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CEO's Message

The annual Rules Change Panel (RCP) work plan prioritisation exercise took place in the first quarter of 2012. The RCP work plan is critical for the evolution of the National Electricity Market of Singapore (NEMS). Each year, EMC seeks feedback from market participants (MPs) to identify and prioritise issues for inclusion in the work plan, before presenting it to the RCP for consideration. The RCP work plan for FY2012/2013, which comprises a list of 12 issues and was approved in March, is outlined on page 2.

Still on market evolution – three rule changes related to the suspension order hearing process were approved by the Energy Market Authority in February. Details of these rule changes can be found in the article below.

EMC's annual business continuity preparedness (BCP) exercise, Exercise Thunderbolt, was successfully conducted in

March. I am pleased to note that there were no major disruptions to the operations of the NEMS during the two-day exercise, and would like to thank our MPs for their understanding and support. Read more about Exercise Thunderbolt on page 5.

Looking at the market, the Uniform Singapore Energy Price (USEP) increased by 16.8 percent in the first quarter of the year (Q1 2012) compared to the last quarter of 2011. At \$227/MWh, the Q1 2012 USEP was higher than the vesting contract hedge price of \$212/MWh for the same period. More details of the NEMS' performance in the first quarter can be found on page 3.

On the charity front, EMC colleagues, together with friends from PowerSeraya, Senoko Energy and Tuas Power Generation, took time off their busy schedules on 16 March to play host to more than 40 children from Child at Street 11 for a day out at the Maritime Experiential Museum

and Aquarium (MEMA). Child at Street 11 is a charity adopted by the Singapore electricity industry, and the outing has become an annual affair that is anticipated by both the industry as well as the children. Find out more about the children's first visit to MEMA on page 4.

Finally, the NEMS Market Report 2011 and the Market Surveillance and Compliance Panel Annual Report 2011 were completed in March. Hard copies of both reports have been mailed to MPs and other stakeholders, while soft copies are available on EMC's website at www.emcsg.com.

Dave Carlson Chief Executive Officer

Rule Change Updates

The following rule changes were approved by the Energy Market Authority in February:

Review of Suspension Order Hearing Process

This review incorporates three rule changes pertaining to the suspension order hearing process.

- Extend duration for suspension order hearing**
The existing default remediation and suspension process requires defaulting market participants (MPs) to remedy their default within two business days, failing which EMC will submit a request to the Market Surveillance and Compliance Panel (MSCP) to suspend the MP. The MSCP will then conduct and conclude a suspension order hearing within two business days, providing the MP with an opportunity to show cause as to why a suspension order should not be issued against it. The MSCP considered two business days inadequate and proposed an extension.
Extending the suspension process increases prudential requirements and, consequently, costs to the market. The RCP thus supported EMC's counterproposal to shorten the default remediation process by between one-and-a-half to two business

days, while lengthening the duration for suspension order hearing to four business days. By doing so, there will be no change to prudential requirements, nor additional costs to the market.

- Clarify that the MSCP should seek the Energy Market Authority's (EMA) approval before suspending a generation, transmission or market support services licensee**
The current drafting of the market rules requires a circular reading to conclude that the MSCP should seek the Authority's approval before suspending a generation, transmission or market support services licensee. A second rule change was supported to reflect the intended meaning more clearly.
- Flexibility of the MSCP in issuing suspension order and/or other orders**
Presently, upon conclusion of a suspension order hearing, the MSCP may issue a suspension order and/or make other orders pertaining to the defaulting MP. But based on the current rule drafting, the MSCP cannot make other orders without first issuing a suspension order. A third rule change was thus implemented to give MSCP greater autonomy in its determinations.



Rules Change Panel Work Plan Prioritisation Exercise 2012

In January and February this year, EMC consulted stakeholders of the National Electricity Market of Singapore (NEMS), namely market participants, Singapore Power (SP) Services, SP PowerGrid and the Power System Operator (PSO), for the annual Rules Change Panel (RCP) work plan prioritisation exercise. Incorporating stakeholders' feedback gathered during the consultation process, EMC presented the proposed updated work plan to the RCP for endorsement.

