



professional transparent cost-effective people ideas integrity commitment teamwork

CEO's Message

Reflecting back on 2006, it has been a successful year for the National Electricity Market of Singapore (NEMS), which welcomed two new market participants. Air Products joined as a new wholesale trader and Keppel Merlimau Cogen joined the generation side of the market when it commissioned its new plant. The NEMS has performed well in managing its response to the challenges of high oil prices, especially during the volatile summer period.

However, there is still room for further improvements, some of which were discussed during the Singapore Electricity Roundtable 2006 that we hosted in November. The event was viewed by speakers and participants as a great success, and the presentations and lively debates highlighted the issues and challenges that electricity markets around the world face. The presentation of the survey of key stakeholders and the panel

discussion raised some important issues that our Singapore market has to tackle to stay competitive and meet the needs of the industry. For EMC's part, I have taken note of the issues raised and we will be looking for the best ways to address them. For full details on the Roundtable, see the article on pages 2 and 3.

I am very pleased that we welcomed Kenneth Lim, our new Senior Vice President, Market Operations and Information Technology (MOIT), in November. Some of you may have already met Kenneth as he gets to know the market and its participants. His in-depth experience, both on the technology and customer service solution sides of operations, is being put to good use to lead the MOIT team into the future.

At EMC we value the feedback and suggestions of our market participants and try to implement these wherever possible. One recent example is the workshop on Managing Conflicts and Resolving Disputes

Effectively Through Mediation, which EMC's Market Assessment Unit organised for our market players' dispute management system (DMS) contacts. I would like to thank our Dispute Resolution Counsellor, George Lim, and Carol Liew from the Singapore Mediation Centre for conducting the workshop and for further developing the skill sets of the DMS contacts. See the article on page 4.

The new year will have already begun when you read this issue, but I would like to thank all of our market players and other supporters again for their efforts in working cooperatively with us to improve the NEMS in 2006. All of us at EMC look forward to continuing our successful working relationship with you, and I personally wish you a happy and prosperous new year.

Dave Carlson
Chief Executive Officer

Rule Change Update: Rules Change Panel to Have Consumer Representatives

In November 2006, the Rules Change Panel (RCP) successfully recommended a change to the Singapore Electricity Market Rules to include up to two representatives of consumers on the RCP. When consumer representatives are appointed in the early part of 2007, the market can expect further improvements in the decision-making process that drives the evolution of the market.

While any interested party can participate in the rule making process by submitting rule modification proposals, there was previously no consumer representation on the RCP. Consumers have a strong interest in the efficiency of the wholesale electricity market. The inclusion of consumer representatives in the early stages of the rule change process will further enhance the position of consumers, who ultimately pay for the cost of electricity.

Benefits should also arise from broader consumer understanding of the workings of the market and from an improved knowledge of the price determination process. During times of upward price pressure, as seen over the last year with higher than normal fuel input prices, having better informed consumers would help to minimise intervention in the normal functioning of the market.



Electricity Roundtable 2006 - A Great Success



EMC's Chairman, Tan Soo Kiang, in his welcome address to over 150 participants, speakers and panellists from Asia Pacific, Europe and the US

EMC attracted over 150 participants for the second Singapore Electricity Roundtable on 20 and 21 November 2006 at the Grand Hyatt Singapore.

Coming from a diverse spectrum of industries – including representatives of our market participants, the EDB, the electricity and energy industries, financial institutions, law firms and consultancies – the participants gathered to hear about topical issues in electricity and energy markets worldwide. Hong Kong, Malaysia, New Zealand, Singapore and the Philippines were some of the countries represented in the audience.

Over the two days, the participants listened to and participated in discussions and lively debates prompted by the speeches and the panel discussion. With such a strong show of interest by both returning and new participants, EMC would like to thank everyone for their firm support of the Roundtable.

Opening the two-day event, EMC's Chairman Tan Soo Kiang commented, "We recognise that we are living in an ever evolving and changing world and that we cannot isolate ourselves or afford to remain idle and complacent. We have to keep pace with the developments in the region and the world."

Lasse Holopainen, President of the Philippine Electricity Market Corporation, spoke first and introduced the wholesale electricity spot market in the Philippines, which started trading

in late June 2006. The audience learned about the market's structure, factors impacting the market, market performance so far, operational issues that it is facing and its future plans.

