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CEO's Message

October ended with the Singapore Electricity Roundtable, a highlight for many of us in the electricity and energy industries.

This year, EMC hosted the event as part of the Singapore International Energy Week (SIEW). This sixth Roundtable brought together high-profile speakers and panelists from around the world, to share perspectives as market players, consultants and leading experts covering developments in the electricity markets in the US, Europe, the Asia Pacific and Singapore. I enjoyed hosting the panel discussion, which focused on the Economic Strategies Committee's recommendations and the implications of those recommendations for the power industry.

I am pleased that our speakers, panelists and participants viewed this year's Roundtable as a great success. Thank you to everyone for your support. Highlights of the event are in the article below.

During the SIEW, EMC also had the privilege of hosting two visiting delegations, from the Ministry of Energy, Green Technology and Water from Malaysia, and the Department of Energy from the Philippines. EMC values such visits as they enable us to exchange best practices and lessons learned with our counterparts, and give us the opportunity to build closer regional ties with our energy sector partners. See the article on page 3 for more details.

Looking at the market, total metered demand reached 31.6TWh for the first three quarters of 2010, marking the first time since the market's inception that the metered demand crossed the 30TWh in the first nine months. We also saw another embedded generator joining the market. For full details, please see the articles on pages 4 and 5.

In October, EMC conducted a training session focusing on vesting contracts for the Korea Power Exchange (KPX) and representatives from some of its member companies — our

second training session for KPX. It's great to see that we have built many close relationships with other markets in the region and training is one of the ways in which we share the benefits of a liberalised electricity market with other markets. Please see the article on page 4.

2010 is coming to a close soon and I would like to thank all of our market players and stakeholders for their ongoing support and combined efforts in evolving the National Electricity Market of Singapore. We at EMC look forward to a continued, successful working relationship in the year to come.

Dave Carlson Chief Executive Officer

Singapore Electricity Roundtable 2010



Keynote speaker Prof Frank A. Wolak, addressing the audience

The sixth Singapore Electricity Roundtable on 28 and 29 October at the Suntec Singapore International Convention & Exhibition Centre sparked great interest. This is the third year that EMC has partnered with the Energy Market Authority and Energy Studies Institute, hosting the Roundtable as part of the Singapore International Energy Week (SIEW).

Over 200 participants attended the Roundtable, including representatives of our market participants, the electricity, energy and gas industries, power generation suppliers, financial institutions, consultancies and local government ministries and agencies. Journalists were also invited to attend the Roundtable, and the event was covered in the media.

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Panel discussion

Participants hailed from diverse industries and many countries, including Australia, Hong Kong, Philippines, Malaysia, China, Taiwan, Thailand, European countries, as well as the U.S. EMC thanks everyone for their support of the Roundtable. The strong interest shown by both new and returning participants inspires us each year.

High-profile speakers and panellists from four continents shared their insights. EMC Chairman Wong Meng Meng welcomed the attendees, noting that the Roundtable and the SIEW continued to offer an excellent opportunity to facilitate closer cooperation and the exchange of ideas among governments, businesses and academics on a regional and global basis.

Our keynote speaker was Professor Frank A. Wolak, Holbrook Working Professor of Commodity Studies, Department of Economics, at Stanford University. He gave his insights on the restructuring of the electricity market, the market design problems encountered, the benefits of the regional electricity market in the US and the lessons learned. He concluded his presentation by touching on the outstanding challenges faced in regional market integration.

Arne Eik, Manager European Carbon Market, Point Carbon, presented on the European

Union emission trading scheme (EU ETS) and touched on the lessons learned from the scheme. He spoke about the emission allowance (EUA) price developments in the scheme and wound up his presentation with the scheme's impact on the European power market.

Dr Pallapa Ruangrong, Commissioner, Energy Regulatory Commission of Thailand, shared the developments in Thailand's electricity sector. She provided an overview of the Thailand electricity industry, covering topics like the components of the market, Thailand's renewable energy promotion plans, tariff structure, electricity pricing structure, energy generation mix and Thailand's power development plans for the future.

