104.65	\$226,426.84
PS4	52-1	\$74,815.29	\$8,006.39	-\$100.00	\$82,721.69	\$39,800.19	\$42,921.50
PS4	53-1	\$81,414.64	\$8,734.25	-\$100.00	\$90,048.89	\$43,606.75	\$46,442.14
PS4	54-1	\$-	\$23,260.66	-\$100.00	\$23,160.66	\$-	\$23,160.66
PS4	55-1	\$35,044.73	\$24,128.35	-\$100.00	\$59,073.09	\$17,962.59	\$41,110.49
PS4	56-1	\$25,036.95	\$17,292.42	-\$100.00	\$42,229.36	\$13,936.98	\$28,292.38
PS2	57-1	\$85,287.88	\$9,098.17	-\$100.00	\$94,286.06	\$48,379.33	\$45,906.72
PS3	57-3	\$-	\$17,704.64	-\$100.00	\$17,604.64	\$-	\$17,604.64
PS4	57-5	\$29,726.29	\$20,922.53	-\$100.00	\$50,548.82	\$16,729.35	\$33,819.47
PS2	58-1	\$1,083,424.82	\$121,915.52	-\$100.00	\$1,205,240.33	\$646,115.20	\$559,125.13
PS3	58-2	\$71,118.11	\$27,564.93	-\$100.00	\$98,583.04	\$41,285.85	\$57,297.19
PS3	58-3	\$54,577.46	\$20,145.35	-\$100.00	\$74,622.81	\$31,620.63	\$43,002.18
PS3	58-4	\$48,294.40	\$19,400.47	-\$100.00	\$67,594.87	\$27,858.12	\$39,736.75
PS3	58-6	\$59,098.80	\$20,842.67	-\$100.00	\$79,841.46	\$34,188.04	\$45,653.42
PS4	58-7	\$48,297.35	\$27,878.20	-\$100.00	\$76,075.55	\$26,674.76	\$49,400.79
PS4	58-9	\$728,892.47	\$96,991.86	-\$100.00	\$825,784.32	\$406,025.49	\$419,758.83
PS2	58-10	\$590,205.95	\$63,687.21	-\$100.00	\$653,793.16	\$336,653.03	\$317,140.13





## AEMO DIRECTIONS TO PARTICIPANTS IN SOUTH AUSTRALIA DURING BW 49-52

Directed unit	Event No.	Total Fuel Cost	VOM Cost + Start up Cost	FCAS Recovery	Total Cost of Direction	DCP	Additional Compensation Claimed
<b>Total</b>		\$4,970,729.63	\$803,257.68	-\$2,400.00	\$5,771,587.31	\$2,793,366.15	\$2,978,221.16

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 information provided in the supporting information and calculations shown. The FCAS amount claimed for each event was a negative value of -\$100 as shown in the Table 3. Events 54-1 and 57-3 were cancelled shortly before the effective time.

### 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). 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.<sup>1</sup> 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.<sup>2</sup>

There was an error made by Claimant1 in applying the VOM rate. The spreadsheet model calculated a rate for a 30-minute period but applied it to each 5-minute period. This effectively overstated the cost by a multiple of six (6). This is likely caused by the model not being updated for the change from 30-minute settlement to 5-minute settlement. This settlement period error was corrected.

### **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 (-\$100) for each event as shown in Table 3. This is treated as an Excel error and corrected in the determination. This included events 54-1 and 57-3 which were cancelled shortly before the effective time and to which Raise Contingency FCAS costs do not apply. There is no support for including an amount other than zero for these two events.

The calculations of FCAS costs in the spreadsheet model submitted by the claimant were checked and found to be correct. In forming its claim, the claimant referenced a cell which contains a manual input value of -\$100 instead of the correctly calculated amount. This 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. Events 54-1 and 57-3 were cancelled shortly before the effective time but still incurred start up costs.

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

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



### 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 90<sup>th</sup> 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 – 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 \$2,514,690.10.

