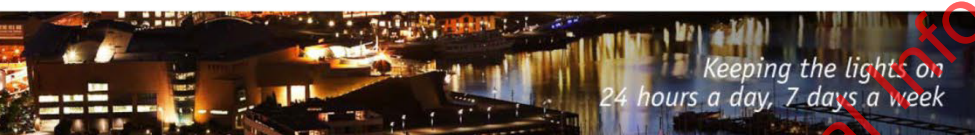


System Operator TAS Report

TAS101 - Actions to Correct the Dec-19 Undesirable Trading Situation Closeout Report

28/01/2022



Keeping the energy flowing

SYSTEM OPERATOR

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VERSION HISTORY

Version	Date	Change
1.0	28/01/2022	Draft for Electricity Authority Review

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Glossary

- EA - Electricity Authority
- IPLC - Integrated Project Life Cycle
- IR - Instantaneous Reserve
- TAS - Technical Advisory Services
- SO - System Operator
- SPD - Scheduling Pricing and Dispatch

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1 Executive Summary

In December 2020, the Electricity Authority (Authority) decided that an undesirable trading situation (UTS) occurred between 3 and 27 December 2019 ('UTS period'). On 11 March 2021 the Authority published a consultation paper titled Proposed Actions to Correct Undesirable Trading Situation 2019, which proposed actions to correct the UTS and attempt to restore the normal operation of the market. A TAS SoW (TAS101) was submitted by Transpower in accordance with para. 4.13 of the Final Decision – Actions to Correct Undesirable Trading Situation December 2019 (Decision).

This report outlines the scope of work for TAS101, performance against agreed timeline and budget, the outcomes of the project, noting any lessons learnt and provides a recommendation regarding completion.

Transpower worked collaboratively with both the Authority appointed auditors and NZX to exchange necessary information to successfully complete processing of final pricing data and produce revised settlement information.

Testing identified early in the process an issue with a high spring washer in the initial revised final prices received from the NZX pricing manager. NZX moved quickly to provide a replacement file to enable testing to resume within the agreed timeframes. Verification of testing outputs was at times challenging due to the volume of data associated with correcting the UTS. Should a similar UTS occur Transpower will utilise additional tools to assist with the verification process. Any datapoint anomalies identified during testing were successfully resolved and test results verified with NZX and the Authority appointed auditors.

Transpower has successfully completed processing final pricing data, produced revised settlement information using the revised data in production systems. The revised ancillary services files were provided to the NZX Clearing Manager on schedule. The LCE Invoices were produced in December 2021 and settled in January 2022 as per the agreed timeframes.

All Actions to Correct the Undesirable Trading Situation December 2019 (Decision) issued by Electricity Authority on 17 August 2021 as assigned to Transpower have now been completed. Accordingly the recommendation is to close TAS101.

2 Purpose of this report

This report summarises and confirms the completion of the TAS101 scope and deliverables in the agreed SOW in order to support a decision to close the project.

3 Introduction

On 22 December 2020 the Electricity Authority (the Authority) determined an Undesirable Trading Situation (UTS) had occurred between 3 and 27 December 2019. On 17 August 2021 the Authority released their Actions to Correct (ATC) determination for the Dec-19 UTS. The ATC are detailed at <https://www.ea.govt.nz/assets/dms-assets/28/Final-Decision-Actions-to-Correct-2019-Undesirable-Trading-Situation.pdf>.

In summary the ATC resettle the wholesale electricity market for Dec-19 using final prices recalculated using offer price caps of \$13.70/MWh for Meridian's and Contact's South Island hydro generation. A TAS SOW was submitted in accordance with para. 4.13 of the Final Decision – Actions to Correct Undesirable Trading Situation December 2019 (Decision

3.1 Purpose of the project

The scope of work for the project included:

- a) Assistance to the pricing manager to recalculate prices for the UTS period - The Decision 4.15-4.17 and 4.51
- b) Recalculation of the LCE for December 2019 by the grid owner. The Decision 4.30 and 4.51
- c) Recalculation of the ancillary services for December 2019 by the system operator, including constrained on payment values for instantaneous reserves. The Decision 4.22-4.23 and 4.51
- d) Repopulation of Transpower databases with the revised prices for December 2019 - required to deliver scope items b) and c). The Decision 4.22-4.23, 4.30, 4.32, and 4.51
- e) Oversight of the processes above and coordination with NZX, as clearing manager and pricing manager. The Decision 4.12, 4.32, and 4.51
- f) Progress updates and escalation, if necessary, with the Authority. The Decision 4.32
- g) Assisting the FTR Manager with any queries they may have. The Decision 4.20-4.21 and 4.51
- h) Assisting the Authority appointed auditors as required. The Decision 4.34-4.36 and 4.51
- i) This close out report.