Issue identification

During the prioritisation exercise, stakeholders first identified issues for inclusion in the updated work plan. Apart from issues carried over from the previous work plan, the following 16 new issues were raised:

1. Provision for Price Revision when Generating Units Fail to Revise Their Offers in Good Faith (Proposed by Tuas Power Generation)
2. Review of Exceptions to Gate Closure Rule (Proposed by PowerSeraya)
3. Block Bidding for Generation Facilities (Proposed by Senoko Energy)
4. Removal of Singapore Government Treasury Bills as Acceptable Credit Support (Proposed by EMC, Market Operations)
5. Updates to the Market Manual (Market Rules Chapter 6) (Proposed by EMC, Market Operations)
6. Eligibility of Energy and Reserve Offers (Proposed by PSO)
7. Publication of Total Offer Capacity for Reserve and Regulation in the Dispatch Run (Proposed by Diamond Energy)
8. Publication of Total Offer Capacity for Energy, Reserve and Regulation in the Look Ahead Run (Proposed by Diamond Energy)
9. Publication of Intertie Status (Interconnected or Isolated) (Proposed by Diamond Energy)
10. Issuing Abnormal Condition Advisory for Security Constraints (Proposed by Diamond Energy)
11. Market Operator to Take Reasonable Action Within Reasonable Time to Rectify Known Errors in the Market Rules (Proposed by Diamond Energy)
12. Market Operator to Proactively Canvass Market Participants on Data Release Requirements Annually (Proposed by Diamond Energy)
13. Typo in Chapter 6, Section 2.2.3 of the Market Rules (Proposed by Diamond Energy)
14. Exemption of Incineration Plants from the Automatic Penalty Scheme (Proposed by Senoko Waste-to-Energy and Keppel Seghers Tuas Waste-to-Energy)
15. Adjustment of Recovery and Refund of Reserve Payments for Partial Provision of Reserve (Proposed by Diamond Energy)
16. Review of Constraint Violation Penalties (CVPs) and Price Bounds (Proposed by EMC, Market Administration)

Meeting with stakeholders

EMC then met stakeholders individually to clarify and refine the issues. Stakeholders then rated each issue according to its importance and urgency, or voted to remove issues from the list.

Updated RCP Work Plan 2012

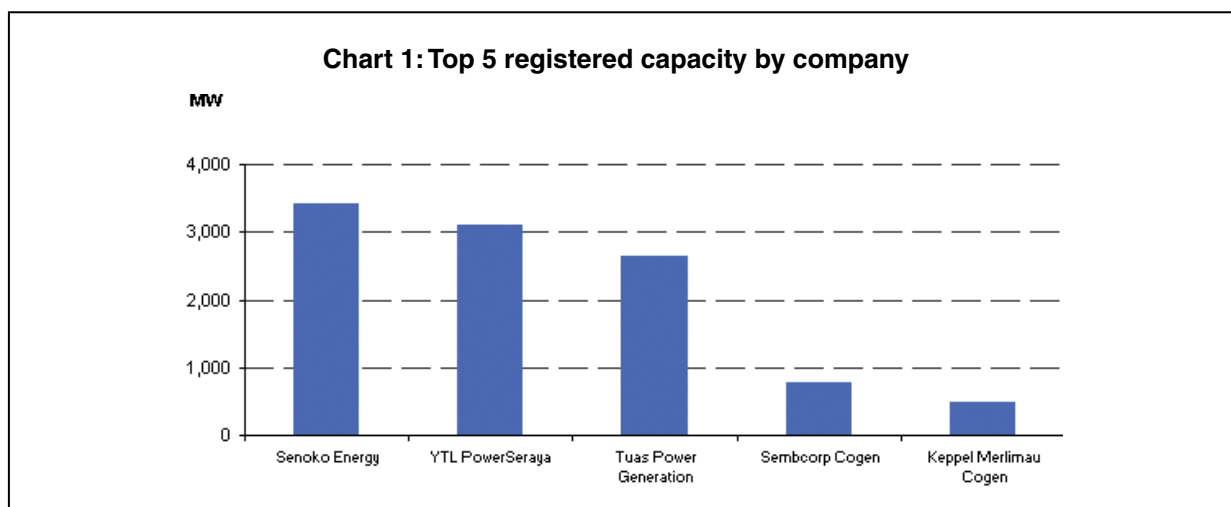
At the 60th RCP meeting on 13 March, EMC presented the proposed update to the RCP work plan for the RCP's consideration. The updated work plan agreed on by the RCP for commencement within the next 12 months is presented in the list below. The longer-term work plan covering the next two years, as well as the detailed description of each issue, can be found on EMC's website at <http://www.emcsg.com/MarketRules/RulesChangePanel/WorkPlan>.

