



**Additional compensation claims arising  
from AEMO directions to hydro pumps  
between 14 and 23 June 2022 and 5 July  
2022  
FINAL DETERMINATION**

An independent expert report for AEMO

22 December 2022

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## 1 Introduction

Synergies Economic Consulting (Synergies) was appointed by the Australian Energy Market Operator (AEMO) as an independent expert to determine additional compensation claims in relation to directions made to hydro pumps between 14 and 23 June 2022 and 5 July 2022 under clause 3.15.7A of the National Electricity Rules (NER).

AEMO is required by the NER to use reasonable endeavours to complete all obligations, including final settlement, no later than 30 weeks after the end of the Direction(s). For these *directions* relating to hydro pumps, the intervention timetable requires that a draft independent expert determination be delivered no later than 4 October 2022 and a final determination by 22 December 2022. This will allow AEMO to complete the intervention settlement process for these *directions* by the required deadline of 12 January 2023.

In accordance with the Intervention Settlement Timetable, Synergies is issuing this final determination on 22 December 2022.

### 1.1 Structure of the report

In the remainder of this report, we set out the basis for our final determination regarding additional compensation claims resulting from these directions under the NER, as follows:

- Section 2 summarises the circumstances of the *directions* and the additional compensation claim provisions of clause 3.15.7A relevant to the Claim.
- Section 3 provides details of the *directions* made.
- Section 4 provides an overview of the additional compensation amount claimed by the directed participants as a result of the *directions*.
- Sections 5 provides our analysis of the reasonableness of the additional compensation amount under the Claims.
- Section 6 provides our final determination.

## 2 Claims under clause 3.15.7A of NER

This section summarises the circumstances of the *directions* and sets out the fair compensation claim provisions of clause 3.15.7A of the NER relevant to the *Directed Participants'* claims in relation to the supply of services other than energy and market ancillary services.

### 2.1 Basis of the *directions*

Section 116 of the NEL and clause 4.8.9 of the NER establish that AEMO may direct a *Registered Participant* to take relevant actions to maintain or restore the security or reliability of the power system.

Between 14 and 23 June 2022 and 5 July in 2022, AEMO issued several *directions* to Australian hydro pump *market participant* to maintain the system in a secure and reliable operating state. The hydro pumps were directed to consume energy to alleviate forecasted supply reserve shortfalls and ensure availability for the relevant generating units to later provide generation as required. The consumption of energy in these circumstances is determined as an 'other compensable service' under clause 3.15.7A.

As a result of the operational responses to the *directions*, the *directed participants* that incurred costs are entitled to fair compensation under clause 3.15.7A of the NER. Clause 3.15.7A(g) identifies the following factors relevant to our independent assessment:

- relevant contractual arrangements which specify a price for the relevant service;
- the loss of revenue incurred by the *Directed Participant* in respect of a scheduled generating unit, semi-scheduled generating unit, scheduled load, ancillary service generating unit, market generating unit, ancillary services load or scheduled network services, as the case may be, as a result of the provision of the other compensable service under *direction*;
- the net direct costs incurred by the *Directed Participant* in respect of that scheduled generating unit as a result of the provision of the other compensable service under *direction* including without limitation:
  - fuel costs in connection with the relevant generating unit;
  - incremental maintenance costs in connection with the relevant generating unit;
  - incremental manning costs in connection with the relevant generating unit;
  - acceleration costs of maintenance work in connection with the relevant generating unit, where such acceleration costs are incurred to enable the generating unit to comply with the *directions*;

- delay costs for maintenance work in connection with the relevant generating unit, where such costs are incurred to enable the generating unit to comply with the *directions*; and
- other costs incurred in connection with the relevant generating unit, where such costs are incurred to enable the generating unit to comply with the *direction*.

In assessing other compensable service claims, Clause 3.15.7A(j) requires the independent expert to only consider the following:

- Clause 3.12.3(c), which establishes the role of the Independent Expert in calculating payments in relation to intervention by AEMO and market suspension pricing schedule periods, including a requirement to determine the total amount of compensation payable to *directed participants*;
- the matters identified above in relation to Clause 3.15.7A(g);
- the following principles:
  - the disinclination of *Directed Participants* to provide the other compensable service that is the subject of the *direction* must be disregarded; and
  - the urgency of the need for the other compensable service that is the subject of the *direction* must be disregarded; and
- the Independent Expert's draft and final reports must set out a description of the other compensable services provided in response to the *direction*.

