



professional transparent cost-effective people ideas integrity commitment teamwork

### CEO's Message

I am pleased to report that the National Electricity Market of Singapore (NEMS) performed well in the first half of the year. The second quarter has been much stronger from a demand perspective, yet prices declined in the first two months. Full details of the decline are available in the article on page 2.

It has now been two years since we launched our two-day training programme in May 2005, and it has been a great success. Besides the many attendees from our market participants, whom we thank for their continuous support, the course has attracted many people from other industries and other countries. Their participation is evidence of the programme's success and the regional recognition of

Singapore's leadership in this field. For a review of the first two years of the programme, please see the article on page 2.

The Rules Change Panel's (RCP) work plan has been updated and agreed by the RCP, following the completion of EMC's annual work plan prioritization exercise with stakeholders. This is always an important exercise, as the work plan determines the schedule for addressing issues, whether ongoing or urgent, as well as those measures that would contribute to the long-term evolution of our market. Full details of the agreed work plan are on page 3.

Lastly, I am proud to highlight the excellent performance results that EMC achieved for FY2006-2007. Described in the article below,

the results demonstrate the efforts of every one of us at EMC who continuously strives to provide Singapore with a world-class market operation, while ensuring that EMC is run effectively and efficiently. I would like to thank all of our staff for their hard work and dedication as well as thanking market participants for their continued support of EMC. Looking ahead, we will, in partnership with all of our customers, endeavour to make further progress in the successful evolution of the NEMS.

Dave Carlson  
Chief Executive Officer

### Excellent Performance Results for FY2006-2007

EMC has exceeded its performance results – as measured by the Energy Market Authority (EMA) using the industry-approved Performance Incentive Management System (PIMS) targets – for the financial year 1 April 2006 to 31 March 2007 (FY2006-2007) in all areas but one.

Dave Carlson, CEO of EMC, was very pleased with the results, commenting that our performance rating reflects the high standard of service we want to achieve. EMC will continue to strive to improve our performance further and provide excellent service, despite the growing demands of our maturing market.

EMC achieved an unblemished performance for its pricing accuracy and recorded a near perfect score for its settlement function. The IT system availability was 99.96%, which is highly commendable, especially when considering that several major technology refresh initiatives took place during the year. Our challenge was to balance the opportunity and risk of adding value to the market while minimising the risk associated with such initiatives.

In the qualitative areas, EMC improved its satisfaction rating, and for the first time both the market assessment function and

customer responsiveness achieved a rating of 100%, despite higher targets than last year. However, our performance for rule change support was below target and below last year's performance. As the NEMS becomes increasingly more mature and EMC's role evolves to serve the changing market, some situations may serve to highlight the different interests of market participants. Despite these circumstances, we commit to improving our performance in the area of rule change support.

(continued on page 2)



(continued from page 2)

## EMC's Performance Against Targets

| Targets and Performance (%)                       | FY2005-2006     |                    |                | FY2006-2007     |                    |                |
|---|-----------------|--------------------|----------------|-----------------|--------------------|----------------|
|   | Approved target | Actual performance | Score (Points) | Approved target | Actual performance | Score (Points) |
| <b>Quantitative Measure:</b>                      |                 |                    |                |                 |                    |                |
| System availability                               | 99.75           | 99.96              | 21.00          | 99.85           | <b>99.96</b>       | <b>18.33</b>   |
| Pricing accuracy                                  | 99.60           | 100.00             | 25.00          | 99.70           | <b>100.00</b>      | <b>25.00</b>   |
| Settlement accuracy                               | 99.90           | 99.90              | 22.50          | 99.90           | <b>99.90</b>       | <b>22.50</b>   |
| <b>Qualitative Measure (satisfaction rating):</b> |                 |                    |                |                 |                    |                |
| Customer responsiveness                           | 75.00           | 80.80              | 5.80           | 80.00           | <b>100.00</b>      | <b>15.00</b>   |
| Market assessment                                 | 75.00           | 94.12              | 5.00           | 80.00           | <b>100.00</b>      | <b>5.00</b>    |
| Rule changes                                      | 80.00           | 73.90              | -3.05          | 80.00           | <b>50.00</b>       | <b>-5.00</b>   |
| Total points                                      |                 |                    | 76.25          |                 |                    | <b>80.83</b>   |

The PIMS bonus for the year amounted to \$448,617 compared to \$414,942 last year. The increase reflects a combination of the increase in the EMC revenue used for computing the PIMS bonus and EMC's higher rating.