Updated RCP work plan for FY2012/2013

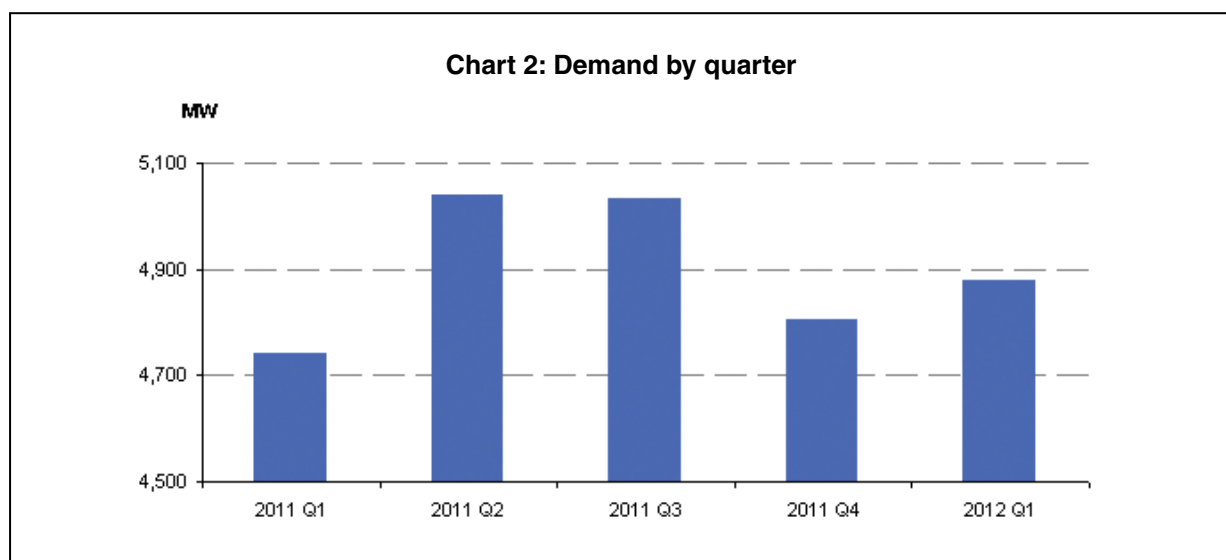
1. Introduction of Tie Breaking
2. Demand Side Bidding in the Energy Market
3. Updates to the Market Manual (for Chapter 6 of Market Rules)
4. Differentiation in probability of failure computation for multi-shaft plants and single-shaft plants
5. Provision for price revision when generating units fail to revise their offers in good faith
6. Adjustment of recovery and refund of reserve payments for partial provision of reserve
7. Review of constraint violation penalties (CVPs) and price bounds
8. Review of exceptions to gate closure rule
9. Typo in Chapter 6, Section 2.2.3 of the Market Rules
10. Transparency of transmission constraint and translation into dispatch arrangement
11. Publication of total offer capacity for Reserve and Regulation in the Dispatch Run
12. Publication of total offer capacity for Energy, Reserve and Regulation in the Look Ahead Run



Market Updates



In addition to the 431MW combined-cycle gas turbine (CCGT) unit registered on 17 January, Senoko Energy Pte Ltd (Senoko Energy) registered another equally sized CCGT unit with EMC on 22 March. These additions increased Senoko Energy's total registered capacity by 5.9 percent to 31.6 percent (Chart 1). The total registered capacity in NEMS has also increased by 8.7 percent to 10,796MW.

