

**DETERMINATION OF THE MARKET SURVEILLANCE AND COMPLIANCE PANEL  
MSCP/2005/D11**

---

**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**

- (1) Failure to determine and release the real-time dispatch schedule and publish information for period 48 on 7 July 2004**
- (2) Failure to determine and release the short-term schedule and publish information for period 1 on 8 July 2004**
- (3) Failure to determine and release the real-time dispatch schedule and publish information for period 2 on 8 July 2004**
- (2) Failure to determine and release the short-term schedule and publish information for period 3 on 8 July 2004**

---

**Applicable Rule(s) in the Singapore Electricity Market Rules**

1. Section 9.2.1 of Chapter 6 provides that:

"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 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. Section 9.2.3 of Chapter 6 provides that:

“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 provides that:

“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 7.4A.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

**(a) Failure to determine and release the real-time dispatch schedule and publish information for period 48 on 7 July 2004**

**Failure to determine and release the short-term schedule and publish information for period 1 on 8 July 2004**

7. Due to a hardware problem (SAN PRODA bottom controller card) in the EMC IT system, the EMC notified all market participants that it would carry out an urgent system outage from 2302hrs and 2320hrs to replace the faulty hardware.
8. The EMC had intended to use the approximately 18 minute window period where no dispatch processing would take place to replace the hardware. However, the outage took longer than the expected period of time as the replaced hardware took a longer time to function.
9. At around 23:35hrs, the IT system resumed operations and the EMC manually triggered the dispatch run to produce the real-time dispatch schedule for period 48 on 7 July 2004 and the short-term schedule for period 1 on 8 July 2004. These were produced after the stipulated deadlines in the market rules.

**(b) Failure to determine and release the real-time dispatch schedule and publish information for period 2 on 8 July 2004**

**Failure to determine and release the short-term schedule and publish information for period 3 on 8 July 2004**

10. After the hardware replacement, the EMC failed to determine, release and publish information for the real-time dispatch schedule for period 2 and short-term schedule for period 3 on 8 July 2004 within the stipulated deadlines in the market rules because of the problem with the automatic job scheduler in the IT system.
11. EMC reported that the automatic job scheduler was turned off just before the scheduled replacement of the controller card and not turned on after the replacement was completed due to an oversight. Upon discovery of the incident, the job scheduler was re-instated at about 0035hrs and the EMC staff monitored for 1 hour that the market clearing engine was processing dispatch schedules successfully.
12. After this incident, the EMC took remedial action by implementing a checklist to ensure that all critical applications are being checked after a maintenance.
13. The incidents did not have a significant impact on the wholesale electricity markets.

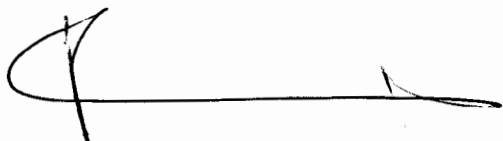
## Determination

14. On 25 November 2004, the MCSP issued a letter informing the EMC that it considered that the EMC had prima facie breached:

- 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 dispatch schedules and publish information for period 48 on 7 July 2004 and period 2 on 8 July 2004;
- 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 publish information for periods 1 and 3 on 8 July 2004

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, 7.4A1 and 7.7.2A of Chapter 6 of the market rules.
16. However, the breaches were self-reported, rectified quickly and had no 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