EMC's auditors, Ernst & Young surveyed the market participants in May 2007 on the three qualitative measures and audited the results of the three quantitative measures.

We are presently working with the EMA to set our targets for our new financial year, which commenced on 1 April 2007.

## EMC's Financial Performance

|  | FY2005-2006  |              | FY2006-2007  |              |
|--|--------------|--------------|--------------|--------------|
|  | Actual (\$m) | Budget (\$m) | Budget (\$m) | Actual (\$m) |
| Administration fees                    | 27.22        | 27.40        | 27.40        | 27.49        |
| PIMS bonus                             | 0.42         | 0.40         | 0.40         | 0.45         |
| <b>Revenue from rendering services</b> | <b>27.64</b> | <b>27.80</b> | <b>27.80</b> | <b>27.94</b> |
| Manpower costs                         | 7.76         | 8.12         | 8.12         | 7.07         |
| Amortisation and depreciation          | 5.95         | 4.24         | 4.24         | 4.38         |
| Market operator licence                | 2.24         | 2.33         | 2.33         | 2.32         |
| IT services                            | 3.46         | 4.04         | 4.04         | 3.76         |
| Rental leases                          | 0.93         | 0.93         | 0.93         | 0.93         |
| Audit, legal and professional fees     | 0.96         | 1.07         | 1.07         | 0.85         |
| Others                                 | 2.06         | 3.25         | 3.25         | 1.79         |
| <b>Total costs</b>                     | <b>23.36</b> | <b>23.98</b> | <b>23.98</b> | <b>21.10</b> |
| Profit before tax                      | 4.58         | 5.16         | 5.16         | 7.08         |
| Net EMC fee (\$ per MWh) <sup>1</sup>  | 0.381        | 0.374        | 0.374        | 0.376        |

<sup>1</sup> based on 6.05TWh for FY2005-2006 and 6.19TWh for FY2006-2007 of energy traded per month

EMC's operational expenses were lower than the budget for FY2006-2007 by \$2.88 million and lower than the actual expenses for FY2005-2006 by \$2.26 million. This saving is testament to the effort we make at EMC to continuously look for ways to become more efficient and more

cost effective in the way we operate. Our management and board conduct a thorough budget review before we present it to the Rules Change Panel for review and finally to the EMA for approval.

At EMC, we continuously question

the status quo, we adopt appropriate management strategies to mitigate against our exposure to the risk of operational cost increases and we implement procedures and corporate governance processes to ensure that EMC is run effectively and efficiently.

## RCP Work Plan Prioritisation Exercise 2007

In February, EMC conducted a Rules Change Panel (RCP) work plan prioritisation exercise with the NEMS stakeholders, i.e., market participants, SP Services, the PSO and the EMA. The purpose was to update the RCP work plan on a two-year rolling basis and present it to the RCP for consideration.

### Issue identification

The first stage of the prioritisation exercise involved consulting the stakeholders to identify issues to be included in the updated work plan. Apart from issues that remained in the last work plan, stakeholders have also raised several new issues for consideration.

These include:

- (1) Trial of the proposed prudential methodology
- (2) Shortening of the settlement cycle
- (3) Implementation of agreed changes arising from the review of price revision in the Singapore Wholesale Electricity Market (SWEM)
- (4) New forms of collateral
- (5) Nodal prices not reflecting locational system marginal price – Modelling of Type 2 artificial line in the Market Clearing Engine (MCE)
- (6) Simultaneous/consecutive tripping of multiple Generation Registered Facilities (GRF)
- (7) Power station with only one remaining generation connection to the grid
- (8) Composition of the RCP
- (9) Payment for black-start capability ancillary service

### Meeting with stakeholders

The second stage of the prioritisation exercise involved EMC meeting with the stakeholders individually. Stakeholders were asked to prioritise the issues to be included in the updated work plan in terms of importance and urgency. They were also given the opportunity to clarify or define the scope of the issues.

The following themes and/or messages emerged from the consultation process:

- It makes sense for EMC to continue to work on issues upon which work has already commenced, with an aim to complete them as soon as possible before embarking on new issues; and
- It was raised that the issues confronting the RCP have become increasingly complex and have different impact on various parties. Hence, it is difficult or even impossible for the RCP to reach a unanimous agreement. In such a case, the RCP should close the issue after it has been discussed or debated by the RCP over a long time, say, a year. Besides avoiding delay in the completion of an issue, it also prevents too many resources being used on an issue where unanimous agreement can not be reached.

