National Electricity Market of Singapore

**DETERMINATION OF THE MARKET SURVEILLANCE AND COMPLIANCE PANEL
MSCP/2008/D6**

Market Surveillance and Compliance Panel ("MSCP")
Mr Thean Lip Ping, Chair
Professor Lim Chin
Mr Lee Keh Sai
Mr TPB Menon

Date of Determination
7 July 2008

Party
Energy Market Company Pte Ltd ("EMC")

Subject
Failure to release on time the real-time schedules for periods 22 & 23 and short-term schedule for period 23 and to publish relevant information on 22 December 2007

Applicable Rule(s) in the Singapore Electricity Market Rules

1. Section 9.2.3 of Chapter 6

    "The EMC shall, in accordance with the market operations timetable, release to the dispatch coordinator for each registered facility a real-time dispatch schedule comprising that portion of the real-time dispatch schedule referred to in section 9.2.1.1 that describes the quantities of energy, reserve by reserve class and regulation scheduled in respect of that registered facility."

    The market operations timetable under Appendix 6A of Chapter 6 provides for the EMC to release the real-time dispatch schedule and real-time pricing schedule prior to 30 seconds before the beginning of the dispatch period.

2. Section 9.2.4 of Chapter 6

    "The EMC shall, in accordance with the market operations timetable, publish the following information as it pertains to each dispatch period:

    9.2.4.1   total load;
    9.2.4.2   total transmission losses;
    9.2.4.3   total reserve requirements by reserve class;
    9.2.4.4   total regulation requirements;
    9.2.4.5   energy prices associated with each market network node at which a generation registered facility or generation settlement facility is located…;
    9.2.4.6   the uniform Singapore energy price…;

9.2.4.7 reserve prices for each reserve class and reserve provider group…;

9.2.4.8 regulation prices…;

9.2.4.9 any system energy shortfalls reported by the market clearing engine;

9.2.4.10 any system reserve shortfalls, by reserve class, reported by the market clearing engine;

9.2.4.11 any system regulation shortfalls reported by the market clearing engine; and

9.2.4.12 a list of security constraints and generation fixing constraints applied."

The market operations timetable in Appendix 6A of Chapter 6 provides that the EMC must publish the market information set out in section 9.2.4 of Chapter 6 prior to 30 seconds before the beginning of the dispatch period.

3. Section 7.7.2A of Chapter 6

"Not later than 25 minutes prior to the commencement of the first dispatch period of the short-term schedule referred to in section 7.4A, the EMC shall, for each dispatch period included in the short-term schedule:

7.7.2A.1 release to the dispatch coordinator for each registered facility the projected schedules for energy, regulation and reserve, by reserve class, for that registered facility;

7.7.2A.2 publish the information described in section 7.7.3; and

7.7.2A.3 communicate to the PSO the projected schedules for energy, regulation and reserve, by reserve class, for each registered facility, together with the information described in section 7.7.3, in accordance with the system operation manual and any applicable market manual."

4. Section 7.7.3 of Chapter 6

"In accordance with sections 7.7.1, 7.7.2 and 7.7.2A, the EMC shall publish the following information for each dispatch period and for each market outlook scenario, pre-dispatch schedule scenario and short-term schedule:

7.7.3.1 the projected total load;

7.7.3.2 the projected transmission losses;

7.7.3.3 total reserve requirements by reserve class;

7.7.3.4 total regulation requirements;

7.7.3.5 projected energy prices associated with each market network node at which a generation registered facility or generation settlement facility is located….;

7.7.3.6 the projected uniform Singapore energy price….;

7.7.3.7 projected reserve prices for each reserve class and reserve provider group….;

7.7.3.8 projected regulation prices….;

7.7.3.9 any predicted system energy shortfalls;

7.7.3.10 any predicted system reserve shortfalls, by reserve class;

7.7.3.11 any predicted system regulation shortfalls; and

7.7.3.12 a list of security constraints and generation fixing constraints applied."

Facts and Circumstances

5.   EMC made a self-report on 3 January 2008 that the real-time schedules for periods 22 and 23 and short-term schedule for period 23 on 22 December 2007 published on the NEMS Trading website were not available to market participants in accordance with the Singapore Electricity Market Rules ("the market rules").

6.   According to EMC, it carried out an upgrading of the firewall of its IT network at its office at Republic Plaza on 22 December 2007.

7.   During the firewall upgrade, one of the necessary actions was to disconnect its existing firewall; this would also disconnect its external Internet connection at Republic Plaza. The disconnection of the external Internet connection rendered its primary Domain Name Server (DNS) unavailable. The function of the DNS is to provide the DNS services that direct a host name to a specific Internet Protocol (IP) address. It enables market participants' systems to access EMC's Corporate website and NEMS Trading website. To minimize the disruption to market participants, EMC had in place a secondary DNS located at its Ayer Rajah office.

8.   However, when the existing firewall was disconnected and the new firewall was connected to the network, the market participants could not access the EMC Corporate website and NEMS Trading website.

9.   Upon investigation, EMC found that both websites were unable to be accessed with the secondary DNS. EMC then immediately reconnected the existing firewall to the network. The primary DNS was checked to be working after the reconnection and the market participants were able to access both the EMC Corporate website and NEMS Trading websites.

10.   Further investigation by EMC found that during the periods between 10:29 am and 11:03 am on 22 December 2007, the secondary DNS had "hung" and did not take over the role of the primary DNS. EMC then re-started the secondary DNS server.

11.   As such, during the upgrading of the firewall between 10:29 am and 11:03 am on 22 December 2007, market participants were unable to access the EMC Corporate website and NEMS Trading website. This resulted in the market participants not being able to access the real-time schedules for periods 22 and 23 and the short-term schedule for period 23 although the schedules were posted on the NEMS Trading website.

12.   According to EMC, the incident could have been prevented if the availability of the secondary DNS had been appropriately checked to ensure that the DNS service was functioning. EMC also said that it would adopt the necessary processes to ensure that a similar breach does not recur.

13.   As a result of the above incident, EMC failed to release the following schedules on 22 December 2007
        (1)   the real-time schedules for periods 22 and 23; and
        (2)   the short-term schedule for period 23
        and to publish the relevant information within the deadlines required under the market rules.

14.   For the purposes of dispatch, the PSO, in the absence of the real-time schedule, used the relevant short-term schedule in accordance with the system operation manual.

Determination

15.   The MSCP had on 2 June 2008 sent a letter to EMC informing EMC that it was of the view that EMC was prima facie in breach of the market rules for the incident on 22 December 2007 and invited EMC to make written representations.

16.   On 16 June 2008, EMC submitted a letter with its written representations.

17.   After taking into consideration the written representations submitted, the MSCP determined that EMC breached sections 9.2.3, 9.2.4 and 7.7.2A of Chapter 6 of the market rules

18.   However, the breach was self-reported, inadvertent, rectified quickly and did not have a significant impact on the wholesale electricity markets.

19.   Therefore, the MSCP determined that the appropriate action to be taken was to issue a letter of non-compliance to EMC and to direct EMC to pay costs, fixed at $1,000.00.

Thean Lip Ping
Chair, Market Surveillance and Compliance Panel