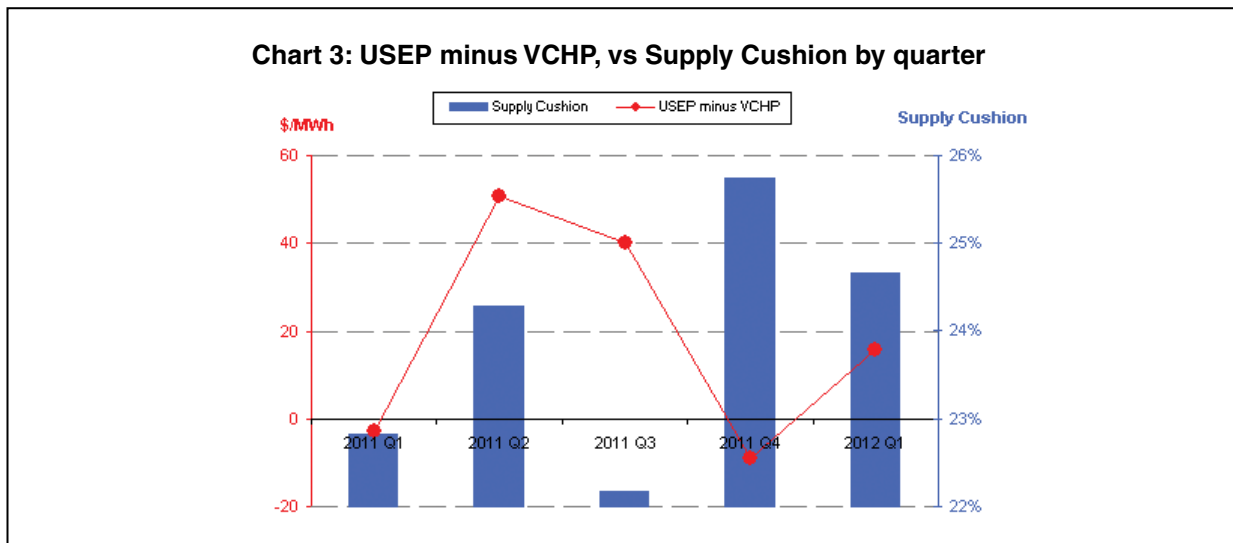


Demand grew by 1.5 percent in the first quarter of 2012 (Q1 2012) when compared with the fourth quarter of 2011 (Q4 2011), and 2.9 percent when compared with the first quarter of 2011 (Q1 2011). The growth in demand for the first quarter was in line with the growth in Singapore's economy based on the advance Gross Domestic Product estimates for Q1 2012 (source: MTI press release dated 13 April).

(continued on page 4)



(continued from page 3)



Supply cushion measures the percentage of total supply available after matching off forecasted demand. Comparing against Q4 2011, the Uniform Singapore Energy Price (USEP) increased by 16.8 percent to \$227/MWh when supply cushion fell by 1.1 percent in Q1 2012 (Chart 3). Comparing against the vesting contract hedge price (VCHP) in Q1 2012, USEP was higher than VCHP by \$16/MWh or 7.5 percent. This corresponded with a lower CCGT supply-to-demand ratio (0.99 in Q1 2012 versus 1.05 in Q4 2011), a lower supply cushion, and also higher High Sulphur Fuel Oil (HSFO 180 CST)¹ price which registered an increase of 9.3 percent to US\$735/MT from Q4 2011 to Q1 2012.

¹ The HSFO 180 CST oil price is used as a proxy for fuel prices. Source of HSFO 180 CST oil price is from Bloomberg.

NEMS Charity Initiative – Outing with Child at Street 11

On 16 March, over 50 volunteers from EMC, PowerSeraya, Senoko Energy and Tuas Power Generation brought more than 40 children aged two to 12 from Child at Street 11 to the Maritime Experiential Museum and Aquarium (MEMA). A childcare and after-school centre for underprivileged children, Child at Street 11 is the National Electricity Market of Singapore’s (NEMS) adopted charity.

The visit to MEMA was the first time the NEMS group brought the children to a museum, where they had an interactive experience of Southeast Asia’s historic maritime trade. The children began their tour with the Bao Chuan Show - a short film introducing Admiral Zheng Ho’s travels showcased via life-sized replicas of his treasure ship and massive fleet. Then followed a guided tour of The Souk, which represents eight Ports of Call.

The children were fascinated by each port with its distinct sights and smells and interesting stories which formed part of the ancient maritime trade routes. There were also many hands-on activities such as making and colouring their own Chinese junks, shadow puppetry (wayang kulit) and getting their “passports” stamped. The tour ended with an experiential Typhoon Show which featured a thrilling 360-degree immersive shipwreck experience.

It was an enjoyable day for everyone who participated in the outing and we would like to thank all market participants for their continued support of the NEMS charity initiative. We look forward to other NEMS activities in the future.



All of us at MEMA



The Souk



Exercise Thunderbolt

On 20 March, EMC conducted its annual business continuity preparedness (BCP) exercise known as Exercise Thunderbolt. The purpose of this exercise is to evaluate EMC's preparedness in the event that operations from the primary office site at Novena Square office are rendered impossible.