### Approach to prioritisation

EMC then consolidated the priority rankings and feedback obtained from all stakeholders. In drawing up the updated work plan for the RCP to consider, EMC took into account the following:

1. Priority ranking and feedback received from stakeholders during the consultation process: The priority ranking by stakeholders indicates which issues are likely to provide the most value to those parties that are directly affected by the performance of the market.
2. The need for EMC to complete the ongoing work streams, even though these may not be ranked highly by stakeholders: Since work has already begun for these ongoing work streams, it makes sense to complete them before EMC embarks on new issues. This is also in line with the message conveyed by many stakeholders during the consultation process asking EMC to focus on consolidation in the short run, i.e., to complete work on issues which are already in progress.
3. Views of the RCP members on which work streams are likely to contribute most to the long-term evolution of the NEMS: It is usually beneficial to pursue work streams that address current and urgent issues, as well as those contributing to the long-term evolution of the market.

*(continued on page 4)*

## Data Subscription Service for Non-Market Participants

At the request of non-market participants and with the approval of the EMA, EMC has been offering a data subscription service since 2004. This service provides subscribers with access to real-time market data, such as prices, system demand forecasts and advisory notices.

Early this year, EMC introduced two changes to the existing service as part of our on-going effort to provide value-added services to our subscribers. Subscribers now have access to the daily, weekly and

monthly market reports published by EMC, which provide updates on the performance of the NEMS with commentary.

EMC has also discontinued the bidding process for subscriptions as there is no longer a technical constraint on the number of subscribers.

More details about EMC's data subscription service can be found on the EMC website at [www.emcsg.com/subscription](http://www.emcsg.com/subscription).



## Updated RCP Work Plan 2007

At its 31<sup>st</sup> meeting on 12 March, EMC presented the updated RCP work plan to the RCP for consideration. The table below presents the updated work plan agreed by the RCP.

| Expected completion/<br>commencement date | Issue No. | Issue Title   |
|---|-----------|---|
| Within 9 months<br>(by December 2007)     | 3         | Review of price revision in the SWEM  |
|   | 15        | Nodal prices not reflecting locational system marginal price – Modelling of Type 2 artificial lines in the Market Clearing Engine (MCE)                 |
|   | 16        | Simultaneous/consecutive tripping of multiple GRFs  |
|   | 11        | Trial of the proposed prudential methodology  |
|   | 7         | The real time pricing schedule no longer reflects energy shortfall after EMC adjusts the nodal load forecasts following a PSO energy shortfall forecast |
|   | 1         | Equity of reserve payments to generators and ILs  |
|   | 17        | Power station with only one remaining generation connection to the grid   |
|   | 19        | Payment for black-start capability ancillary service  |
| Within 10–15 months<br>(by June 2008)     | 2         | Providing historical gencos' offer prices   |
|   | 12        | Shortening of the settlement cycle  |
|   | 6         | Accurate profiling of regulation requirement  |
|   | 4         | Compensation for excess regulation  |
|   | 13        | Implementation of agreed changes arising from the review of price revision in the SWEM  |
|   | 18        | Composition of the RCP  |
|   | 5         | Incremental enhancement of rule book drafting   |
| Within 16–24 months<br>(by March 2009)    | 14        | New forms of collaterals  |
|   | 8         | Review of scarcity pricing  |
|   | 10        | Review the need for a rewrite of the rule book  |
|   | 9         | Review the need for detailed design and implementation of a Financial Transmission Rights (FTR) regime  |

## Two Years of Success in Training

EMC first launched its training programme, Understanding Electricity Markets, in May 2005 and has since conducted ten sessions. The quarterly programme allows participants to understand the fundamentals of deregulated electricity markets, focusing on the National Electricity Market of Singapore (NEMS) and its unique features.

All sessions of our training programme have been fully subscribed since commencement, with over 20 participants for each session. More importantly, the feedback from

participants has consistently been both positive and encouraging.

