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| market event report | | |
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| Participant File server Incident 30 April 2015 | | |
| Published: **June 2015** |  |  |

Important Notice

#### Purpose

AEMO has prepared this report to advise its consideration and determination of an incident using information available as at 11 June 2015, unless otherwise specified.

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# Introduction

This report provides an overview of the incident on Thursday 30 April 2015, where access to AEMO’s Electricity Market Management Systems (EMMS) participant file share server was disrupted for 26 minutes.

In response to reduced performance on the participant file share, AEMO took routine action to move affected applications to an alternative server. When applications were restarted on this alternative server, a critical application which controls network access did not restart correctly. This prevented participants from accessing the file share between 1536 hrs and 1602 hrs.

AEMO rectified the issue by restarting the failed application at 1602 hrs.

This report addresses several issues related to the incident, including:

* Whether AEMO correctly applied its internal procedures while managing the incident.
* Whether participants were informed of the incident in a timely manner.
* Whether the market should have been suspended during the incident.

This report also presents a market impact assessment, and AEMO’s actions to prevent reoccurrence of this event.

# Background

## Participant access to NEM rebidding systems

NEM participants have access to AEMO’s rebidding systems and market data via the following two methods:

* **A participant file share server that utilises file transfer protocol (FTP).**

This provides participants with secure access to their own set of folders, and read-only access shared folders that contains public data. This method allows bulk changes to be loaded in a single transaction.

* **A web-based system, accessed through a browser front-end.**

This provides a secure web interface for users to interact with AEMO’s web-based applications. This method requires changes to be made one-at-a-time.

Both systems are maintained and supported by AEMO 24 hours per day, and both provide participants with the capability to submit bids. The web-based system is often used as the primary system for participants with smaller portfolios, but it is important that all participants remain familiar with its operation.

## Process governing market suspension

Under clause 3.14.3(a)(3) of the NER, AEMO can suspend the electricity market when it becomes impossible to operate in accordance with the NER. To assist in understanding when this might occur, AEMO has published a guideline[[1]](#footnote-1) which sets out its process in deciding whether market suspension is required.

If a rebidding system has failed, all of the following criteria must be met before AEMO will suspend the market:

* Rebidding failure is due to AEMO Systems and affects all Market Participants for both main and back up rebidding systems.
* Rebidding failure has extended beyond six dispatch intervals (30 minutes).
* The appropriate IT system will not be available within a reasonable period (more than 10 minutes).
* If the continued use of non-conformance procedures would cause power system security issues.

# Event Details

## Sequence of the Events

At 1445 hr on 30 April 2015, AEMO identified performance issues on the Participant file share server. AEMO decided to transfer the affected applications to an alternative server. The transfer was completed at 1536 hr, however, during this transfer a critical application that connects to the network device had initiated but was not functioning correctly.

This failure prevented participant connections to the server and prevented participants from using it to submit bids. No error messages were reported by this application.

AEMO was first contacted regarding IT issues via a support hub enquiry at 1542 hr, and identified the file share connection problem at 1551 hr. The application was restarted at 1602 hr and this resolved the access issues.

For 26 minutes participants were unable to submit bids via the file share server. Participants were able to submit bids during this time through the Web Portal.

Participants were first informed of the incident via the AEMO Help Desk Bulletin (no. 1566) at approximately 1726 hr on 30 April 2015. This was followed by a market notice (no. 48858) issued at 1149 hr on 1 May 2015.

The incident was discussed at the National Electricity Market (NEM) Wholesale Consultative Forum meeting on 27 May 2015.

## Market Impact

Spot prices in the NEM were not volatile during the event and surrounding periods. The 30-minute regional spot prices for trading intervals ending 1600 hr and 1630 hr were between $31/MWh and $41/MWh.

Approximately 40 participants were connected to the file share server immediately before the incident. AEMO received a number of enquiries from participants during the incident, mostly regarding difficulty in receiving data from the file share server. None of the enquiries related to participant inability to submit bids.