### 3 The hydro pump *directions*

AEMO issued 20 hydro pump *directions* between 14 and 23 June 2022 and 5 July 2022. One *directed participant* withdrew its claim in relation to the *directions* and requested to be excluded from the fair payment process. Consequently, claims in relation to the 14 *directions* that Synergies has considered as independent expert under the NER are summarised in Table 1.

**Table 1 AEMO's *directions* to the Claimants**

Directed unit	Event Number	Issued date/time	End date/time	Reason
<b>Claimant 1</b>				
Unit 1	129-14	15/06/2022 1:00	15/06/2022 05:00	Unit directed to consume energy
Unit 1	129-19	15/06/2022 11:10	15/06/2022 15:55	Unit directed to consume energy
Unit 1	129-24	16/06/2022 01:55	16/06/2022 07:00	Unit directed to consume energy
Unit 1	129-26	16/06/2022 10:40	16/06/2022 14:20	Unit directed to consume energy
Unit 1	129-27	16/02/2022 23:40	17/06/2022 06:00	Unit directed to consume energy
Unit 1	130-5	18/06/2022 04:40	18/06/2022 06:45	Unit directed to consume energy
Unit 1	130-11	18/06/2022 10:00	23/06/2022 04:00	Unit directed to consume energy
<b>Claimant 2</b>				
Unit 1	129-10	14/06/2022 12:05	14/06/2022 16:30	Unit directed to consume energy
Unit 1	129-12	14/06/2022 22:30	15/06/2022 04:00	Unit directed to consume energy
Unit 1	129-20	15/06/2022 11:30	15/02/2022 16:05	Unit directed to consume energy
Unit 1	129-23	16/06/2022 00:15	16/06/2022 05:25	Unit directed to consume energy
Unit 1	129-25	16/06/2022 11:15	16/06/2022 15:10	Unit directed to consume energy
Unit 1	129-28	17/06/2022 00:55	17/06/2022 05:00	Unit directed to consume energy
Unit 1	142-5	17/06/2022 19:40	23/06/2022 04:00	Unit directed to consume energy

Source: AEMO

## 4 Claims for compensation

This section presents the breakdown of claimed costs for each of the Claims.

### 4.1 Additional compensation in respect of Claims

The Claimants have submitted the following claims for compensation for the *directions* received between 14 and 23 June 2022 and 5 July 2022.

**Table 2 Summary of compensation claim estimates for each Claimant**

Directed unit	Event number	Direction date/time	Energy cost (1)	Start cost (2)	Compensation amount (1) +(2)
<b>Claimant 1</b>					
Unit 1	129-14	15/06/2022 1:00	\$221,884.57	N/A	\$221,884.57
Unit 1	129-19	15/06/2022 11:10	\$191,454.66	N/A	\$191,454.66
Unit 1	129-24	16/06/2022 01:55	\$241,122.13	N/A	\$242,122.13
Unit 1	129-26	16/06/2022 10:40	\$116,554.54	N/A	\$116,554.54
Unit 1	129-27	16/02/2022 23:40	\$302,944.24	N/A	\$302,944.24
Unit 1	130-5	18/06/2022 04:40	\$95,575.14	N/A	\$95,575.14
Unit 1	130-11	18/06/2022 10:00	\$1,637,243.85	N/A	\$1,637,243.85
<b>Total additional compensation claimed</b>	N/A	N/A	\$2,807,779.14	N/A	<b>\$2,807,779.14</b>
<b>Claimant 2</b>					
Unit 1	129-10	14/06/2022 12:05	\$609,984.00	\$2,100	\$612,084.00
Unit 1	129-12	14/06/2022 22:30	\$746,631.00	\$2,100	\$748,731.00
Unit 1	129-20	15/06/2022 11:30	\$402,642.89	\$2,100	\$404,042.89
Unit 1	129-23	16/06/2022 00:15	\$609,655.73	\$2,100	\$611,755.73
Unit 1	129-25	16/06/2022 11:15	\$272,153.12	\$2,100	\$274,253.12
Unit 1	129-28	17/06/2022 00:55	\$409,590.22	\$2,100	\$411,690.22
Unit 1	142-5	17/06/2022 19:40	\$3,750,806.86	\$2,100	\$3,766,906.86
<b>Total additional compensation claimed</b>	N/A	N/A	<b>\$6,801,463.82</b>	<b>\$28,000</b>	<b>\$6,829,463.82</b>

Source: The Claimants



## 5 Synergies' assessment regarding the Claims

This section analyses the reasonableness of each Claimant's cost estimation methodologies and sets out Synergies' final determination on each component of claimed costs.

