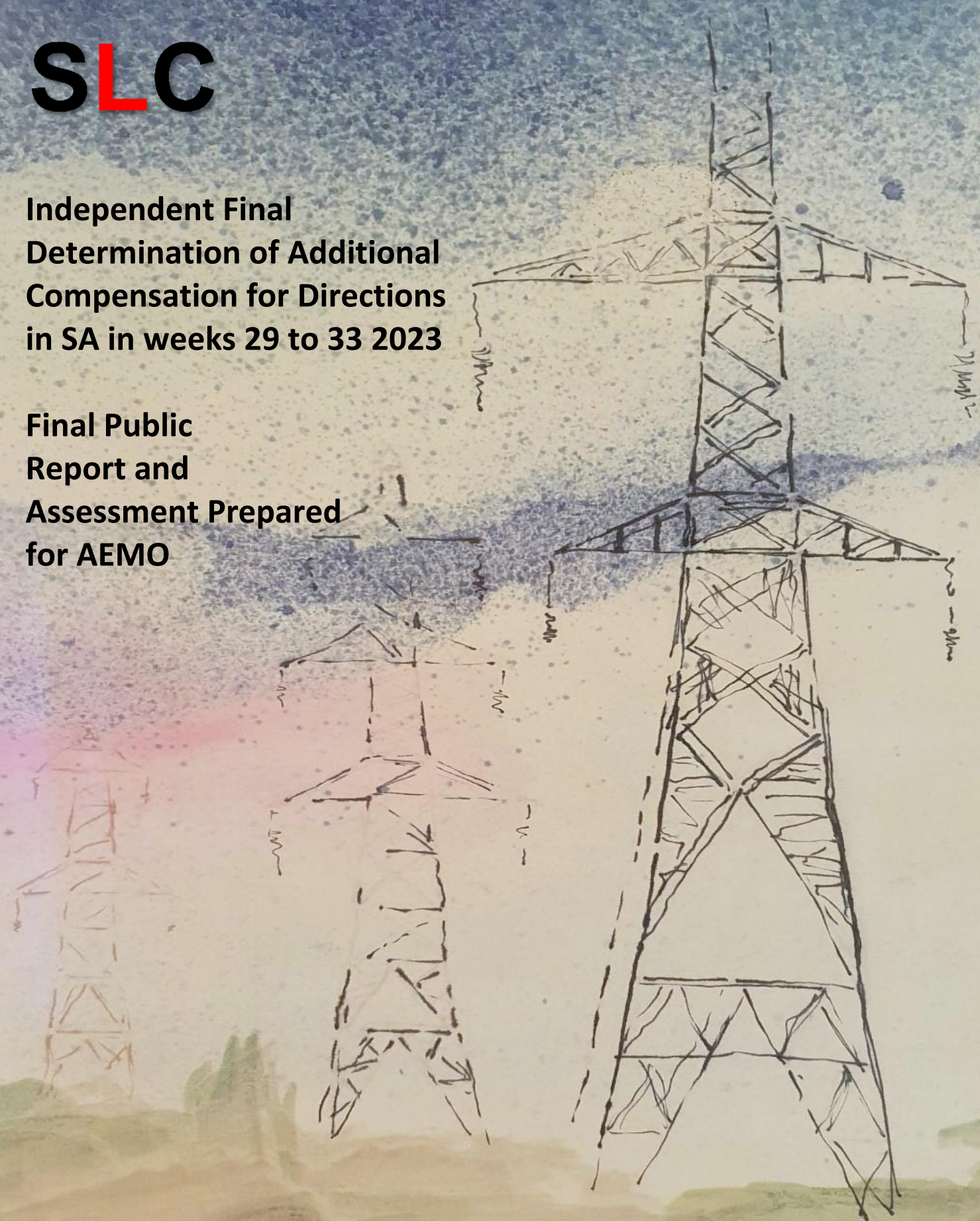




**Independent Final
Determination of Additional
Compensation for Directions
in SA in weeks 29 to 33 2023**

**Final Public
Report and
Assessment Prepared
for AEMO**



**Sam Lovick Consulting
January 2024**

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A handwritten signature in black ink, located in the bottom right corner of the page. The signature is stylized and appears to be 'SLC'.

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1. Introduction

This report is prepared for the Australian Energy Market Operator (AEMO) in accordance with the requirements of clause 3.12.3 of the National Electricity Rulesⁱ (NER).