Paul Sell, Director, Energy Market Consulting Associates, presented on the deployment of smart metering (AMI) and how benefits were being realised with such an infrastructure. He touched on the components, costs and benefits of the smart metering infrastructure and the planning that went into such an infrastructure deployment – that is, the risks and costs involved and how to optimise the benefits from such an infrastructure.

Mark R. Landis, Managing Director, MRL Management Services, provided his

perspectives on the Australian electricity derivatives market. Mr Landis gave a comprehensive presentation on the derivatives market covering the development of the market, financial market participants, the non-exchange and exchange-listed products traded, major disruptions to the market, the effect of large customers entering the market, the impact of environmental and renewable products on the market, and the lessons learned.

Professor Dr Dong Jun, School of Economics and Management, North China Electric Power University, gave an update on the electricity market in China. She presented an overview of the status and outlook of the electricity market in China, and detailed the market reforms of the electricity sector in China. China, like Thailand, is focused on renewable energy and has a series of strategies in place to manage their response to climate change. The update on China's electricity market also had the participants in awe as demand and supply growth were not in megawatt but gigawatt and terrawatt.



Audience asking questions

The panel discussion "Singapore's Economic Strategies Committee (ESC) recommendations and implications for the power industry" featured EMC Chief Executive Officer Dave Carlson as the moderator. He was joined by panellists John Ng, Chief Executive Officer, PowerSeraya; Ng Meng Poh, Executive Vice President & Head, Singapore and ASEAN (Utilities), Sembcorp Industries; and for the very first time, our keynote speaker Professor Frank A. Wolak, Stanford University, who provided an external perspective. The panel had a lively discussion on the recommendations of the ESC and

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acknowledged that nuclear power was an energy option that Singapore would not be able to ignore in the long term. The panel also agreed that the benefits of closer regional coordination and integration between countries on energy issues were important and that Singapore should look at the possible benefits arising from such partnerships.



Participants at cocktails and dinner

Our first day ended with cocktails and a sit down dinner for Roundtable attendees at One on the Bund, located at the historical site of Clifford Pier along the Marina Bay waterfront. Guests

were most fascinated with the waterfront view from the restaurant's alfresco area and enjoyed the signature wood-fire roasted peking duck, cooked using specially imported wood chips for its distinct flavour, amidst their interaction with their counterparts.

Our second day began with two workshops conducted by EMC in-house experts. Both workshops were fully-subscribed, with over 140 attendees.

The first workshop was conducted by Kenneth Lim, Senior Vice President, Market Operations and Information Technology, who presented an overview of the National Electricity Market of Singapore (NEMS) and provided updates to the Singapore market with an emphasis on the market development and performance.

The second workshop was conducted by Chiao Yen Shong, Business Development Manager, and his co-presenter Mark R. Landis, MRL Management Services. Dr Chiao and his co-presenter spoke on the electricity derivatives



Participants attending Day 2 of workshop presentations

markets. Dr Chiao provided an update on the derivatives market initiative in Singapore and Mr Landis described how financial derivatives could be used to manage risks in an electricity pool market.

We thank all participants for their active engagement in this year's event and we hope to see you again at the Singapore Electricity Roundtable 2011. More photos of the Roundtable are available at www.emcsg.com/roundtable2010highlights.

Delegate Visits



EMC Chairman (center) with Malaysian Minister of Energy, Green Technology and Water (right) and accompanying official (left)

During the Singapore International Energy Week, top energy policy makers from two ASEAN countries called on EMC. On 1 November, the Malaysian Minister of Energy, Green Technology and Water, Dato' Sri Peter Chin, visited EMC to gain further insight into the National Electricity Market of Singapore (NEMS). He was accompanied by the Secretary-General, Ministry of Energy, Green Technology and Water, Datuk Loo Took



EMC delegates with officials from the Philippine Department of Energy

Gee; Chief Executive Officer of the Energy Commission, Ir. Ahmad Fauzi bin Hasan, and other senior officials. This was followed the next day by a visit from the Philippine Energy Undersecretary, Loreta Ayson, and Chief of Staff of the Energy Secretary's Office, Atty. Josefina Asirit.

