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## CEO'S MESSAGE

I am pleased to announce a new key appointment in EMC. On 1 November, Lu Su Ling joined the EMC team as Chief Operating Officer overseeing the Corporate Services unit.

Su Ling brings with her extensive experience

in capital markets, having worked in Singapore Exchange – EMC's parent company – for more than 15 years and in Malaysia's Securities Commission in the earlier part of her career. She will be an invaluable member of my management team as we prepare EMC to meet new challenges amidst a dynamic and evolving economic landscape.

One of the things that we remain committed to at EMC is the sharing of our experience in operating Asia's first competitive electricity market. In November, we hosted a delegation from Malaysia's Tenaga Nasional Berhad (TNB) which was here to learn more about the market design and operations of the National Electricity Market of Singapore (NEMS). There was a good exchange of ideas and sharing of developments in our respective power sectors during the visit.

In the wholesale electricity market, lower supply cushions in November and

December led to two consecutive months of increase in the monthly average Uniform Singapore Energy Price (USEP). December registered the highest monthly USEP for 2016 at \$88.43/MWh.

Still on the NEMS, we welcomed three new market participants and two new facilities in the last two months of 2016. In addition, a rule change on the provision of real-time estimates of the Hourly Energy Uplift Rebate (HEUR) was approved by the Energy Market Authority (EMA) in end October, and became effective in January 2017.

I would like to take this opportunity to thank our market participants, governance panels, the EMA and other business partners for your tremendous support and partnership in 2016. I look forward to another successful trading year for the NEMS in 2017.

**Toh Seong Wah**  
Chief Executive Officer

## VISITORS TO EMC



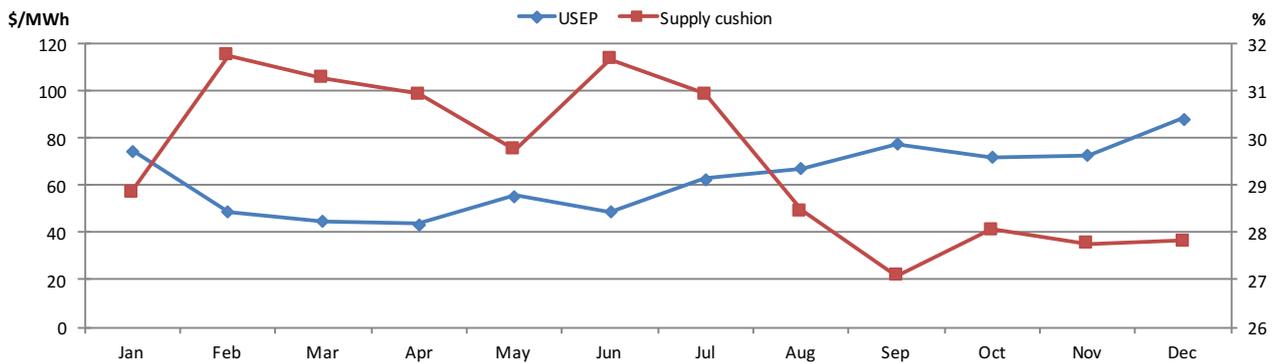
EMC team with the delegation from Tenaga Nasional Berhad (TNB), Malaysia

A group of delegates from Tenaga Nasional Berhad (TNB), Malaysia, visited EMC on 23 November 2016. The TNB delegation was in Singapore to exchange ideas and learn from EMC's experience as the wholesale electricity market operator in Singapore, particularly in the areas of market design and market operation. TNB is currently implementing a semi-market arrangement called the New Enhanced Dispatch Arrangement (NEDA) in Peninsular Malaysia. The NEDA, which combines cost-based and price-based pools, is now in a trial period.

EMC appreciates the opportunity to share experiences, exchange ideas and learn about the developments in Malaysia's power sector. We also look forward to opportunities to collaborate with our peers from Malaysia.

# MARKET UPDATE

## Overview of USEP and Supply Cushion in 2016



The LNG terminal was shut down for pipeline tie-in maintenance works from 1 to 14 November. As a result, total gas supply in November reduced by 20.0 to 25.0 percent. This led to a drop in the supply cushion to 27.8 percent and an increase in the Uniform Singapore Energy Price (USEP) to \$72.99/MWh.

In December, the supply cushion maintained at 27.8 percent despite a drop in demand. This was caused by a higher maintenance level of 14.3 percent in December, compared to the average level of 9.0 percent in all the other months of the year.

However, as there was a shift in offers to the higher price bands, the monthly average USEP rose to \$88.43/MWh, which was the highest monthly average level for 2016.