Sam Lovick Consulting (SLC) was appointed by AEMO as an independent expert to determine clause 3.15.7B additional compensation claims for 25 *directions* to two *Directed Participants* (Claimants A and B) issued in South Australia between 22nd July 2023 and 18th August 2023, billing weeks 29 to 33. AEMO determined that these were *directions* for *system security* to maintain the system in a secure operating state. They are summarised in Table 1.

Table 1. Summary of *directions*

Claimant	Event	Issued at	Start date and time	End date and time	Reason	Instruction
A	342-1	22/07/2023 17:00	23/07/2023 01:00	23/07/2023 15:30	System security	Synchronise
A	343-1	25/07/2023 21:00	26/07/2023 10:00	26/07/2023 12:30	System security	Synchronise
A	344-1	26/07/2023 16:00	27/07/2023 00:30	28/07/2023 04:00	System security	Synchronise
A	345-1	28/07/2023 15:20	29/07/2023 02:00	29/07/2023 16:30	System security	Synchronise
A	346-1	29/07/2023 16:20	30/07/2023 00:30	30/07/2023 15:30	System security	Synchronise
A	347-1	30/07/2023 17:15	31/07/2023 01:00	31/07/2023 14:00	System security	Synchronise
A	348-1	01/08/2023 17:00	02/08/2023 10:00	02/08/2023 15:30	System security	Synchronise
A	349-1	02/08/2023 09:00	02/08/2023 20:30	04/08/2023 05:00	System security	Synchronise
A	351-1	07/08/2023 17:30	08/08/2023 10:30	08/08/2023 15:30	System security	Synchronise
A	352-1	08/08/2023 16:00	09/08/2023 01:30	09/08/2023 07:30	System security	Synchronise
A	353-1	09/08/2023 07:00	09/08/2023 17:00	10/08/2023 04:00	System security	Synchronise
B	342-2	22/07/2023 17:00	23/07/2023 00:30	23/07/2023 15:30	System security	Remain
B	344-2	26/07/2023 16:00	27/07/2023 01:30	27/07/2023 16:50	System security	Remain
B	344-4	27/07/2023 17:00	27/07/2023 20:30	28/07/2023 14:00	System security	Remain
B	345-2	28/07/2023 15:00	29/07/2023 08:30	29/07/2023 16:30	System security	Synchronise
B	346-2	29/07/2023 15:30	30/07/2023 00:30	30/07/2023 16:00	System security	Synchronise
B	349-2	02/08/2023 09:00	02/08/2023 23:30	04/08/2023 05:00	System security	Synchronise
B	350-1	03/08/2023 21:30	04/08/2023 08:30	04/08/2023 15:30	System security	Remain
B	353-2	09/08/2023 07:00	09/08/2023 17:30	10/08/2023 04:00	System security	Remain
B	354-1	15/08/2023 16:00	16/08/2023 09:30	16/08/2023 15:30	System security	Remain
B	355-2	16/08/2023 15:30	17/08/2023 10:15	17/08/2023 15:30	System security	Synchronise
B	356-1	17/08/2023 14:30	17/08/2023 23:30	18/08/2023 15:30	System security	Remain
B	356-2	17/08/2023 14:30	17/08/2023 23:30	18/08/2023 16:30	System security	Remain
B	357-1	18/08/2023 14:30	19/08/2023 01:00	19/08/2023 16:30	System security	Remain
B	357-2	18/08/2023 14:30	19/08/2023 01:30	19/08/2023 15:30	System security	Remain

1.1. Circumstances of the *Directions*

The *Directions* did not result from any particularly unusual events within the National Electricity Market (NEM) at that time. Rather, they were a result of insufficient supply of generation to meet demand, reserve, and related system requirements sufficient to ensure secure and reliable operation in the event of contingencies. The *directions* were necessary to ensure that generators capable of providing these services either synchronised or remained synchronised to ensure that sufficient capacity would be available in a timely fashion.

1.2. Compensation for the *Directed Participants*

AEMO determined compensation for these *directions* under clause 3.15.7, which defines a formula for compensating *Directed Participants* for the provision of *energy* and *market ancillary*

ⁱ The period of the *directions* was covered by National Electricity Rules version 200. The rules are available at <https://www.aemc.gov.au/regulation/energy-rules/national-electricity-rules/historical-versions>.

services based on the 90th percentile *spot price* or *ancillary service price* over the preceding year, referred to as DCP in the clause 3.15.7(c). AEMO informed the *Directed Participants* of the compensation amounts.

