

## DETERMINATION OF THE MARKET SURVEILLANCE AND COMPLIANCE PANEL MSCP/2005/D4

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### **Market Surveillance and Compliance Panel (“MSCP”)**

Mr Joseph Grimberg, Chair  
Professor Lim Chin  
Mr Lee Keh Sai  
Mr TPB Menon

### **Date of Determination**

11 April 2005

### **Party**

Energy Market Company Pte Ltd (“EMC”)

### **Subject**

- (a) Failure to determine and release real-time dispatch schedule and publish information for periods 35, 36 and 37 on 11 March 2004 and
  - (b) Failure to determine and release short-term schedule and publish information for periods 36 and 37 on 11 March 2004
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### **Applicable Rule(s) in the Singapore Electricity Market Rules**

#### 1. Section 9.2.1 of Chapter 6

“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...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. 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 in 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. 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 commencement of the dispatch period.

4. Section 7.1.2A of Chapter 6 provides that:

“The short-term horizon shall, at any given point in time, cover twelve consecutive dispatch periods commencing immediately after the end of the current dispatch period.”

5. 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, the EMC is required to commence computing the short-term schedule at T-4 minutes.

6. 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.”

7. 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**

8. According to the EMC, its failure to determine and release the relevant schedules and publish the relevant information relates to there being several temporary directories in its IT system. These temporary directories were set at the security setting “world-writable” (ie external parties would have been able to write to these directories). As this posed a security risk to the IT

system, the EMC decided to change the security setting of the temporary directories to restrict access to only the EMC system administrator.

9. On 11 March 2004 at 1645hrs, the EMC implemented a change to the security setting by restricting access to these temporary directories. Shortly after the change was implemented, the dispatch processing functions in the IT system stopped. The EMC immediately reversed the change and restarted all the IT applications. By then, the market clearing engine had failed to produce the real-time dispatch schedules for periods 35, 36 and 37 as well as the short-term schedules for periods 36 and 37.
10. On investigations, it revealed that the Weblogic application (which processes dispatch runs) had also been using the temporary directories as working directories. By restricting the access to these directories, the Weblogic application was unable to use them and as a result, stopped functioning. Before this, the EMC was not aware that these temporary directories were used by the Weblogic application.
11. EMC informed us that prior to the implementation of the change, it did not conduct a test of this change in a testing environment. The reason for this was that the IT system was in the process of being upgraded to a new operating server. The system for testing changes had been upgraded and was running on the new operating server while the system for processing market clearing engine functions was still running on the old operating server. It was therefore not practical to test the change due to the differences in operating servers used.
12. Due to the perceived security risk caused by the "world-writable" security setting, the EMC decided to carry on with the change instead of waiting till after the system for processing market clearing engine functions had been upgraded to the new operating server. Together with its IT vendor, Hewlett-Packett, the EMC evaluated that changes to these temporary directories would not affect the proper functioning of the IT system.
13. This incident did not have a significant impact on the wholesale electricity markets.

#### **Determination**

14. On 25 November 2004, the MCSP issued a letter informing the EMC that it considered that the EMC had prima facie breached sections 9.2.1, 9.2.3, 9.2.4, 7.4A.1 and 7.7.2A of Chapter 6 of the Singapore Electricity Market Rules (the "market rules") and invited the EMC to make written representations. No written representations were received by the deadline stipulated.
15. 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.
16. However, the breaches were self-reported, rectified quickly and without significant impact on the markets.

17. 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