A change in viewpoints came when Michael Nikkel, former CEO of OneEnergy Ltd, provided a potential investor's perspective of regional power market developments. He said that given the projected market capacity needs in Southeast Asia (SEA) and Taiwan there is plenty for investors to consider. Each country has its own challenges and attractions for investors, and established investors are seeing China as a major competitor for the decade of growth ahead. Lastly, he said that

there are enough deals to keep investors interested for the foreseeable future.

An academic perspective on whether Singapore should focus on its own energy market or on developing into a greater marketplace for SEA was presented by Winston Koh, Associate Dean and Associate Professor of Economics, Singapore Management University. He came to the conclusion that there is potential for further cooperation in SEA and that Singapore is well placed to be a trading hub for energy derivatives in SEA.

Before the eagerly awaited panel discussion, EMC's CEO Dave Carlson presented the results of a survey that EMC conducted among key stakeholders on the industry views of the NEMS: what has been successful and what needs to be developed. All respondents viewed the introduction of the NEMS as positive, with the aspects of competition, market design and operation, market evolution, contestability, transparent and level playing field and demand side participation seen as key successes. However, despite the successes, the following were seen as the highest priorities for the NEMS to tackle or develop over the next five years: full retail competition, forward market, reduction or elimination of vesting contracts, fuel diversification, cost reduction, preservation of the principles of the NEMS and greater market interaction and transparency.

The panel discussion, Five years down the road



Like MSCP member Lee Keh Sai, many took the opportunity to raise questions and issues with the speakers and panellists





An exciting panel discussion moderated by EMC's CEO Dave Carlson with panellists Lim Kong Puay, President and CEO of Tuas Power, Neil McGregor, MD of PowerSeraya, Roy Adair, President and CEO of Senoko Power, David Wong, MSCP member and MD and CE of ABN AMRO Bank, Winston Koh, Associate Dean and Associate Professor of Economics, Singapore Management University

– How will the Singapore market have changed, saw Dave Carlson as the moderator with panellists Neil McGregor, MD of PowerSeraya, Roy Adair, President and CEO of Senoko Power, Lim Kong Puay, President and CEO of Tuas Power, David Wong, MSCP member and MD and Chief Executive of ABN AMRO Bank for SEA, and Winston Koh. It was a very lively debate with several issues identified as well as questions posed from the floor. The discussion covered full retail competition, forward markets, reduction and elimination of the vesting contracts and how the market would change if the big three generation companies had different owners. All panellists agreed that sustainability and carbon emission trading are issues of growing importance for Singapore and markets in Asia in general.

The first day ended with an evening of cocktails and dinner at the Asian Civilisations Museum. Guests had the opportunity to travel 5,000 years of Asian civilisations and cultures with brief guided tours before dinner.

Day two shifted its perspective, first to that of the consumer, with the MD of Bergen Energi, Bill Schjelderup, providing insights into the European energy markets, particularly the challenges and how end users in Europe utilise these markets and energy exchanges directly or indirectly through brokers.

Becky Kilbourne, marketing and business development of North American Energy Credit and Clearing Corp, followed by sharing the

experiences of integrating gas and electricity markets in North America over the past few decades. In her presentation, Becky highlighted that after a decline in trading there is now an upswing with increasing interest from banks and other commodity traders, and that the energy markets are increasingly evolving towards commodity market structures, with gas evolving ahead of power. These new entrants require a higher standard for risk management however, as more turbulence is possible in an environment of regulatory uncertainty and fledgling retail competition.

Providing a comparative perspective from across the Atlantic, Bruce Turner, SVP Trading and Portfolio Management, Suez Energy International, shared his insights as a market participant in integrated gas and electricity markets in Europe. Relating his experience to Singapore, Bruce suggested several benefits that can be gleaned from integrated markets, such as more value through asset portfolio management.

In closing the main session of the Roundtable, Dave Carlson highlighted the significance of issues that have bearing on markets around the world and how the overwhelming response of 150 attendees was evidence of their interest to local and regional players.

In the afternoon, EMC's Henry Gan, Vice President, Pricing & Information, conducted a workshop on an introduction to the NEMS



Participants enjoying a special evening along the picturesque Singapore River at the Asian Civilisations Museum

market clearing engine process and its pricing methodology. Speaking to a fully-subscribed audience of 50 people at the EMC office, he presented the market clearing process, key market pricing concepts and market performance of the NEMS. The participants also had a preview of the newly developed market simulator tool called Energy Market Study Training and Analysis Tool (EMSTAT), which was used to illustrate the concepts of nodal pricing and co-optimisation.

The overwhelming interest in the Roundtable attests to the relevance of the topics raised by the speakers. In organising and hosting the event, EMC is privileged to provide a platform for discussions about major developments in the industry, further spearheading Singapore as a leading market.