The *Directed Participants* sought additional compensation under clause 3.15.7B in respect of the foregoing *directions* that met the thresholds set out in clause 3.15.7B(c)(1) for referral to an independent expert. They claimed additional compensation for other directions that did not meet that threshold; these are not addressed in this report.

2. *Directed Participants'* claims

AEMO provided SLC with details of the clause 3.15.7 compensation claims and correspondence with the *Directed Participants* concerning their claims. Claimant A provided some additional information clarifying aspects of their claim in response to a request from SLC.

2.1. Clause 3.15.7B claims

All the directed participants provided spreadsheets detailing net direct costs incurred under each direction comprising:

- the costs of purchasing and transporting fuel to provide the directed services;
- start costs;
- operation and maintenance (O&M) costs; and
- a share of the charges levied by AEMO *market generators* to recover the costs of Contingency Raise FCAS.

All of these are compensable under clause 3.15.7B. For each direction, they claimed these costs minus the amount of compensation received for directed *energy* calculated according to clause 3.15.7.

2.2. Initial claims

The *Directed Participants* provided within the prescribed time limit letters summarising the compensation that was sought, signed by an officer, certifying that data supplied was true and correct as required by clause 3.15.7B(b)(3). They provided spreadsheets detailing the calculations made to determine the amount of additional compensation. They also supplied copies of invoices for fuel supplied covering the periods of the directions.

2.3. Draft determinations

Based on the AEMO material and claimant's submissions, in November 2023 SLC provided a Draft Public Reportⁱⁱ and confidential draft assessments to AEMO and the directed participants.

ⁱⁱ Sam Lovick Consulting (2023) *Independent Expert Report - Directions to South Australian generators during billing weeks 29 - 32 2023* available at <https://aemo.com.au/energy-systems/electricity/national->

2.4. Further submissions

SLC called for further submissions from the *Directed Participants* in response to the drafts prior to preparing this final report as required by clause 3.12.3(c)(2). Neither claimant made a submission in response to the draft determinations. Nor has SLC independently identified any factors that would change the draft determinations; accordingly, the final determinations are the same as the draft determinations.

3. Clause 3.15.7B compensation provisions of the NEM

Clause 3.15.7B compensates *Directed Participants* for (clause 3.15.7B(a)):

- (1) the aggregate of the loss of revenue and additional net direct costs incurred by the *Directed Participant* in respect of a *scheduled generating unit, semi-scheduled generating unit or scheduled network services*, as the case may be, as a result of the provision of the service under *direction*; less
- (2) the amount notified to that *Directed Participant* pursuant to clause 3.14.5A(g) or clause 3.15.7(e); less
- (3) the aggregate amount the *Directed Participant* is entitled to receive in accordance with clause 3.15.6(c) for the provision of a service rendered as a result of the *direction*.

3.1. Net direct costs

'Net direct costs' is not a defined term in the NEM, but clause 3.15.7B(a3) sets out, without limitation, seven examples of net direct costs including fuel costs. It is clear from these examples that the term 'net direct costs' encompasses all costs incurred by the *Directed Participant* that would not have been incurred absent the *direction*, and this is the interpretation that has been adopted in the past by independent experts making clause 3.15.7B determinations.

3.1.1 Fuel costs

Fuel costs and fuel transportation costs incurred to provide the directed services meet the definition net direct costs under clause 3.15.7B(a3).

3.1.2 Start costs

In all claims that included start costs, we are satisfied that the directed units would not have incurred the start costs involved in synchronising had they not provided the directed services. Start costs meet the definition net direct costs under clause 3.15.7B(a3).

3.1.3 O&M costs

Generators incur variable operating and maintenance costs when they generate which are not fuel related. These can include, for example, raw water costs, waste and wastewater disposal

[electricity-market-nem/nem-events-and-reports/market-event-reports/independent-expert-report-directions-to-south-australian-generators-during-billing-weeks-29-32-2023](https://www.aem.gov.au/electricity-market-nem/nem-events-and-reports/market-event-reports/independent-expert-report-directions-to-south-australian-generators-during-billing-weeks-29-32-2023).

costs, chemical costs, lubricants and other consumables.ⁱⁱⁱ Generators may also incur additional labour costs when generating, in so far as they have flexibility over staffing when not operating. We are satisfied that, but for the directions, the units would not have operated, which would have resulted in some variable O&M (vO&M) cost savings. Variable O&M costs meet the definition net direct costs under clause 3.15.7B(a3).

