



Incident Report

22 February 2009



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1. Introduction

On 22 February 2009 failure of both air-conditioning units in our service provider's server room caused overheating and subsequent failure of WEMS market related IT systems.

Despite successful failover to IMO's back up sites, a residual dependency on our service provider's domain name service meant that it was not possible to restore systems in time to avoid suspension of the Short Term Energy Market (STEM).

The purpose of this report is to:

- Outline the events that lead to the suspension and the steps undertaken by Market Operations in response to these events;
- Discuss the impact of the suspension on market participants; and
- Outline steps that the IMO will take to prevent re-occurrence.

As the market operates in Western Standard Time (WST), all references to time of this report are WST.

2. The Incident

The IMO production market systems are located in a server room owned and maintained by an external service provider. One of the air-conditioning units failed. The second unit continued to work effectively for a number of hours but then it also failed. The temperature inside the server room climbed beyond the operating temperature range for our servers and they shut down automatically.

3. The Timeline

At the commencement of his shift, the duty Market Operator (working offsite) found that he was unable to access the WEMS systems. In line with normal contingency procedures, the Senior Operator, Manager Market Operations and IMO IT department were contacted by the Duty Operator.

A second operator was requested on site to check availability of systems. By this time (7:00 am WST), IT was in attendance and in response to the conditions in the server room shut power to all IMO equipment and commenced the failover process in an attempt to restore normal services to the Market from the IMO's backup site in East Perth.

Market Operations began the process of advising, by phone, all participants of difficulties with systems (under 6.4.5), and that, all scheduling day events (opening and closing of market windows) would be delayed by two hours (under 6.4.6).

The failover process was complete by 10.00am and Market Operations was requested to commence testing and validation of backup systems at 10.15am. The WEMS readiness checks found that access to market systems had not been restored by the successful completion of failover and on further investigation the IT department advised that because a dependency

remained on equipment affected by the overheating event (a DNS server owned and maintained by our external service provider), that it would not be able to restore systems before 11:00 am

As a result, (under MR 6.10) the decision was made to suspend the STEM market for trade date 24 Feb 2009. Participants were advised of this by phone by 11.15am.

Under MR 6.5.3 participants were also advised that they could submit Resource Plans via email or fax, due to the failure of IMO IT system.

The issue regarding the DNS server was rectified at 6:00pm.

4. Operational Consequences

In the event of an IMO IT system failure, the IMO must accept Resource Plan's from market participants by other means (MR 6.5.3). Operations had contacted each participants advised of the suspension and requested they submit their Resource Plan to operation's alternate email address. By 4:00pm the resource plan was collated and submitted to System Management. Confirmation was made with System Management ensuring that the Resource Plans were received and correct.

Once the system was restored, the operator followed the steps set out in the Contingency Procedure and ensured the necessary events for the day were completed. This includes but not limited to:

- Calculating and publishing the Net Contract Positions;
- Publishing the STEM market reports;
- Entering the Suspension into IMO system.

Further checks were carried out by operations to ensure that the suspension would have minimal disruption to market and Daily Operations for the following day.

Checks include:

- Testing of IMO's IT system was functioning properly on the back up site – ensuring participants can access our systems in preparation for Monday's trading; and
- Ensuring the events listed above were calculated and completed correctly;

5. Incident Analysis and Outcomes

5.1 IT Systems

- The cause of the system failure stemmed from the failure of both air-conditioning units in the primary site server room.
- The fail-over to the backup site was delayed due to the dependency on external service provider hardware which was located in the same server room.
- The IT department will take action to eliminate the issue of the Domain Name Service having a single point of failure within the primary site.

5.2 STEM Suspension

The Operator on duty suspended the STEM for the Trading Day 23 February 2009 at 11.00am WST on the scheduling Day. Suspension was required at this time as chapter 6 of the Market Rules only allows the IMO two hours to delay STEM processes and the normal STEM submission window closing time is 09:50. Therefore a valid STEM result could not be determined. As there were no STEM submissions to determine prices, the half hourly balancing prices were set equal to the same prices seven days earlier, as required under the Market Rules.

6. Conclusion

A fault in the air-conditioning unit in the server room at Governor Stirling Tower caused the room server's to shut down which resulted in the failure of IMO's IT systems. Further difficulties relating to the previously unidentified dependencies on our service provider's equipment prevented access being restored.

The issues with the failover process and the ability of IMO operators to log into the backup site resulted in the systems not being available with sufficient time and subsequently, in line with market rule 6.10 a decision was made by Market Operations to suspend the STEM. As a result the IMO operators suspended the STEM for 23 February 2008.

Currently the IMO is running off the back up site in East Perth. The primary site air-conditioning units will be repaired within the next few days.