The scope of work excludes:

- Any actions not allocated to Transpower in the Final Decision – Actions to Correct Undesirable Trading Situation December 2019 (Decision).

3.2 Deliverables

The deliverables for the project were:

- Actions to perform the scope of work as detailed in section 3.1 above

Actions to Correct Undesirable Trading Situation December 2019 (Decision) as detailed in section 3.1 were completed by 25 January 2022.

4 Project Performance

	Baseline	Actual	Variance
Start Date (TAS Brief Approval)	6/09/2021	19/10/2021	38 days
Finish Date (Actions completed)	25/01/2022	25/01/2022	0 days
Hours	██████████	██████████	██████████
External Costs (excl GST)	S9(2)(b)(ii) ██████████	██████████	██████████
Total Budget (excl GST)	S9(2)(b)(ii) ██████████	██████████	██████████

Note: Cost estimates and actuals provided are calculated based on the base rate. However, given the number of TAS initiatives running in the current Financial Year, it is possible that the cost (excluding external costs) will be higher than noted in the SoW due to the fact that the higher hourly rate will be in effect.

Time Variances

Work commenced in accordance with baseline start date at the request of the Authority. The SoW was approved on 19 October 2021. The TAS progressed in accordance with agreed milestones. Revised final pricing data was received from NZX pricing manager on 1 September 2021. Testing of the data indicated an issue with a high spring washer. This issue was rectified by NZX and a replacement file for 7 December was provided on 23 September 2021. Core testing was completed on 29 October 2021, verification of results were finalised on 2 November 2021. All datapoint anomalies identified during testing were resolved. The revised ancillary services file was provided to NZX one day earlier than required. LCE invoicing and settlement occurred within agreed timeframes.

Effort & Cost Variances

The total estimated hours were within budget, with some economies achieved during production processing, external supplier (Red Rock) activities were completed within budget.

5 Summary of Outcomes/Recommendations

Processing of revised pricing has been completed in production systems. Revised ancillary services files were provided to the NZX Clearing Manager within the agreed timeframe. Tasks were delivered to schedule. Noting the Grid

Operator(GO) LCE calculation could not be finalised until the GO was advised of the final revised Dec-19 LCE amount it will receive from the Clearing Manager. The Clearing Manager advised the final value will not be known until interest was been calculated as part of the November 2021 'normal' monthly settlement process. Invoices were issued in December and settlement occurred in January 2022 in accordance with the agreed schedule. TAS101 is complete and the recommendation is to close the SOW noting that final hours for January 2022 will be included in January 2022 financials.

6 Joint Lessons Learnt

A joint lessons learnt session had not been held at time of writing. Transpower's lessons learnt are noted below:

Situation	Lesson
There was limited centralised coordination of dependencies between organisations beyond initial milestone agreement. Each individual organisation e.g. Transpower, NZX, the Authority and RBP had to contact each other independently to ascertain if collectively we were tracking to schedule.	When there are multiple organisations involved in a coordinated effort to deliver a project, appointing a lead organisation to activity coordinate the parties, would result in better communication.
The requirements of the audit plan were not known until testing was underway. There could have been a more efficient way to support the audit process had the requirements been known in advance.	Ascertain audit requirements in advance of testing to ensure the required evidence of testing are produced as outputs and in an appropriate format e.g. include any necessary notations.
The duration and number of impacted parties of a UTS exponentially increases the dataset that must be tested and corrected. Verification of test data is not easily performed using standard office tools.	Consider the volume of data when determining the toolset required to verify the data and engage the necessary technical skills to support this process.
The remediation process required to accommodate the adjustment to pricing to rectify a UTS impacted a number of systems. The process had not been undertaken for some time and never at this scale.	The Test Plan provided a structured approach to determining the steps to make the necessary data adjustments and the cross system verification process required.