We thank all participants again for their active engagement in this year's event and we hope to host them again at next year's Singapore Electricity Roundtable 2007.





Dispute management system contacts, representing all market participants, attending the mediation workshop

Mediation Workshop

On 19 and 20 October, a workshop on Managing Conflicts and Resolving Disputes Effectively Through Mediation was conducted for the dispute management system (DMS) contacts, i.e., DMS contact persons of all market players in the NEMS.

The trainers for the workshop were George Lim, Dispute Resolution Counsellor, and Carol Liew, a manager with the Singapore Mediation Centre. The two-day event took place at the EMC office and was organised and supported by EMC's Market Assessment Unit.

During the workshop, mediation concepts and the mediation process were discussed with participants through lectures, a video and interactive activities. DMS contacts also participated in role plays, both as disputants and mediators. The purpose was to enable DMS contacts to get to know their NEMS counterparts and have the opportunity to

practice dispute management skills with them in a variety of dispute settings.

Many participants have provided feedback

that they found the workshop interesting and useful. DMS contacts also indicated that they would welcome a similar session on dispute resolution every year.



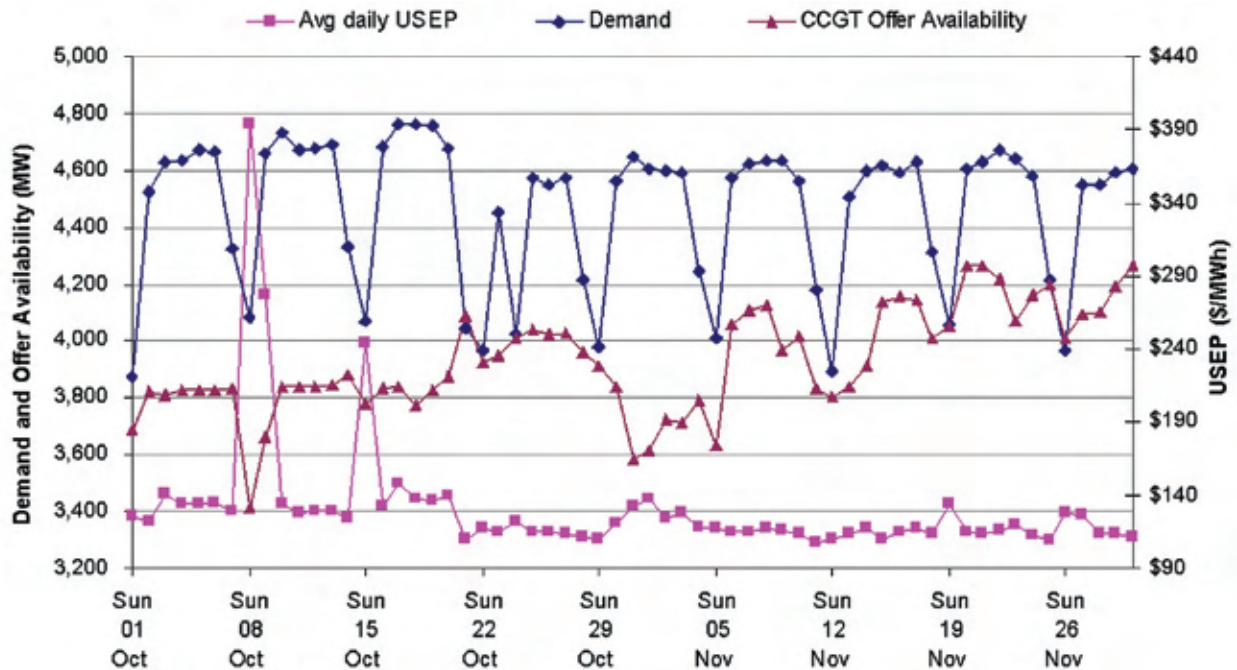
An attentive audience listening to George Lim, Dispute Resolution Counsellor



Flat Demand and Increased CCGT Availability Contribute to Easing of USEP

Although demand increased initially in October, it began to soften in the last week of the month and stayed relatively flat throughout November. This was in line with the wet weather experienced during this time period, with average temperatures registering below 28°C on most days. The CCGT offer availability improved progressively in November, as CCGT units returned from maintenance to full operation.

As shown in the chart below, the flat demand and improved CCGT offer availability saw all daily average USEP close under \$138/MWh in November, remaining comfortably below the fourth quarter vesting contract price of \$150/MWh. The average monthly USEP was \$117/MWh for November, a level last seen in February 2006.