AEMO’s log file shows that one participant who was using the file share server did switch to the Web Portal during the incident and successfully submitted a number of bids. No bids were received via the file share server during the incident period.

Immediately after the issue was resolved at 1602, two bids were submitted. Figure 1 shows the number of bids submitted per minute via the file share server during incident window and surrounding periods.

After the outage, AEMO sought impact statements from those participants who appeared to be connected to the file share prior to the incident. Two participants responded and indicated that the incident had no impact on them. No responses were received from other participants.

Figure 1 - Number of bids submitted via file share server



*File share connectivity restored*

*File share server incident period*

# Issues

## Identification of File Share Incident

Following the transfer of the file share server at 1536 hr, AEMO verified that all internal applications had started, and confirmed that the transfer was successful. AEMO was not aware that participants could not connect to the file server until an enquiry was made via AEMO’s support hub.

AEMO’s investigation of the incident highlighted that AEMO’s procedure for file server transfers did not include a check on whether participants were able to connect to the file share server. Since the incident, the procedure has been amended to include this step.

## Communication of File Share Incident

Participants were informed of the incident approximately 1.5 hrs after the file share incident was resolved via an AEMO Help Desk Bulletin. A market notice was issued on the following day, and AEMO directly contacted participants who may have been impacted by the incident.

On 27 May 2015, AEMO briefed the NEM Wholesale Consultative Forum on the incident and included additional information about the differences between, and usage of, the file share and Web Portal systems.

AEMO is reviewing its communication processes to improve the speed of updating participants in the future.

## Market Suspension

AEMO’s criteria for market suspension was not satisfied during this incident. The failure did not extend beyond six dispatch intervals, and although there was a failure of the rebidding system via the participant file share server, there was an alternative means available that was fully operational at that time.

## Reliability of participant rebidding system

During the file share incident, AEMO’s Web Portal remained available as an alternative means for participants to rebid. A total of nine bids, for a single participant, were submitted via the Web Portal during the incident.

At the NEM Wholesale Consultative Forum in May, stakeholders questioned whether the Web Portal would be suitable to act as an alternative system during extended outages – particularly in light of its inability to submit bids for an entire portfolio at once.

Including this incident, the participant file share has experienced 99.995% uptime over the last 12 months, and 99.9975% over the past 24 months. Given this level of availability, AEMO does not currently plan to upgrade the Web Bidding system to match feature sets with the participant file share.

# Conclusions and recommendations

Connectivity to AEMO’s participant file server was unavailable for 26 minutes following a server transfer on 30 April 2015. There was no market impact from this incident, as sourced from several potentially impacted participants.

AEMO’s event investigations have highlighted the following:

* AEMO followed its internal procedure to transfer the server however the procedure did not include a check of the participant’s file share server connection.
* There was a delay in communicating the incident to participants.
* AEMO’s decision not to suspend the market was correct.

In response to the incident, AEMO has:

* Updated its internal IT procedures to include a check of participant connectivity during transfers.
* Added a new IT alert to monitor for the specific exception generated by this incident.
* Added a new IT alert to continuously monitor connection statistics for the file share.

AEMO is continuing to:

* Liaise with Microsoft to better understand the initial server slowdown.
* Review its communication procedures with the intention to inform participants as soon as possible when such incidents are identified.
* Review and assess the suitability of the published documentation on AEMO’s bidding systems to ensure that clear, consolidated advice is available to participants showing how to use the file share and web portal systems for bidding.

Glossary

|  |  |
| --- | --- |
| Abbreviations | Term |
| AEMO | Australian Energy Market Operator Ltd |
| EMMS | Electricity Market Management System |
| FTP | File Transfer Protocol |
| NEM | National Electricity Market |
| NER | National Electricity Rules |
| TI | Trading Interval |

1. AEMO. 23 October 2012. *Failure of Market or Market System SO\_OP3706.* Available: http://www.aemo.com.au/Electricity/Policies-and-Procedures/System-Operating-Procedures/Failure-of-Market-or-Market-Systems-SO\_OP3706 [↑](#footnote-ref-1)