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CEO'S MESSAGE

We rounded up 2014 with a series of new and re-appointments to members of the Rules Change Panel (RCP), the Market Surveillance and Compliance Panel (MSCP) and the Dispute Resolution Counsellor (DRC). The RCP, MSCP and DRC are critical in supporting the evolution and governance of the National Electricity Market of Singapore (NEMS). Details of

the changes to these governance panels can be found in the article, *Appointments in Governance Panels*.

In 2014, we welcomed five new generating facilities in the NEMS. Most of these were combined-cycle gas turbine (CCGT) facilities. Collectively, they lifted the total generation registered capacity in the NEMS to 12,884MW in 2014.

Still on the market, the last quarter of the year saw the average Uniform Singapore Energy Price (USEP) fall to \$121/MWh, which was the lowest quarterly average USEP registered for the year. This was in line with a drop in forecasted demand and a relatively unchanged supply level compared to the preceding quarter.

In the last few months of the year, my colleagues and I had the pleasure of hosting visitors from New Zealand's Electricity Authority and the Electricity Regulatory Authority of Vietnam. We welcome such visits as they help to enhance our relations

with key stakeholders in the region and promote the exchange of ideas.

Finally, in the festive month of December, EMC celebrated Christmas with the Movement for the Intellectually Disabled of Singapore (MINDS) in Ang Mo Kio (AMK). MINDS AMK has been EMC's adopted charity for more than 10 years. Besides sponsoring the centre's renovation and refurbishing works like previous years, we also supported new initiatives like its community garden project which helps the centre foster closer relations with nearby residents.

I would like to express my appreciation to all our market participants and other NEMS stakeholders for their strong support throughout the past year. Together with my team in EMC, I look forward to another successful year for the NEMS in 2015.

Dave Carlson
Chief Executive Officer

WELCOMING VISITORS FROM THE REGION



ERAV delegates with EMC representatives

EMC continued to engage stakeholders in the region and hosted visitors from New Zealand and Vietnam in the last few months of 2014.

Dr Brent Layton, Chairman of New Zealand's Electricity Authority, was in town in October to speak at the Singapore International Energy Week. He visited EMC on 28 October to get an update on the developments in Singapore's energy sector as well as the National Electricity Market of Singapore (NEMS).

On 8 December, we hosted a delegation from the Electricity Regulatory Authority of Vietnam (ERAV), led by its Deputy Director General, Dr Dinh The Phuc. Aside from market updates, the team was particularly interested to find out more about the trading of ancillary services in the NEMS. The ERAV last visited EMC in 2012.

Hosting foreign delegations like these enables us to keep abreast of developments in power markets around the world. They also facilitate the discussion and exchange of ideas and experiences.

APPOINTMENTS IN GOVERNANCE PANELS

Appointment of the 2015-2017 Rules Change Panel

The Rules Change Panel (RCP) plays an integral role in shaping the Singapore Wholesale Electricity Market (SWEM) by enhancing its efficiency and maintaining a level playing field. As the term of the current members ends on 31 December, the EMC Board has appointed the following members to the RCP for the new term that runs from 1 January 2015 to 31 December 2017.

Member category	Nominated by	Member
Chief Executive Officer of EMC (Chairman of Panel)	-	Paul Poh (as delegated by Dave Carlson)
Employee of the EMC not being the Chief Executive	EMC Board Chairman	Toh Seong Wah
Representative of the PSO	PSO	Soh Yap Choon
Representatives of the generation licensee class of market participant	PacificLight Power	Marcus Tan
	Shell Eastern Petroleum	Grace Chiam
	Tuas Power Generation	Priscilla Chua
Representative of the transmission licensee class of market participant	SP PowerGrid (agent of SP PowerAssets)	Lim Han Kwang
Representatives of the retail electricity licensee class of market participant	Keppel Electric	Sean Chan
	Senoko Energy Supply	Luke Peacocke
	Seraya Energy	Daniel Lee
Representative of the wholesale electricity trader class of market participant	Diamond Energy	Dallon Kay
Representative of the market support services licensees	SP Services	Lawrence Lee
Person experienced in financial matters in Singapore	Institute of Singapore Chartered Accountants (ISCA)	Phillip Tan
Persons representing the interests of consumers of electricity in Singapore	Consumers Association of Singapore (CASE)	Dr Toh Mun Heng
	Singapore International Chamber of Commerce (SICC)	Frances Chang

EMC takes this opportunity to thank all outgoing members for their invaluable contributions and commitment to the RCP.

Re-appointment of MSCP Members

EMC is pleased to announce that the EMC Board has re-appointed TPB Menon and Philip Chua to the Market Surveillance and Compliance Panel (MSCP). Both their new terms will be for three years beginning 1 January 2015.