**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
PS2	51-2	\$529,990.77	\$7,201.71	\$966.48	\$538,158.95	\$284,259.23	\$253,899.72
PS4	51-3	\$47,005.21	\$14,772.72	\$39.92	\$61,817.85	\$25,368.68	\$36,449.17
PS4	51-4	\$61,264.96	\$18,232.35	\$36.14	\$79,533.45	\$32,771.75	\$46,761.70
PS4	51-6	\$214,155.94	\$20,379.96	\$430.46	\$234,966.37	\$114,369.90	\$120,596.47
PS4	51-8	\$198,237.78	\$2,670.04	\$589.82	\$201,497.65	\$105,662.52	\$95,835.13
PS3	51-9	\$45,839.08	\$29,336.11	\$42.19	\$75,217.38	\$24,757.55	\$50,459.83
PS3	51-10	\$464,495.19	\$6,852.58	\$2,026.33	\$473,374.10	\$271,235.56	\$202,138.54
PS4	51-11	\$386,933.59	\$5,156.56	\$1,359.43	\$393,449.58	\$204,104.65	\$189,344.93
PS4	52-1	\$74,451.76	\$1,008.65	\$145.14	\$75,605.55	\$39,800.19	\$35,805.36
PS4	53-1	\$81,022.03	\$1,096.14	\$91.08	\$82,209.25	\$43,606.75	\$38,602.50
PS4	54-1	\$-	\$23,260.66	\$-	\$23,260.66	\$-	\$23,260.66
PS4	55-1	\$34,910.27	\$20,441.51	\$17.68	\$55,369.46	\$17,962.59	\$37,406.87
PS4	56-1	\$24,926.51	\$14,715.38	\$40.51	\$39,682.40	\$13,936.98	\$25,745.42
PS2	57-1	\$85,091.81	\$1,154.15	\$69.60	\$86,315.55	\$48,379.33	\$37,936.22
PS3	57-3	\$-	\$17,704.64	\$-	\$17,704.64	\$-	\$17,704.64
PS4	57-5	\$29,587.56	\$18,043.23	\$19.96	\$47,650.75	\$16,729.35	\$30,921.41
PS2	58-1	\$1,081,030.09	\$15,295.91	\$4,599.68	\$1,100,925.68	\$646,115.20	\$454,810.48
PS3	58-2	\$71,020.15	\$20,535.93	\$161.56	\$91,717.64	\$41,285.85	\$50,431.80



**AEMO DIRECTIONS TO PARTICIPANTS IN SOUTH AUSTRALIA DURING BW 49-52**

Directed unit	Event No.	Total Fuel Cost	VOM Cost + Start up Cost	FCAS Recovery	Total Cost of Direction	DCP	Additional Compensation Claimed
PS3	58-3	\$54,505.93	\$14,704.50	\$581.13	\$69,791.56	\$31,620.63	\$38,170.93
PS3	58-4	\$48,230.62	\$14,600.43	\$39.98	\$62,871.03	\$27,858.12	\$35,012.91
PS3	58-6	\$59,098.80	\$15,098.22	\$54.41	\$74,251.42	\$34,188.04	\$40,063.37
PS4	58-7	\$48,102.01	\$22,685.09	\$25.36	\$70,812.47	\$26,674.76	\$44,137.71
PS4	58-9	\$725,508.87	\$27,607.68	\$1,031.25	\$754,147.79	\$406,025.49	\$348,122.30
PS2	58-10	\$588,905.95	\$7,975.22	\$843.90	\$597,725.06	\$336,653.03	\$261,072.03
<b>Total</b>		\$4,954,314.88	\$340,529.35	\$13,212.01	\$5,308,056.24	\$2,793,366.15	\$2,514,690.10



### 3 Claims for additional compensation – Claimant2

Claimant 2 submitted a claim for additional compensation which included fuel cost, VOM and additional transportation. DCP was subtracted from the sum of these components. The claimant showed the claimed amounts rounded to the nearest dollar, but the total additional compensation amount claimed was based on the amounts before rounding (and rounded at the end). The amounts claimed are summarised in Table 5. The amount claimed for each of these components was supported by invoices.

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

Directed Unit	Event	Effective	Total Fuel Cost	VOM Cost + Start up Cost	FCAS & Transportation	Total Cost of Direction	DCP	Additional Compensation Claimed
PS1	51-12	10/12/2021 08:00	\$88,143	\$26,181	\$1,334	\$115,659	\$94,655	\$21,004
PS1	53-3	12/12/2021 07:30	\$50,918	\$24,411	\$683	\$76,010	\$54,392	\$21,618

Event 51-12 was effective from 08:00 on 10/12/2021 and was cancelled at 16:45 of the same day. The FCAS amount claimed for the event included Raise Contingency FCAS costs up to 17:00. The amount was adjusted to only include the costs up to the direction cancellation time. The determined amount adjusted the amount claimed for that component down by \$23.48. Where individual cost items have been claimed rounded up to the nearest dollar the amount was determined in dollars and cents which resulted in minor adjustments downward. The determined amounts are shown in Table 6.

Event 53-3 claimed amounts were checked and the overall effect of the rounding slightly understated the amount claimed. It was determined to allow the claim as submitted.

**Table 6 Summary of determination – Claimant2**

Directed Unit	Event	Effective	Total Fuel Cost	VOM Cost + Start up Cost	FCAS & Transportation	Total Cost of Direction	DCP	Additional Compensation Claimed
PS1	51-12	10/12/2021 08:00	\$88,143.00	\$26,180.56	\$1,310.52	\$115,634.08	\$94,655.00	\$20,979.08
PS1	53-3	12/12/2021 07:30	\$50,918.00	\$24,411.00	\$683.00	\$76,010.00	\$54,392.00	\$21,618.00

Following assessment of the claim submitted by Claimant2 the independent expert determination is that Claimant2 is entitled to an additional compensation amount equal to \$42,597.08.

### 4 Submissions on matters in the draft determination report

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