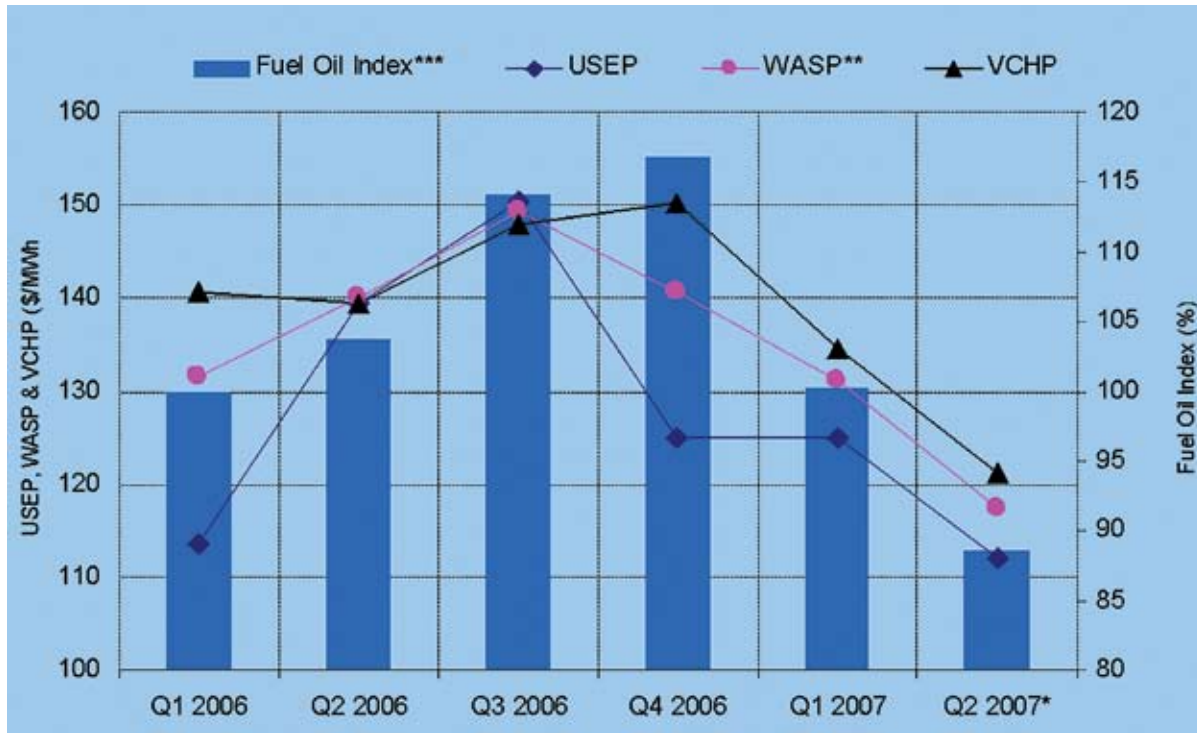
Over the two years, we have seen a change in the profile of participants. Initially, the programme was attended primarily by employees of the market participants of the NEMS who wanted a more in-depth understanding of the electricity market. In fact, for some market participants, the programme forms a part of their orientation programmes for new staff. However, we have recently seen an increase in the number

of participants from the financial, law and consultancy industries as well as from government institutions. This is an indication of the broader significance of the electricity market in Singapore and the credibility of the EMC training programme.

Overseas participants now form about 10% to 15% of our total pool, and the programme has attracted participants from as far away as Africa. To date, the country with the highest number of overseas participants is Hong Kong. Our staff have also conducted tailored



## Quarterly Fluctuation of USEP, WASP and VCHP



\*Data for Q2 2007 are compiled up to the end of May

\*\*WASP = (Vested Quantity x Vesting Contract Hedge Price) + (Non Vested Quantity x USEP)

\*\*\*Fuel Oil Index (%), takes Q1 2006 as the reference year

In the first two months of the second quarter of 2007, the uniform Singapore energy price (USEP) fell 10.5 percent from the previous quarter to a level similar to that last seen in the first quarter of 2006. Together with a lower vesting contract hedge price (VCHP) this led the weighted average settlement price (WASP) to drop below \$120/MWh. The graph shows these price trends, with all three prices dropping in line with each other.

Two factors that contributed to the decline in electricity prices were the introduction of two new combined-cycle gas turbine (CCGT) units, since the fourth quarter of 2006, as well as lower forward fuel oil prices. The decline occurred despite electricity demand reaching new heights in the second quarter of 2007, which is further elaborated in the EMC monthly trading report of May 2007. The report is available to the general public on the EMC website, [www.emcsg.com](http://www.emcsg.com)

programmes for Electricity of Vietnam (EVN), both in Singapore and Hanoi.