EMC expresses its appreciation to Mr Menon and Mr Chua for continuing to devote their time and effort to support the functioning of the National Electricity Market of Singapore (NEMS).

The MSCP comprises L P Thean (Chair), Lee Keh Sai, TPB Menon and Philip Chua.

Re-appointment of the DRC

The EMC Board has re-appointed George Lim as the Dispute Resolution Counsellor (DRC) for another term of three years beginning 1 January 2015.

EMC expresses its gratitude to Mr Lim, for his continued commitment to the NEMS.

CHRISTMAS CELEBRATION WITH MINDS AMK



Dylan Lim (R), Head, MINDS AMK handing a token of appreciation to Toh Seong Wah, Deputy Chief Executive Officer, EMC

EMC celebrated Christmas with the Movement for the Intellectually Disabled of Singapore (MINDS) in Ang Mo Kio (AMK) on 19 December.

MINDS AMK is one of EMC's adopted charities. We have lent them support for more than 10 years. In 2014, EMC continued to focus our efforts on improving and refurbishing the facilities of the centre to provide clients with a conducive environment for their learning and day-care needs. Aside from such sponsorships, we also supported meaningful activities undertaken by the centre such as gardening of their community garden. The garden not only provides clients with an

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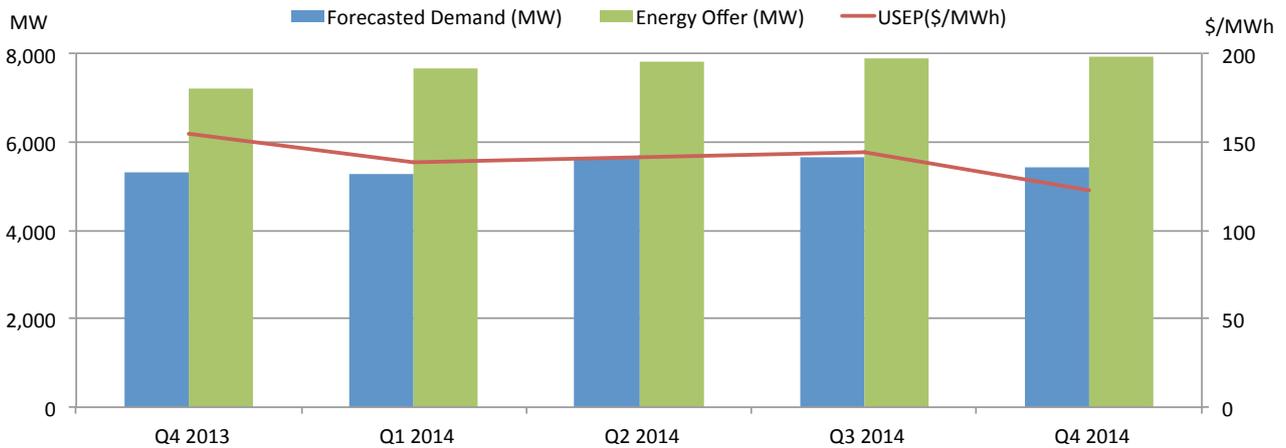
avenue to improve their motor skills, it also helps foster the relationship between the centre and nearby residents who participated in the activity.

The Christmas celebration at Kebun Baru Community Centre was another activity sponsored by EMC in 2014. This was the first time MINDS held their Christmas celebration at a public venue. It was a refreshing change for all guests who attended the event and a big step forward for the clients who performed on stage for the first time. The celebration included a number of song and dance performances by the clients, staff and volunteers followed by a sumptuous Christmas buffet lunch. MINDS AMK also took the opportunity to recognise the long-time support and service provided by their staff, volunteers and EMC with tokens of appreciation.

The Christmas celebration was an excellent opportunity for EMC staff to engage with the clients and staff of MINDS AMK. We look forward to future activities with them in 2015.

MARKET UPDATE

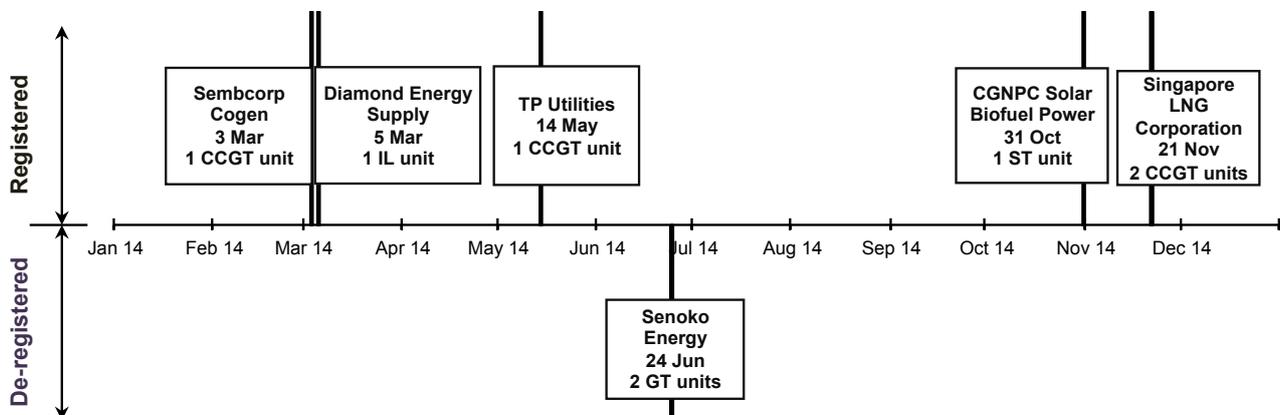
USEP decreases with a lower forecasted demand in Q4 2014