3.1.4 Contingency Raise FCAS recovery

None of the seven examples of net direct costs in clause 3.15.7B(a3) exactly matches Contingency Raise FCAS recovery charges. Nevertheless, for the reasons set out in prior compensation determinations,^{iv} if the generators had not been directed, they would not have produced any *generator energy* and would not have been charged for Contingency Raise FCAS recovery. Accordingly, Contingency Raise FCAS recovery is a net direct cost for the purposes of clause 3.15.7B.

AEMO provided settlement data on Contingency Raise FCAS recovery charges which the claimants used to determine their compensation claims.

3.2. Lost revenue

There were no claims for loss of revenue.

3.3. Adjustment for revenues received

To determine total compensation, clause 3.15.7B(a)(2) requires that compensation for the directed services calculated according to clauses clause 3.14.5A and 3.15.7 is deducted from net direct costs. The market was not suspended so no revenue was earned under clause 3.14.5A. Revenue was paid to the *Directed Participants* calculated according to clause 3.15.7(c), termed DCP. The claimants appropriately calculated and deducted DCP from their additional compensation claims.

Clause 3.15.7B(a)(3) requires that revenues defined in clause 3.15.6(c) are also deducted. In previous determinations of compensation,^v this has been interpreted to require deduction of *trading amounts* for non-directed *market ancillary services* to determine allowable additional compensation. The claimants did not receive any *trading amounts* for *market ancillary services* during these *directions*, so no deductions were required.

4. Calculations of the claimed amounts

The *Directed Participants* submitted letters claiming additional compensation and spreadsheets and documents in support of the claimed amounts. These included copies of invoices for fuel

ⁱⁱⁱ CAISO (2018) Variable Operations and Maintenance Cost available at <http://www.caiso.com/Documents/VariableOperationsandMaintenanceCostReport-Dec212018.pdf> (last viewed 23 June 2021).

^{iv} Sam Lovick Consulting (August 2020) *Independent Expert Draft Determination of Additional Compensation 'Package 2' Directions Between February 2nd and February 9th 2020* available at https://aemo.com.au/-/media/files/electricity/nem/market_notices_and_events/market_event_reports/2020/200805-final-report.pdf?la=en.

^v *Ibid.*

and evidence substantiating other cost elements. Where relevant, we sought additional supporting information from claimants.

4.1. Claimant A

Claimant A was subject to 11 *directions* for system security issued by AEMO between 22nd July to 9th August 2023. Their additional compensation claim related solely to net direct costs comprising gas costs, gas transport costs, FCAS charges, start costs and vO&M costs. Claimant A did not submit any additional information in response to the draft determination.

4.1.1 Fuel costs

Claimant A's fuel and fuel transportation costs were supported by usage data and invoices from the gas suppliers. These were a sufficient basis for their estimates, which we accept.

4.1.2 FCAS recovery

We accept the Claimant A's claim for recovery of FCAS payments.

4.1.3 Variable O&M and start costs

Claimant A presented calculations of variable O&M costs and start costs supported by the same evidence previously supplied to and accepted by an independent expert in prior determinations.^{vi} We accept the claimants start and O&M cost estimates.^{vii}

The claims for events 348-1 and 349-1 present an interesting issue as regards interpretation of 'net direct costs'. These events are contiguous with an intervening period of voluntary operation, which raises the question of whether some share of the claimed start costs should be allocated to the period of voluntary operation rather than the *direction*. A similar situation arises in respect of events 344-1 and 344-3. The NER and definition of net direct costs provide little guidance on this.

In these instances, it seems unlikely that the claimant would have generated voluntarily in the period in question absent the prior *direction*, so it is not appropriate to allocate any start costs in this way. But this might not always be the case.

It would be helpful for claimants, in such instances, to confirm that they would not have voluntarily started and operated the unit absent the preceding *direction*.

4.1.4 Summary

Based on the foregoing, we assess allowable additional compensation under clause 3.15.7B for claimant A at \$928,146.

^{vi} Additional compensation for events 276-1, 277-1, 278-1, 278-4, 279-2, 280-2 and 281-1 in weeks 12 and 13, 2023.

