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CEO's Message

Another successful year for the National Electricity Market of Singapore (NEMS) has come to a close. 1 January 2008 marks the fifth year of NEMS operation.

Singapore's Minister for Trade and Industry, Mr Lim Hng Kiang, stated at the opening of the Singapore Electricity Roundtable on 12 November that in these five years the NEMS has already led to more cost-competitive, energy-efficient and cleaner generation outcomes for the Singapore market. But he noted that all countries are witnessing a sea of changes in the energy landscape with energy security and climate change challenges ahead. At the Roundtable, the Minister launched the National Energy Policy Report and the Energy Studies Institute as steps to meeting these energy challenges. The launch

at the Roundtable highlights the important role that the NEMS plays for Singapore. I am very pleased to say that both speakers and participants viewed the Roundtable as a big success. Please see the article on pages 1-3 for full details.

This year the market has again performed well, with the increased competition among generation companies stabilising the average electricity price of the wholesale market (USEP) despite rising demand and continuing volatile oil prices. Only the end of the year saw a rise in the USEP, with November reaching a 13-month high, as reported in the article on page 3.

In October, EMC's Market Assessment Unit organized a workshop on Negotiation Strategies, Tactics & Counter-measures for the dispute management system (DMS) contacts

of all market players in the NEMS. I would like to thank George Lim, our Dispute Resolution Counsellor, and Carol Liew from the Singapore Mediation Centre, for conducting the workshop, which has helped to further develop the skill sets of the DMS contacts. See the article on page 4.

2008 will have already begun when you read this issue, but I would like to thank all of our market players for their ongoing support and our combined efforts in evolving the NEMS. We at EMC look forward to a continuous successful working relationship with you and wish you a happy and prosperous new year.

Dave Carlson Chief Executive Officer

Electricity Roundtable 2007 – Another Great Success



Minister Lim Hng Kiang opening the Roundtable

The third Singapore Electricity Roundtable was a great success. EMC was privileged that Singapore's Minister for Trade and Industry Mr

Lim Hng Kiang accepted the invitation to open the Roundtable this 12 and 13 November 2007 at the Raffles City Convention Centre.

In opening the Roundtable, Guest-of-Honour Mr Lim took this opportunity to launch the National Energy Policy Report and the Energy Studies Institute (ESI). The National Energy Policy Report outlines the first holistic national energy policy framework for Singapore, outlining six strategies to strengthen Singapore's economic competitiveness, enhance its energy security, and improve its environmental sustainability. The ESI is

a multi-disciplinary, autonomous research institute that will focus on energy economics, energy security and the environment.

More than 230 participants attended the opening ceremony, and more than 170 attended the Roundtable sessions, including representatives of our market participants; the Energy Market Authority; the electricity and energy industries; the Ministries of Trade and Industry, Foreign Affairs, and Environment and Water Resources; National University of

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The Minister launching the ESI together with the ESI Chairman, Ms Chan Lai Fung, and EMC's Chairman, Mr Tan Soo Kiang

Singapore; Nanyang Technological University; the Agency for Science, Technology and Research; and our large consumers, financial institutions, law firms and consultancies. Journalists were also invited to attend the opening, and the event was widely covered in the Singapore and regional media.

Participants hailed not only from a diverse spectrum of industries but also from various countries around the globe, including Australia, Belgium, Hong Kong, Malaysia, South Africa and the US. With such a strong show of interest from both new and returning participants, EMC would like to thank everyone for their firm support of the Roundtable.

Wong Mui Quee, Director of the Energy Market Authority, provided a regulator's perspective of five years of the NEMS and the roadmap ahead. She demonstrated that on the whole, market liberalisation has increased competition among industry players and benefited consumers, resulting in downward pressure on electricity prices. The audience also learned details of the roadmap ahead, ranging from full retail contestability with the Electricity Vending System project to an electricity futures market, LNG and clean energy projects.

Perspectives on the US market and lessons learned were presented by Philip Harris, former Chairman, President & CEO of PJM Interconnection, which administers the world's largest energy market and operates the world's largest electricity grid. He provided an overview of the various US markets, weighing their respective benefits, touched on the challenges facing the US electric market, and the quest for solutions for the future.

An academic perspective on *Electricity in the Energy Economy, Demand and Energy Efficiency*, was presented by Professor Ang Beng Wah, Senior Fellow, Energy Studies Institute. He gave a comprehensive presentation on energy demand and supply analysis in Singapore and across Asia, concluding that electricity as a share of the total energy demand has been rising and is expected to continue to outpace the average rise in total energy demand. There will therefore be a need to improve the efficiency of both electricity generation and end-use.

Mr Andrew Campbell, CEO, Intelligent Energy Systems, provided his perspectives on the NEMS. He touched on the physical characteristics and market arrangements of the NEMS, lessons learned from other markets, and a review of some of the market rule changes and regulatory issues. He concluded with the comment that a forward market is a natural development and a key to risk management.