In Q4 2014, the quarterly average Uniform Singapore Energy Price (USEP) fell in view of a seasonal softer forecasted demand and relatively unchanged supply level. Forecasted demand fell from 5,656MW in Q3 to 5,426MW in Q4 while supply remained around 7,920MW for both Q3 and Q4. This led to a drop in USEP from \$145/MWh in Q3 to \$121/MWh in Q4. Quarterly average USEP in 2014 fell in the range of 18.9 to 23.4 percent compared with the quarterly average in 2013. For Q4 2014, USEP fell 21.5 percent compared with Q4 2013.

NEW FACILITIES REGISTERED WITH THE NEMS

Facilities Registered and De-registered in 2014



A total of five new generating facilities were registered in the National Electricity Market of Singapore (NEMS) in 2014. Aside from a Steam Turbine (ST) facility with a registered capacity of 9.9MW, the rest were CCGT¹ facilities with a total registered capacity of 451.9MW. This lifted the total generation registered capacity in the NEMS to 12,884MW in 2014. Of the total generation registered capacity in 2014, 76.8 percent (9,892MW) belonged to the CCGT category.

Diamond Energy Supply also registered a new Interruptible Load (IL) facility with a capacity of 2.2MW to provide contingency reserve. With this addition, the total IL registered capacity for contingency reserve is 25.4MW in 2014.

¹CCGT/cogen/trigen = Combined-cycle gas turbine/cogeneration/trigeneration (combined category)

Market Information Sharing Forum (MISF)

At the 78th session of the MISF held on 13 November, Debbie Tse, Senior Market Analyst of the Market Operations team, provided a recap of the market's performance and highlights for the months of September and October followed by the market outlook for November and December. She covered in detail the price separation incident that occurred in early November and gave an overview of the status of current system enhancements as well as on-going projects. Cherie Chen, Senior Market Analyst from the same team, closed the forum with a detailed review of a post implementation study conducted by the team following the implementation of the 'Tie-Breaking of Offers' in 2013.

The MISF held on 15 January 2015 was presented by Bai Jie, Senior Market Analyst from the Market Operations team. Market participants who are interested in presenting at MISFs are encouraged to come forward.

Market Systems User Group (MSUG)

The bi-monthly MSUG forum was held on 18 December. EMC IT updated the attendees on the following topics:

- Overview of NEMS systems availability year-to-date for FY 14/15;
- Overview of NEMS systems service desk calls received;
- Overview of Change Releases that occurred between December 2013 and November 2014;
- IT incidents that occurred from October to December, and actions taken to resolve them;
- Replacement of Web Services Secure Sockets Layer certificate with SHA-2 hashing algorithm on 7 January 2015;
- One-hour planned downtime in February 2015 for the Disaster Recovery exercise; and
- Status updates on key on-going IT Infrastructure and Application projects:
 - » Market Enhancements for Intermittent Generation Sources;
 - » Bilateral Contract Upload by Market Participants; and
 - » Demand Response, Compensation & Penalty Project.

The next MSUG forum is tentatively scheduled for Wednesday, 25 February 2015.

EMC TRAINING PROGRAMME NEXT COURSE ON 12 AND 13 FEBRUARY 2015

EMC will be holding the next run of its two-day course *Understanding Electricity Markets* on 12 and 13 February 2015. Our staff will be conducting six sessions covering the following topics:

- Understanding Electricity
 - Why Reform and Regulation is Essential in the Electricity Industry
 - The National Electricity Market of Singapore and its Unique Features
 - Pricing Mechanism and Economic Dispatch
 - Settlement
 - How Consumers can Influence Electricity Markets
- The course dates for 2015 are as follows:
- 12 – 13 February
 - 14 – 15 May
 - 13 – 14 August
 - 12 – 13 November

We advise you to book early to secure your place in the course dates 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

The EMC Bulletin is written by EMC for you and we are always striving to improve our service. 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 questions via e-mail to emc.newsletter@emcsg.com or via fax to +65 6779 3030. Thank you in advance for your time and effort.

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