Encouraged by the growing interest of a more varied group of participants, not just from different industries but also from overseas, we are now exploring training venues outside the EMC office.

Further details on the programme and on how to register are on our website, [www.emcsg.com](http://www.emcsg.com). For enquiries, please e-mail [trainingprogramme@emcsg.com](mailto:trainingprogramme@emcsg.com) or contact Ong Pui Sze at +65 6779 3000.

### EMC Training Programme — Next Course on 16 and 17 August

EMC will be holding its two-day training course *Understanding Electricity Markets* on 16 and 17 August. Our staff will be conducting six sessions covering the following topics:

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

Further course is scheduled for:

- 15–16 November 2007

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

## User Forum

### Market Information Sharing Forum (MISF)

The MISF conducted on 16 May was well attended by industry participants. The information shared in this forum touched on price movements and provided possible reasons for the fluctuations, especially for those incidents of price spikes. The market stakeholders were also briefed on market share, market outlook and pricing reruns. As the market performance for the months of March and April was relatively stable, there were not many queries from the floor. The forum ended with an update on the MCE enhancement project that EMC is currently working on. A full brief on this enhancement, Mixed Integer Programming for Regulation Anomaly, will be provided during the next MISF, which will be held on Wednesday, 18 July.

### Market System User Group (MSUG)

Members of EMC's MSUG met for their regular update on 21 June. This meeting was attended by close to 20 participants. Participants were briefed on the NEMS Centralised Helpdesk, a project that was piloted internally within EMC from 1 April. The Helpdesk will serve as a single point of contact for internal and external enquiries pertaining to the NEMS. In June, the effectiveness of this service was reviewed, and we established that there are multiple benefits associated with it. For example, there is better call tracking and an ongoing trend analysis that highlights key areas of the NEMS that EMC should focus on. EMC intends to extend the use of the Centralised Helpdesk to all NEMS users in July.

The next MSUG is scheduled for Thursday, 23 August.

## Save the Date – Singapore Electricity Roundtable 2007



Monday, 12 November 2007  
Tuesday, 13 November 2007  
Raffles City Convention Centre

Energy Market Company will host the third Singapore Electricity Roundtable on 12 and 13 November. The Roundtable is dedicated to connecting influencers, decision makers, potential investors and experts in the electricity

and related industries. Senior executives and decision makers will debate the opportunities, challenges and issues of key importance to the industry in Asia Pacific and globally.

As in past years, we have invited several distinguished speakers, which include some of the industry's leading practitioners and thinkers, to

speaking on topics ranging from perspectives on the US market, alternative energy and LNG to privatisation and cross-border electricity trading. The panel discussion will address energy sustainability.

Last year's event attracted almost 150 people from Singapore, other countries in Asia Pacific, Europe and the US. Participants included presidents, CEOs, managing directors and others from the electricity and energy industry, financial institutions, law firms and consultancies as well as from our National Electricity Market of Singapore.

Mark your calendar so that you don't miss this year's high-profile event dedicated to the electricity industry. More information will soon be available on our website [www.emcsg.com](http://www.emcsg.com), and all *EMC Bulletin* recipients will receive full details shortly.

## Visit to SiTF Service Oriented Architecture Centre

More than ten market participants visited the Singapore Infocomm Technology Federation (SiTF) SOA (Service-Oriented Architecture) Centre on 22 June. This visit was mentioned during the last MSUG Meeting (see *EMC Bulletin* 37 for details).

The purpose of this visit to the centre at Nanyang Polytechnic was to provide participants with more information on web services and how the centre can help them to adopt such technology and architecture. Market participants were briefed on the facilities and services offered by the centre and contributed positive feedback on their visit.

This visit is part of EMC's efforts to promote the usage of web services among market participants. EMC has implemented web services that market participants can leverage to further automate their system linkages with the NEMS systems of EMC.

## Send us Comments, Feedback or Questions

The *EMC Bulletin* is written by EMC for you and we are always striving to improve our service. Therefore we are interested in any feedback you might have about specific articles and topics covered or comments and suggestions about other areas you would like to see included.

Please send your comments, feedback or any questions either via e-mail to [info@emcsg.com](mailto:info@emcsg.com) or via fax to +65 6779 3030.

Thank you in advance for your time and effort.