During both meetings EMC provided an overview of Singapore's reform process,

market operations and emerging issues for the NEMS while the visitors gave an update on the power sector developments in their respective countries. Dave Carlson, Chief Executive Officer, EMC, reiterated EMC's willingness to share the company's experiences with the two countries for the benefit of future market development in the region.



Korea Power Exchange (KPX) Training



KPX delegates at EMC office

Following last year's customised course for the Korea Power Exchange (KPX), EMC conducted another course in October 2010 for KPX and its member companies. This year, KPX brought along eight member companies from their generation subsidiaries and KEPCO (Korea Electric

Power Corporation - the equivalent of SP Services in Singapore) for the course, compared to two KPX participants who attended the previous course.

The course focused on the principles behind vesting contracts and how they were

implemented in Singapore. The Korean delegation's interest in vesting contracts stems from a potential implementation of them in Korea in the near future. While the design of the Korean electricity market is quite different from Singapore's, the principles of vesting contracts are the same, and course participants gained valuable insights.



KPX delegates at PowerSeraya plant

The course went beyond the classroom. We arranged a plant tour to PowerSeraya's generation facilities, and treated participants to Singapore's signature chili crab. The course served as an excellent knowledge exchange platform between KPX and EMC staff, and we look forward to more collaborative opportunities in the future.

Chao Yang Outing to the Omni Theatre



Children getting ready for their IMAX movie

On 30 September, EMC volunteers brought 58 children from Chao Yang School to the Omni Theatre at the Science Centre to watch "The Beaver".

Chao Yang School, under the auspices of the Association for Persons with Special Needs, caters to the needs of people with learning disabilities. EMC has supported the school's sports day for the last five years and school excursion trips from time to time.

This outing was a pre-Children's Day celebration for the school. For some of the children, this was the first time they had ever visited the Omni Theatre and seen an IMAX movie. The group stopped for breakfast at McDonald's before proceeding to the theatre for the show. The children were very excited, as could be seen from their endless chattering about the show whilst queuing. During the movie, many were fascinated and enthralled by the three-dimensional effects of the movie.

The outing was an enriching experience for all the adults and children. We look forward to our next activity with the children from the Chao Yang School.

New Embedded Generator (EG) Singapore Oxygen Air Liquide (SOXAL) Enters the National Electricity Market of Singapore (NEMS)

On 8 October, a new market participant, SOXAL, started trading in the NEMS as an EG. It is commissioning its two generating facilities with a total generation capacity of nearly 15 MW.

As of 19 October, there are five EG market participants in the NEMS.



Rule Change Updates

In 2008, Energy Market Authority engaged KEMA Consulting to review existing generation reliability practices in Singapore. KEMA's proposed changes include:

1. Requiring a Generation Registered Facility (GRF) to re-declare its capacity no later than 30 minutes after a trip or a failure to synchronise
2. Introducing a penalty mechanism based on a pre-determined formula should a GRF fail to adhere to (1), above.

At the 50th Rules Change Panel (RCP) Meeting on 6 July, the RCP decided not to implement KEMA's proposed changes for several reasons. A legal review determined that the Market Rules already