The panel discussion, *Energy sustainability – How will Singapore's energy landscape change over the next 10 years?*, featured 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; and Wayne Crean, Marketing & Trading Director of Island Power. It was a lively debate covering issues ranging from renewable technologies and fuel diversification to the ASEAN power grid, energy and market efficiency, and sustainability of the market. All panellists agreed on the need to have a market-based economy that is fully-optimised, coupled with new technology to ensure that sustainability and efficiencies of the market are met. Panellists agreed that fuel diversification and advances with renewables will bring new opportunities, but for Singapore, fossil fuels remain key. The discussion also



The panel discussion

touched upon demand-side management, with panellists commenting that there are major untapped benefits to this model.

The first day ended with cocktails and dinner at the new National Library building, The Pod. Guests had the opportunity to enjoy a panoramic view of Singapore from 102 metres above ground in the environmentally-friendly, energy-saving building.

The second day started with perspectives on cross border trading in Southern Africa. Maree Roos, an energy consultant from South Africa, provided insights into the cross border trading model of the Southern African market, which could serve as a model for ASEAN. He covered the opportunities and benefits for the various countries involved, noting some of the hurdles the market has faced since it started in the mid-1990s. He emphasized that the political will and trust of working together has been key to their success and would also be of key importance for ASEAN.

Ian Angell, Vice President of WoodMackenzie, shared his views on Asia Pacific LNG and Singapore. He described how LNG had become a topic of focus in Singapore due to the highly volatile pricing situation, and the implications of relying on LNG in view of its relatively high infrastructure and cost. He concluded his presentation by touching on the opportunities to mitigate the risks and increase both the probability of procurement and the price flexibility of supply to address the issue of high costs.

Following the presentation on LNG and Singapore, Steve Begley, Of Counsel, Lovells Lee & Lee, provided his perspective on the opportunities, hurdles and viability of an LNG terminal in Singapore. He provided insights on the development of the gas market in Singapore, the gas market liberalisation process, and Singapore's demand for natural gas. He shared with the audience possible ways to overcome the obstacles to a viable LNG market in Singapore and he explored possible opportunities brought about by LNG, such as LNG trading.

In his closing remarks, Dave Carlson highlighted the importance for Singapore of the National Energy Policy Report, with energy and electricity topping the agenda in every country today. The overwhelming response

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Participants enjoying a special evening at the Pod

to this Roundtable, with more than 200 local, regional and global attendees, testifies to the importance of a forum such as this, which connects practitioners, experts, potential investors and decision makers, and 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.

In the afternoon, Henry Gan, Vice President of Pricing & Information at EMC, conducted a workshop on the NEMS. Speaking to a fully-subscribed audience of more than 70 people, he presented an overview and update on the NEMS, emphasizing the market's evolution and performance over the past five years.

We again thank all participants for their active engagement in this year's event and we hope to host you again at next year's Singapore Electricity Roundtable 2008.

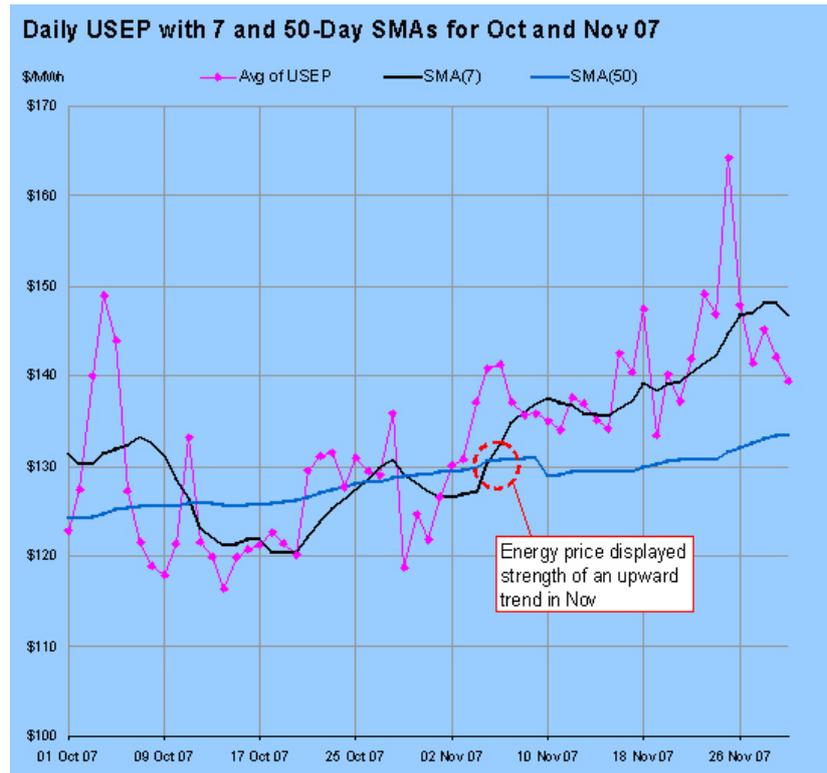
Rule Change Update

A rule change affecting net treatment of non-reserve charges for embedded generators was implemented on 4 December 2007. An embedded generator is a power generation plant that generates electricity to its onsite load for self-consumption. This change was directed by the Energy Market Authority (EMA) and applies only to embedded generators that do not export power into the grid. Under the new rules, non-reserve charges (such as EMC fees, PSO fees and MEUC) for these non-injecting generation facilities will be assessed on their amount of net withdrawal (consumption) from the grid. To qualify for this treatment, an embedded generator requires approval from the EMA and registration with EMC as a non-injecting generation facility.

