DETERMINATION OF THE MARKET SURVEILLANCE AND COMPLIANCE PANEL
MSCP/2005/D16

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

Date of Determination
8 July 2005

Party
Energy Market Company Pte Ltd ("EMC")

Subject   (1) Failure to determine and release the real-time schedule and to publish information for period 10 on 27 September 2004; and
(2) Failure to determine and release the short-term schedule and to publish information for periods 10 and 11 on 27 September 2004

Applicable Rule(s) in the Singapore Electricity Market Rules

1.   <u>Section 9.2.1 of Chapter 6 of the market rules provides that:</u>

"The EMC shall, prior to the commencement of each dispatch period and in accordance with the market operations timetable, use the market clearing engine to determine for that dispatch period:

9.2.1.1   a real-time dispatch schedule, containing schedules of energy, reserve and regulation for registered facilities, to be released to the PSO, which in accordance with section 9.1.2 of Chapter 5 shall be deemed to constitute the dispatch instructions issued by the PSO to the applicable dispatch coordinators unless and until further dispatch instructions are issued by the PSO to a given dispatch coordinator pursuant to section 9.1.3 of Chapter 5; and

9.2.1.2   a real-time pricing schedule determined by the market clearing engine in accordance with section D.24 of Appendix 6D, including:

(a)   energy prices for each market network node;

(b)   the uniform Singapore electricity price;
(c)   reserve prices for each reserve class and for each reserve provider group; and
(d)   regulation prices."

The market operations timetable in Appendix 6A of Chapter 6 provides for the EMC to begin computing a real-time dispatch schedule using the market clearing engine 5 minutes prior to the beginning of the dispatch period.

The market operations timetable in Appendix 6A of Chapter 6 provides for the EMC to release the real-time dispatch schedule to the PSO prior to 30 seconds before the commencement of the dispatch period.

2.   <u>Section 9.2.3 of Chapter 6 of the market rules provides that:</u>

"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 that the EMC must release the real-time dispatch schedule to market participants prior to 30 seconds before the commencement of the dispatch period.

3.   <u>Section 9.2.4 of Chapter 6 of the market rules provides that:</u>

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

9.2.4.1.1   total load;
9.2.4.1.2   total transmission losses;
9.2.4.1.3   total reserve requirements by reserve class;
9.2.4.1.4   total regulation requirements;
9.2.4.1.5   energy prices associated with each market network node at which a generation registered facility or generation settlement facility is located…;
9.2.4.1.6   the uniform Singapore energy price…;
9.2.4.1.7   reserve prices for each reserve class and reserve provider group…;
9.2.4.1.8   regulation prices…;
9.2.4.1.9   any system energy shortfalls reported by the market clearing engine;
9.2.4.1.10   any system reserve shortfalls, by reserve class, reported by the market clearing engine;
9.2.4.1.11   any system regulation shortfalls reported by the market clearing engine; and
9.2.4.1.12   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 commencement of the dispatch period.

4. Section 7.4A.1 of Chapter 6 provides that:

"The EMC shall, in accordance with section 7.6 and Appendix 6A, determine a short-term schedule corresponding to the nodal load forecast described in section 7.2.1.1."

According to the market operations timetable in Appendix 6A of Chapter 6, the EMC is required to commence computing the short-term schedule at T-4 minutes.

5. Section 7.7.2A of Chapter 6 provides that:

"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."

6. Section 7.7.3 of Chapter 6 provides that:

"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

7. According to the EMC, the market clearing engine was unable to determine the short-term schedule for period 10 on 27 September 2004 within the stipulated deadlines. Checks carried out by the EMC indicated that the delay was due to a problem with the retrieval of data by an application within the Oracle database.

8. During dispatch processing, the Oracle database determines the optimal path for the application to retrieve data from the Oracle database for input into the market clearing engine. In this incident, the path decided by the Oracle database for data retrieval by the application was not optimal and resulted in more system resources being utilised for processing the short-term schedule.

9. To ensure that subsequent dispatch processing would be carried out on time, the EMC released more resources into the system by terminating the Oracle database backups which were also taking place at the same time as dispatch processing.

10. After terminating the Oracle database backups, the real-time dispatch schedule for period 10 was also not processed on time. Further checks by the EMC indicated that the Oracle database had stopped functioning. By the time the EMC restarted the Oracle database, it was unable to determine the short-term schedule for period 11 within the stipulated deadlines.

11. The incidents did not have a significant impact on the wholesale electricity markets.


Determination

12. On 11 April 2005, the MCSP issued a letter informing the EMC that it considered that the EMC had prima facie breached:

    a. sections 9.2.1, 9.2.3 and 9.2.4 of Chapter 6 of the Singapore Electricity Market Rules (the "market rules") when it was unable to determine and release the real-time schedule and to publish information for period 10 on 27 September 2004; and
    b. sections 7.4A.1 and 7.7.2A of Chapter 6 of the market rules when it was unable to determine and release the short-term schedule and to publish information for periods 10 and 11 on 27 September 2004

    within the deadlines required under the Singapore Electricity Market Rules and invited the EMC to make written representations. No written representations were received by the deadline stipulated.

13. The MSCP determined on the basis of the facts referred to above that the EMC breached sections 9.2.1, 9.2.3, 9.2.4, 7.4A.1 and 7.7.2A of Chapter 6 of the market rules.

14. However, the breach was self-reported, rectified quickly and without significant impact on the wholesale electricity markets.

15. Therefore, the MSCP determined that the appropriate enforcement action to be taken was to issue a letter of non-compliance to the EMC and to direct the EMC to pay costs, fixed at $1,000.
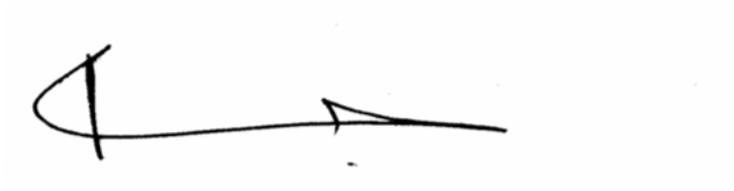
Joseph Grimberg
Chair
Market Surveillance and Compliance Panel