Debut of MSCP Market Watch

EMC's Market Assessment Unit (MAU), which supports the Market Surveillance and Compliance Panel (MSCP), has from time to time received requests from market players to share market surveillance observations and market compliance statistics. In response to this, the first issue of *MSCP Market Watch* was published in November 2006.

The role of the MSCP is to identify rule breaches and assess whether the underlying structure of the wholesale electricity markets is consistent with the efficient and fair operation of a competitive market. *MSCP Market Watch* seeks to regularly provide interested participants and observers of the NEMS with a brief update focussing on these market surveillance and compliance objectives. However, detailed analyses of market activities will continue to be reserved for the *MSCP Annual Report*.

MSCP Market Watch and a user guide to the quarterly publication are available at EMC's website at www.emcsg.com. Comments and feedback on how this publication can be improved are welcomed and can be sent to the MAU at mau@emcsg.com.

Market Participation Update

On 15 November, the wholesale electricity market welcomed Air Products as a market participant (MP). Air Products participates in the market as a wholesale trader and will begin to compete in the reserve market by offering interruptible load after it completes registering its load facilities. The entry of Air Products adds one more player to the wholesale electricity market, paving the way for greater competition in the market.

Air Products' MP registration followed the registration of Keppel Merlimau Cogen's facilities for commissioning tests on 31 October. Keppel Merlimau Cogen is a generation licensee MP with a capacity of 500MW. After it completes commissioning tests and begins commercial operations, greater competition in generation is expected to lead to more efficient market outcomes.



User Forums

Market Information Sharing Forum (MISF)

The MISF forum held on 15 November brought together over 20 attendees. Participants were given updates on market performance, generation and retail market share as well as pricing incidents over the past two months. The market outlook for November and December was also discussed. Samples of revamped trading reports including daily, weekly and monthly reports were distributed to the participants for review; further comments were made during the session.

The feature topic presented by Lu Feiyu, Senior Market Analyst of Pricing and Information, covered the latest system enhancement – Incurrence of Group Violation Penalties.

The next MISF is scheduled for Wednesday, 17 January 2007.

Combined IT Workshop and MSUG

EMC conducted a combined IT workshop and MSUG meeting in December to update market participants on the progress of our current IT projects and to seek feedback on a number of initiatives that are planned for 2007, in the second phase of the Data Delivery project.

Almost 30 market participants attended the workshop, which provided them with the opportunity to shape the evolution of the NEMS market systems. The main topics of interest for everyone were the creation of a new feature-rich web based application to replace the existing PowerBid tool and the automated delivery of all NEMS information using a combination of web services and e-mail.

EMC is currently performing system tests on the first phase of the Data Delivery project, which will provide market participants with the ability to automate the exchange of offer submissions, offer validation information and advisories using web services and e-mail. These enhancements are scheduled to be implemented in late January.

We plan to hold another combined MSUG meeting and technical workshop on 22 February, shortly after the implementation of the changes, in order to familiarise market participants with how they can develop their own web services to take advantage of these enhancements.

Launch of Improved Website

We have revamped both the public and private sections of our website. We have not only revised the text, but we have also changed the structure and navigation to make it easier for market participants and the public to find information.

Returning visitors to our website may notice the expanded content. On the new website, we have published material that was previously only available in hardcopy, such as our corporate brochure. We have also introduced a combined Q&A (FAQ) written in clear and simple prose. Aiming to inform audiences about the NEMS, its framework and its processes, we have also streamlined the content and structure of the section About the Market.

We have also reorganised the structure so that information is now provided in a clear manner. Instead of having a single large information centre, we have categorised the information so that users can intuitively navigate to find what they are looking for. Another significant improvement is the publication of prices and trading reports under the collective category of Market Data, enabling the public to access the latest information about the market in a convenient way.

Although much has changed, we have maintained the familiar ways of interacting with EMC through our website. Market participants with access to the private section of the website are reminded to update their bookmarks in view of the changes. With these improvements, users can now learn more about EMC and the NEMS through our website, www.emcsg.com.

EMC Training Programme — Next Course on 8 and 9 February

EMC will be holding its regular two-day training course *Understanding Electricity Markets* on 8 and 9 February. Our staff will be conducting six sessions covering the following topics:

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

Further courses are scheduled for:

- 17–18 May 2007
- 16–17 August 2007

We advise you to book early to secure your place in the course 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 Ong Pui Sze at +65 6779 3000.

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 or via fax to +65 6779 3030.

Thank you in advance for your time and effort.