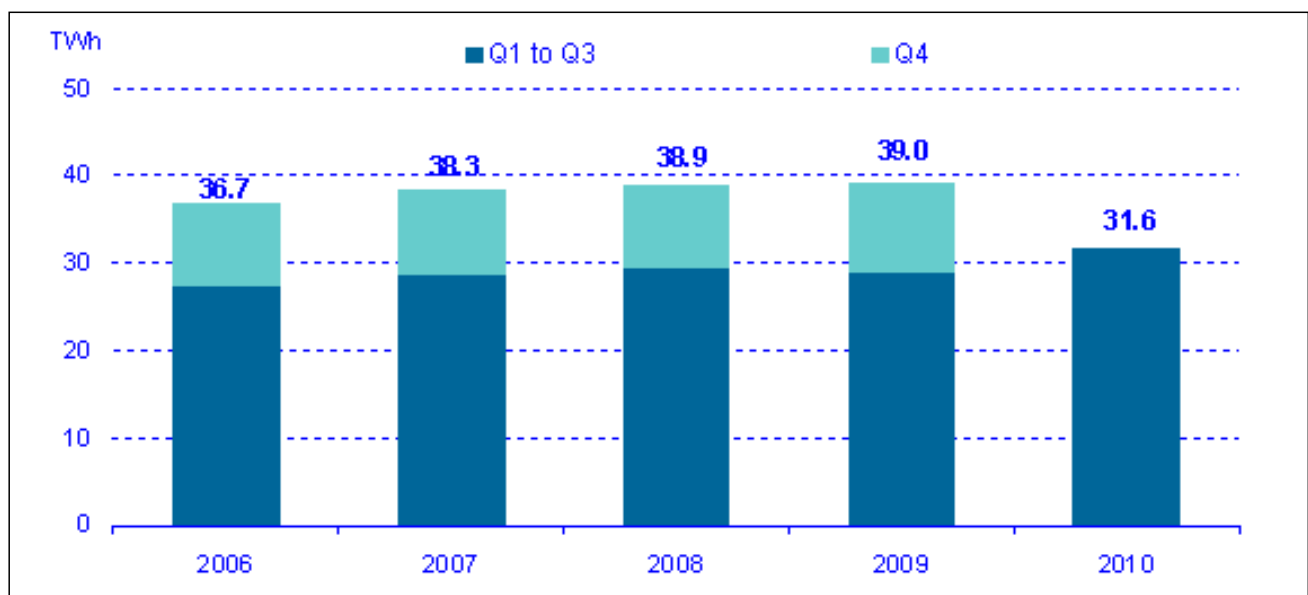
obligate a given GRF to revise its offers if its future output will be less than its existing offers. Also, the proposed penalty mechanism is not consistent with the Singapore wholesale electricity market's design principle of self-commitment, and GRFs are already incentivised to revise their offers to comply with their dispatch instructions.

However, rule changes were made to clarify that even if a dispatch coordinator expects the GRF's output to be less than its offered quantity by more than 10MW or 5 percent, he should not revise his offers if they are within the gate closure. Exceptions to this principle are listed in Chapter 6, Section 10.4.1 of the Market Rules.

Market Update

Electricity demand remains upbeat

Demand for Q1 to Q3 2010 is at its highest in the last five years



The total metered demand reached 31.6TWh for the first three quarters of 2010. It was the first time since market inception that the metered demand crossed the 30TWh threshold within the first three quarters. This also translated to a 9.2 percent increase when compared with the same time period last year.

The main increase in the metered demand was in the first two quarters of the year. The quarter-on-quarter (QOQ) changes from Q1 to Q3 2010 were 14.2 (Q1), 8.6 (Q2) and 5.4 (Q3) percent. The QOQ changes for the first three quarters of 2010 did show a modest slow down, but demand remained buoyant. The yearly increase in the total metered demand between 2006 and 2009 averaged 2.3 percent.



User Forum

Market Information Sharing Forum (MISF)

The MISF on 22 September touched on the market's performance and provided a brief market outlook. The outlook included ad-hoc market events as well as the demand and supply outlook for the months of September and October. September's forum ended with a review of an updated Market Clearing Engine tool – the Reserve Convexity Tool.

Our last MISF was held on Wednesday, 10 November 2010 and all MISF and MSUG delegates were encouraged to register online.

Market Systems User Group (MSUG)

The bi-monthly MSUG forum was held on 21 October 2010. Participants received updates on the NEMS systems availability and incidents as well as the Disaster Recovery Exercises scheduled between 23 September 2010 and 26 October 2010. Data storage migration for the NEMS systems project updates were also provided to the Market Participants. EMC covered in detail the latest updates to the Gross Bidding for Embedded Generator and Settlement Net Treatment scheme resulting from new enhancements to the NEMS systems. Furthermore, participants were briefed on the sunset schedule for older NEMS applications and given a progress report of other ongoing projects related to the NEMS systems.

The next MSUG is tentatively scheduled for Thursday, 16 December 2010.

EMC Training Programme – Next Course on 24 and 25 February 2011

EMC will be holding its next available two-day training course Understanding Electricity Markets on 24 and 25 February 2011. Our staff will be conducting six sessions covering the following topics:

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

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 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.