^{vii} For a detailed discussion of the requirement for and subsequent acceptance of claims based on additional material submitted by the claimant, see the reports by Sam Lovick Consulting (2013) available at <https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/nem-events-and-reports/market-event-reports/directions-to-sa-and-nsw-generators-during-billing-weeks-9-to-12-2023>.

4.2. Claimant B

Claimant B was subject to 14 *directions* for system security issued by AEMO between 22nd July and 18th August 2023. These comprise directions to synchronise involving three unit starts, and for the remainder to remain synchronised, for periods where the units might otherwise have preferred not to operate. Their additional compensation claims related to net direct costs comprising gas costs, FCAS costs, start costs and vO&M costs. Claimant B did not submit any additional information in response to the draft determination.

4.2.1 Fuel costs

Claimant B supported its claimed fuel costs with invoices from the gas suppliers covering purchases under contract and at spot. The fuel costs were a weighted average of purchase costs at spot and purchase costs on contract. The claimant allocated all spot purchases to the directed generator, with consumption above the spot volume met with contract gas. Consistent with previous claims, the volume of gas consumed by the directed units was not measured directly but was derived indirectly from the heat rate curves for the units. The approach has been accepted in prior determinations. The spreadsheet calculations of fuel costs were correct.

The invoices show a significant difference between spot and contract prices for gas, so the allocation approach for these two sources significantly affects the compensation claim. We accept the claimant's allocation of spot purchases to the directed units before contract purchases on the basis that the units in question were not planning to run (hence the *directions*). It would not be appropriate to assume the claimant would contract for fuel for periods when they were not planning to operate. This approach has been accepted in prior independent expert determinations.^{viii}

4.2.2 FCAS recovery

We accept the Claimant B's claim for recovery of FCAS payments.

4.2.3 Variable O&M costs

Consistent with prior determinations, we are not satisfied with the dated source for O&M costs included in the claim, a confidential report prepared in 2008. Accordingly, we adopt the same approach as in prior determinations and base vO&M costs on those presented in AEMO's 2022 ISP^{ix} indexed by Adelaide CPI.^x This reduces the vO&M claim by approximately 11%.

^{viii} See, for example, Sam Lovick Consulting (August 2023) *Independent Final Determination of Additional Compensation for Directions in SA and NSW between 16 and 31 March 2023* available at https://aemo.com.au/-/media/files/electricity/nem/market_notices_and_events/market_event_reports/2023/final-report-sa-and-nsw-directions-billing-weeks-09-12-2023.pdf?1a=en.

^{ix} AEMO (2022) *Inputs, assumptions and scenarios workbook* available at <https://aemo.com.au/energy-systems/major-publications/integrated-system-plan-isp/2022-integrated-system-plan-isp>.

^x Available at <https://www.abs.gov.au/statistics/economy/price-indexes-and-inflation/consumer-price-index-australia>.

4.2.4 Start costs

Claimant B presented start cost estimates for three claims with support from the same dated source. This sets out the fixed cost, electricity consumption and fuel consumption required for the type of start involved. Based on the prior running regime evidenced in dispatch data, two of the claims were for 'cold' starts, one was for a 'warm' start, the former two requiring more time and more energy than the latter.

In contrast to vO&M costs, we accepted the 2008 report as the basis for start cost calculations. We did so because the physical elements of the start costs (MWh and GJ of electricity and fuel consumption) from 2008 were unlikely to have changed much over time and may even have increased, making the claimant's assessment conservative. The costs of electricity and fuel applied to these physical measures were both based on current commodity prices, not on prices from 2008 indexed by CPI, reducing the scope for biases from indexation. Energy costs for the starts represented between 86% and 96% of the claimed costs. Indexation since 2008 of other start costs contributes a *de minimis* share of the claimed start costs and is therefore inconsequential.

Claimant B did not respond to comments in the draft related to the indexation of the non-energy related components of start costs and the use of contract rather than spot fuel prices in their assessment of start costs. In the absence of any submission, we retain the figures presented in the draft.

4.2.5 Total additional compensation

Based on the foregoing, we assess allowable additional compensation under clause 3.15.7B for claimant B at \$619,390.

4.3. Total additional compensation

Based on the foregoing and in accordance with clause 3.12.3(c)(1)(B), we have determined that the total amount of clause 3.15.7B compensation payable to the *Directed Participants* in respect of the 25 *directions* is \$1,547,536.