During the exercise, EMC's IT LAN (local area network) systems for e-mails, file storage and non-National Electricity Market of Singapore (NEMS) systems (such as Finance and HR systems) were diverted to the backup systems located in the EMC NEMS Data Centre. The backup systems were activated and the switchover process completed within 110 minutes (including traveling time by an advanced IT team to the alternate office). EMC's management team and key operational staff also relocated to the alternate office.

EMC's operational staff operated from the alternate office for the whole two-day exercise. On 21 March, the entire IT LAN systems were switched back successfully to the Novena data centre. EMC used this exercise to validate its BCP plans and fine-tune its business contingency processes. There was no disruption to the market, except for a brief delay in our response to market participants when the key operational staff were transiting from Novena Square to the alternate office.

With the successful completion of Exercise Thunderbolt, EMC has completed its BCP work plan for FY11/12 as detailed below.

Type of BCP Test	Date	Activity
BCP Site Readiness Test	Jun 2011	• Critical team moved to alternate office.
	Jul 2011	• IT LAN system switched over to EMC NEMS Data Centre.
	Mar 2012	
System Disaster Recovery Test	Nov 2011	• NEMS system switched over to Labrador site.
	Feb 2012	
Home Quarantine Order	Aug 2011	• Critical team carried out daily operations from home.
	Oct 2011	
Exercise Epsilon	Sep 2011	• All staff activated by phone. Management team and identified personnel reported back to office.
Desktop Scenario Test	Jul 2011	• Management team and identified personnel worked on the injects to ensure familiarity with emergency crisis and business continuity procedures.
Exercise Thunderbolt	Mar 2012	• All staff evacuated from office to simulate emergency situation.
Exercise Jaguar	Oct 2011	• Industry wide BCP exercise.

Visitor to EMC

On 6 March, EMC had the pleasure of welcoming Michael Zammit, Principal Market Development of EnerNOC. He was here to learn more about the National Electricity Market of Singapore (NEMS) and to share his knowledge on demand response (voluntary load curtailment during periods of tight supply).

Mr Zammit was first given a brief introduction to the Singapore electricity market by the Market Administration team from EMC. He then shared his own insights and experiences on demand response and issues based on his EnerNOC role. A lively question-and-answer session followed, which focused largely on design and operational issues pertaining to the implementation of demand response in a new market.

EMC values such visits as they provide us with an opportunity to exchange best practices and lessons learned with our counterparts in the energy sector.



Michael Zammit's session with EMC



User Forum

Market Information Sharing Forum (MISF)

The 62nd session of MISF held on 9 March covered the market performance for the National Electricity Market of Singapore (NEMS) in January and February, the progress update on system enhancements and some feature highlights for the Single Electronic Window.

The next MISF will be held on Friday, 11 May at 2.30pm. All MISF delegates are encouraged to register online.

Market Systems User Group (MSUG)

The bi-monthly MSUG forum was held on 19 April. Besides the regular updates on NEMS systems' availability and market incidents, participants were briefed on the requirements for the encryption of secured e-mail communication to EMC.

In addition, EMC briefed participants on the system enhancements related to the Recovery and Refund of Reserve and Regulation Payments, Publication of Registered Capacity by Facility, the schedule for phasing out older NEMS applications, and the progress of other projects for the NEMS systems including the Server Replacement Project.

The next MSUG is tentatively scheduled for Thursday, 21 June.

EMC Training Programme – Next Course on 17 and 18 May 2012

EMC will be holding the next run of its two-day course *Understanding Electricity Markets* on 17 and 18 May 2012. Our staff will be conducting six sessions covering the following topics:

- Understanding Electricity
- Overview of the Electricity Sector
- The National Electricity Market of Singapore and its Unique Features
- Pricing in Detail
- Settlement
- The Demand Side

The course dates for the rest of the year are as follows:

17 – 18 May 2012

16 – 17 August 2012

15 – 16 November 2012

We advise you to book early to secure your place in the course dates of your choice, and benefit from our early-bird discount.

Further details on the programme and on how to register are on our website, www.emcsg.com. For enquiries, please e-mail trainingprogramme@emcsg.com or contact Jan Lee at +65 6779 3000.

Send us Comments, Feedback or Questions

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Thank you in advance for your time and effort.