### 5.1 Claimant 1

Claimant 1's claim comprised fuel costs for all *directions* that it received.

#### 5.1.1 Energy cost

The following method was applied by the Claimant to calculate the cost of fuel consumed for each of the *directions*:<sup>1</sup>

- Identify the relevant National Electricity Market (NEM) regional reference price (RRP) and fuel consumed for each six-minute trading interval relating to each *direction*.
- Adjust the fuel consumed by the relevant Marginal Loss Factor (MLF) as approved by AEMO.<sup>2</sup>
- Calculate the fuel cost as a function of the adjusted fuel consumed and relevant RRP.

The Claimant provided a spreadsheet in support of its claim showing the above calculations. Synergies has confirmed that the correct RRP and MLFs have been used in the calculation, and that the calculation itself is correct. The fuel cost per MWh for each *direction* falls within a reasonable range.

#### 5.1.2 Summary assessment

Based on the evidence provided and the cost estimation method applied, Synergies accepts in this final determination the fuel cost claimed due to the *directions* made to the Claimant's hydro pumps between 14 and 23 June 200 and 5 July 2022.

### 5.2 Claimant 2

Claimant 2's claim comprised fuel and start costs for all *directions* that it received.

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<sup>1</sup> The Claimant's calculation assumes the pump is a generator (which is correct from a NEM registration perspective). Hence, fuel costs are based on energy consumed and the spot price at the time.

<sup>2</sup> AEMO (2022), Marginal Loss Factors: Financial Year 2022-23, April

### 5.2.1 Energy cost

The following method was applied by the Claimant to calculate the cost of fuel consumed for each of the *directions*:<sup>3</sup>

- Identify the relevant NEM regional reference price (RRP) and fuel consumed for each six-minute trading interval relating to each *direction*.
- Adjust the fuel consumed by the relevant MLF.
- Calculate the fuel cost as a function of the adjusted fuel consumed and RRP.

The Claimant provided a spreadsheet in support of its claim showing the above calculations. Synergies has confirmed that the correct RRPs and MLFs have been used in the calculation, and that the calculation itself is correct. The fuel cost per MWh for each *direction* falls within a reasonable range.

Based on the evidence provided and the method applied, Synergies accepts the fuel cost claimed due to the *directions*.

### 5.2.2 Start Costs

The Claimant's method for calculating the start costs is as follows:

- a 'machine cost' that includes:
  - the additional wear and tear incurred as a function of pumping pursuant to a *direction*; and
  - the labour and repair costs required to deal with pumping pursuant to a *direction*; and
- a 'water cost' which accounts for the lost revenue associated with starting and stopping a unit pursuant to a *direction* (assuming a water value of \$50/MWh);
- the sum of machine and water costs is the total assumed cost per start, which is multiplied by the assumed number of starts arising from the *directions*.

Synergies accepts the start cost estimates in this claim noting the small amount of claimed costs in absolute and proportionate terms.

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<sup>3</sup> As for Claimant 1, fuel costs are based on energy consumed and the spot price at the time.

### **5.2.3 Summary assessment**

Based on the evidence provided and the cost estimation method applied, Synergies in this final determination accepts the fuel and start costs claimed due to the *directions* made to the Claimant's hydro pumps between 14 and 23 June 2022 and 5 July 2022.

## 6 Conclusion

In this final determination:

- Claimant 1's additional costs to comply with the *directions* have been accepted as claimed and it is entitled to additional compensation of **\$2,807,779.14**; and
- Claimant 2's additional costs to comply with the *directions* have been accepted as claimed and it is entitled to additional compensation of **\$6,829,463.82**.

The *directed participants* have been informed of the final determination outcome, our reasons, and the amount of additional compensation accepted.