Market Update

The USEP rallies in November after the relative flatness of October

The Uniform Singapore Energy Price (USEP) was steady in the first month of Q4, closing on a monthly average of \$126/MWh. Thereafter, the USEP rallied, reflecting higher fuel oil prices. In November, the USEP moved to a 13-month high at \$140/MWh. Plotting the 7-day and 50-day simple moving averages (SMA) against the daily average USEP on a two-month time-frame, the energy price reflected an upward trend in November. In an uptrend, the shorter-term moving averages should be above the longer-term averages, and the current price should be above the 7-day SMA. It is noteworthy that in November the lowest USEP per period closed at \$100/MWh as compared to levels standing below \$84/MWh over the four preceding months.



Regulation (\$/MWh)

Jan	719
Feb	209
Mar	142
Apr	84
May	33
Jun	70
Jul	42
Aug	34
Sep	34
Oct	11
Nov	23

Regulation price swings further downward in October and November

In both October and November the regulation price decreased significantly from the highs recorded in Q1 2007. Specifically, in October the daily average regulation price registered a total of thirteen trading days below \$10/MWh, which led the monthly average regulation price to close at the lowest level since market start, at \$11/MWh.

Correction to Bulletin 40: The GDP figures in the chart on page 2 should read \$b (billion) and not as stated \$m.

Dispute Resolution Workshop

On 16 October 2007, a workshop on "Negotiation Strategies, Tactics & Countermeasures" was conducted for the dispute management system contact persons (DMS contacts) of all market players in the NEMS. Previous workshop participants had indicated that they would welcome an annual session on dispute resolution.

Mr George Lim, Dispute Resolution Counsellor, and Ms Carol Liew, a manager with the Singapore Mediation Centre, conducted the training. The one-day event took place at EMC and was organized and supported by EMC's Market Assessment Unit.

During the workshop, time was devoted to the NEMS dispute resolution process. The purpose was to familiarize new DMS contacts with the process. These sessions also served as a forum for DMS contacts to clarify questions they had regarding the process.

Negotiation skills and tactics were discussed through lectures and a video and reinforced through interactive activities. An electricity market-based role-play enabled experiential learning.

Many participants have expressed that they found the workshop useful and EMC is pleased to have facilitated an opportunity for all DMS contacts to engage their industry counterparts.

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.

User Forum

Market Information Sharing Forum (MISF)

A number of new faces from the industry attended our Market Information Sharing Forum (MISF) held on 21 November. It is noteworthy that this MISF was attended by all players in the industry, including the Energy Market Authority (EMA). Market players learned that for the first ten months of the year (particularly Q3), monthly energy prices were below the vesting price, due to keen market competition. In addition, forum attendees were briefed on the performance and volatility of the regulation price, as it recorded the lowest monthly price since market start, of \$11/MWh in October 07. In addition to sharing the market performance for the last two months, the forum highlighted the news that PowerSeraya had topped other generation companies and retailers in generation and retail market share in October. Finally, since market price movements were fairly stable, with only a handful of pricing incidents, the forum ended after an hour.

The next MISF is scheduled for Wednesday, 16 January 2008.

Market System User Group (MSUG)

In the Market System User Group (MSUG) meeting on 19 December, market participants were given an overview of the initiatives that EMC intends to embark on in 2008 that aim to continue to improve, enhance and evolve the NEMS systems services.

EMC also provided the regular updates on the NEMS systems performance and incidents over the past two months, and provided updates on the progress and schedule for the NEMS Offer Management and Web Services project.

The next MSUG is scheduled for 21 February 08.

Derivatives Trading Forum (DTF)

EMC held the first Derivatives Trading Forum (DTF) on 27 November. Attendees were updated on EMC's preparations for establishing an electricity derivatives market in Singapore. The next DTF meeting will be held in early 2008 and will provide attendees with an overview of how derivatives contracts are traded in other electricity markets. Industry participants who are interested in joining the DTF should contact Mr Luke Peacocke (luke.peacocke@emcsg.com).

EMC Training Programme – Next Course on 21 and 22 February

EMC will be holding its two-day training course *Understanding Electricity Markets* on 21 and 22 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

Our next course is scheduled for:

15-16 May 2008

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