National Electricity Market of Singapore

DETERMINATION OF THE MARKET SURVEILLANCE AND COMPLIANCE PANEL
MSCP/2010/D5

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

Date of Determination
20 July 2010

Party
Energy Market Company Pte Ltd ("EMC")

Subject
Failure to determine and release the real-time dispatch schedules for periods 15 & 16 and the short-term schedules for periods 16 & 17 and to publish the relevant information on 14 March 2010

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 beginning of the dispatch period.

2. <u>Section 9.2.3 of Chapter 6</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 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.

3. <u>Section 9.2.4 of Chapter 6</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 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.

4. <u>Section 7.4A.1 of Chapter 6</u>

"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, the EMC is required to commence computing the short-term schedule 4 minutes prior to the beginning of the dispatch period.

5. <u>Section 7.7.2A of Chapter 6</u>

"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

"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 EMC, a market participant made two offer variation batch submissions at 5.13 am and 5:21 am on 14 March 2010 using its Smart System. However, due to a connection problem with the messaging queuing system, the offer batches were not able to be sent to EMC. The market participant then used an alternative method, the OMS (Offer Management System) module which does not require the messaging queuing system, to submit its offer batches. With the OMS module, it successfully submitted the two offer batches to EMC at 5:50 am.

8.   Around 6:15 am, the market participant concerned reported the connection problem to EMC. EMC succeeded in restarting the connection with it at 6:48 am and the pending offer batches submitted at 5:13 am and 5:21 am in the messaging queue were picked up by the EMC messaging system.

9.   At 6:57 am, EMC found that the real-time dispatch schedules for period 15 had not been successfully completed in the NEMS systems. EMC's investigation found that the NEMS dispatch run had been initiated on time but failed to complete. The Market Clearing Engine (MCE) in the NEMS systems displayed the error message "duplicate offers" and the real-time dispatch schedules for periods 15 and 16 and short-term schedules for periods 16 and 17 were not published.

10.   EMC then requested the market participant concerned to re-submit its offer batches that were delivered previously at 6:48 am to the NEMS systems. Accordingly, it submitted offer batches at 7:57 am and the NEMS systems validation module expired all previously available duplicate offer batches and made the latest offer batches available to the MCE.

11.   After the revalidation of offer batches, the dispatch runs were normalized.

12.   EMC said that the cause of "duplicate offers" error causing the NEMS dispatch run problem was that the NEMS systems offer validation module validated the offer batches submitted but was unable to expire the offer batches which were submitted through the OMS module. This was due to a bug in the current validation module which was unable to manage offer batches submitted from two different modules. This was the first time that MCE has experienced such a problem.

13.   To resolve this "duplicate offer" issue if the sequence of events as described in this incident happens again, the offer-expiry function within the offer validation module was modified on 13 May 2010 to enable the "self-expiry" of one of the offer batches when they are processed through the validation module.

14.   For the purpose of dispatch, the PSO, in the absence of the real-time dispatch schedule, used the relevant short-term schedule in accordance with the system operation manual. Price was determined by EMC re-running the market clearing engine in accordance with the market rules.

Determination

15.   On 9 June 2010, the MSCP issued a letter informing EMC that it considered that 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 EMC to make written representations. EMC replied that it would not be making written representations.

16.   The MSCP determined on the basis of the facts referred to above that 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.

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

18.   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 $1,300.

Thean Lip Ping
Chair
Market Surveillance and Compliance Panel