# NEW ENTRANTS TO THE NEMS

## New Market Participants and Facilities Registered in the NEMS

The National Electricity Market of Singapore (NEMS) welcomed three new market participants and two new facilities in the last two months of 2016.

On 8 November, Nanyang Technological University (NTU) joined the NEMS as a wholesaler (generation) licensee while Environmental Solutions (Asia) Pte Ltd registered as a retail electricity licensee. On 22 November, we welcomed GreenSync Holdings Pte Ltd as a wholesaler (demand side participation) licensee.

Also in November, the NEMS welcomed a new interruptible load facility registered by Singapore District Cooling Pte Ltd with a contingency reserve capacity of 6.0MW. In December, NTU registered a new intermittent generation facility (IGF) with a generation capacity of about 5.0MW. The registration of this facility raised the total capacity of IGFs in the NEMS to about 17.6MW.

# RULE CHANGE UPDATE

## Provision of Real-Time Estimates of the Hourly Energy Uplift Rebate

The hourly energy uplift rebate (HEUR) captures the differences between total amounts receivable and total amounts payable for energy, reserve and regulation. These differences are distributed to loads based on their metered withdrawal quantities. When there is significant nodal price separation, the HEUR will be a significant component in settlement due to the large difference in total amounts receivable and payable by EMC for energy. However, the value of the HEUR is only finalised ten business days after each trading day as the calculation of the HEUR relies on metered quantities.

A rule change was made to establish procedures for the provision of real-time estimates of the HEUR ("Estimated HEUR"). A methodology which uses parameters in the real-time and/or forecast schedules as substitutes for the metered quantities was adopted in the estimation of the HEUR. The methodology was tested for all settlement intervals in 2015, and the results showed that the Estimated HEUR is quite close to the actual HEUR.

The provision of the Estimated HEUR in real time will be beneficial to market participants, especially retailers, because it enables them to better assess their exposure to spot price fluctuations and thus better manage their spot price risk.

This rule change took effect on 5 January 2017.

# USER FORUMS

## Market Information Sharing Forum (MISF)

The Market Operations team hosted the 90<sup>th</sup> session of the bi-monthly MISF on 10 November. The following topics were shared with the attendees:

- Market Performance and key highlights in September and October;
- System Enhancements and Projects; and
- Feature Topics:
  - » Recap on prudential requirement; and
  - » Post-implementation review on the ExpectedStartGeneration of energy and reserve.

We would like to thank all participants for their continuous support and strong interest in the MISF. The next MISF is scheduled for 19 January 2017. Market participants who are interested in presenting at future MISFs are encouraged to come forward.

## Market Systems User Group (MSUG)

The bi-monthly MSUG forum was held on 15 December. EMC IT updated attendees on the following topics:

- Overview of NEMS systems availability year-to-date for FY 16/17;
- Overview of NEMS systems service desk calls received between November 2015 and November 2016;
- Overview of Change Releases deployed between November 2015 and November 2016;
- Completion of annual EMC user account review in November;
- Completion of RSA token replacement exercise in December;
- Planned NEMS maintenance on 5 January 2017 to roll out rule change for "337: Provision of Real-Time Estimates of the Hourly Energy Uplift Rebate"
- Major IT incidents that occurred, and actions taken to resolve them;
- Status updates on IT Infrastructure projects:
  - » NEMS Windows Server virtualisation at primary site;
  - » Enterprise Monitoring System (Phase 2);
  - » Data Warehouse Re-platform; and
  - » Primary Site Network Enhancement.
- Status updates on key on-going Application projects:
  - » Network status file enhancement;
  - » Provision of real-time estimates of Hourly Energy Uplift Rebate (HEUR); and
  - » Migration of Offer Management System (OMS) into the Submission Management System.

The next MSUG forum is tentatively scheduled for Thursday, 23 February 2017.

## EMC TRAINING PROGRAMME NEXT COURSE ON 16 AND 17 FEBRUARY 2017

EMC will be holding the next run of its two-day course *Understanding Electricity Markets* on 16 and 17 February 2017. Our staff will be conducting six sessions covering the following topics:

- Understanding Electricity
- Why Reform and Regulation are Essential in the Electricity Industry
- The National Electricity Market of Singapore and its Unique Features
- Introduction to SGX Electricity Futures Market
- Pricing in Detail
- Market Settlement and Credit Risk Management
- How Consumers can Influence Electricity Markets
- The course dates for 2017 are as follows:
  - » 16-17 February
  - » 11-12 May

We advise you to book early to secure your place in the course date 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](http://www.emcsg.com). For enquiries, please e-mail [trainingprogramme@emcsg.com](mailto:trainingprogramme@emcsg.com) or contact Jan Lee at +65 6779 3000.

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