CEO’s Message

Last Chance to Register for Singapore Electricity Roundtable 2019

Electricity Procurement Made Easy with PowerSelect

NEMS Charity Outing 2019

EMC’s Business Continuity Preparedness Exercises and Plans

EMC’s Customised Training Programme

Visitors to EMC

Market Update

New Entrants to the NEMS

User Forums

EMC Training Programme

We are into the second half of the year and EMC’s flagship event, the biennial Singapore Electricity Roundtable, is less than a month away.

We have a strong lineup of speakers who will be sharing their perspectives on important issues that the power sector is facing globally, as well as the experience of developed electricity markets in countries like Australia and the United Kingdom. Don’t miss the opportunity to gain valuable insights from these industry veterans and experts, and the chance to network with key industry stakeholders.

In the last two months, we hosted visitors from Mongolia and New Zealand, and conducted training for a group of delegates from the China Southern Power Grid Company. These are testaments to the success of Singapore’s liberalised electricity market, and we are privileged to share our experience with counterparts in the region.

In the National Electricity Market of Singapore (NEMS), we welcomed one new market participant and registered four new intermittent generation facilities between May and June. The Uniform Singapore Electricity Price (USEP) retreated for the fourth consecutive month and ended below $90.00/MWh in June as a result of the drop in the fuel oil price.

In addition, we have successfully completed our business continuity preparedness exercises for the financial year ending June 2019.

Finally, I am pleased to note that the annual NEMS charity outing continues to be well-received by the industry. I would like to thank all NEMS stakeholders for your continued support, and I look forward to welcoming you at the Singapore Electricity Roundtable.

Toh Seong Wah
Chief Executive Officer
Last Chance to Register for Singapore Electricity Roundtable 2019

If you have not registered for the biennial Singapore Electricity Roundtable, register now before all seats are taken up. Don’t miss the opportunity to gain insights into the electricity industry, and the chance to network with industry experts and decision makers from the power sector.

The Singapore Electricity Roundtable will be held on 30 July 2019 at The Fullerton Hotel, Singapore. The Roundtable is EMC’s flagship event and an important forum for the discussion of regional and global issues facing the electricity and energy sectors.

Our distinguished guests who will be speaking at the Roundtable are veterans and experts in the energy field. They are*:

- **Ngiam Shih Chun**, Chief Executive, Energy Market Authority, who will share the regulator’s perspectives on Singapore’s electricity market;
- **Ben Skinner**, General Manager, Policy & Research, Australian Energy Council, who will speak about integrating renewable energy into competitive electricity markets;
- **Damien Sanford**, Chief Operations Officer, Australian Energy Market Operator, who will outline the role of technology in power system security and reliability;
- **Phillip Harris**, Consultant and former President/CEO of PJM Interconnection, who will discuss capacity markets and the case for one in Singapore;
- **Stephen Woodhouse**, Director, Pöyry Management Consulting, who will examine the United Kingdom’s experience in liberalising its retail electricity market; and
- **Poa Tiong Siaw**, Senior Vice President, Market Administration, Energy Market Company, who will talk about the formation of a Market Advisory Panel to shape the future of the NEMS.

The conference will end with a networking cocktail reception and dinner for all Roundtable participants at Monti at Fullerton Pavilion.


*Speakers and topics are subject to change.

Electricity Procurement Made Easy with PowerSelect

EMC’s PowerSelect, an electricity procurement portal for businesses in Singapore, was launched in November 2018. Since its launch, the portal has conducted more than 30 auctions and helped businesses achieve significant savings in their electricity bills.

The additional savings that PowerSelect has helped businesses secure are as much as 12 percent compared to the reserve prices (or starting bids) that they set for the auctions. Aside from the cost savings, PowerSelect customers are grateful for the efficient procurement process as well as the access to data – like wholesale and futures electricity prices – which has helped them make more informed decisions about their electricity purchases.

In addition, the PowerSelect team also helps businesses understand and navigate the terms and conditions of different electricity retailers. This has been particularly helpful for small businesses or those with limited resources.

Arising from our experience so far, we recently introduced an Artificial Intelligence (AI) feature in PowerSelect to provide pricing analysis to help consumers set their auction parameters, for example, on when to conduct the auctions, the starting bids or reserve prices, as well as the contract durations. This value-added service is provided free to all customers.

PowerSelect has also partnered Citibank to provide all Citibank Commercial Card holders who procure electricity through PowerSelect, with a cash reward of either $120 or $240 (tiered by monthly electricity consumption).

To find out how PowerSelect can help your business, visit the [PowerSelect website](http://www.powerselect.sg), or contact the PowerSelect team at 6779 3000 or [support@powerselect.sg](mailto:support@powerselect.sg).
NEMS Charity Outing 2019

An excursion to the Singapore Flyer and Gardens by the Bay with Child at Street 11 – the non-profit organisation dedicated to looking after the emotional and educational needs of vulnerable children in the Ang Mo Kio area – was held on 24 May. A total of 44 volunteers from seven companies in Singapore’s power sector participated, helping to take care of the children during the outing.

The industry has been supporting Child at Street 11 since 2006. We are delighted that the annual outing, which provides an opportunity for the industry to get together for a good cause, continues to be well-received and supported by the market participants of the National Electricity Market of Singapore (NEMS).

EMC’s Business Continuity Preparedness Exercises and Plans

Every year, we conduct a series of business continuity preparedness (BCP) exercises to ensure that we are well prepared should a crisis occur. The following exercises were completed as part of our workplan for the financial year (FY) 2018/2019:

<table>
<thead>
<tr>
<th>Type of BCP Test</th>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disaster Recovery Preparedness Exercises</td>
<td>July – Aug 2018</td>
<td>• NEMS systems switched over to backup site.</td>
</tr>
<tr>
<td>Exercise Epsilon / EMC Call Tree Activation</td>
<td>September 2018</td>
<td>• All staff activated by phone. • Management team and identified personnel reported to office within pre-specified timeframe.</td>
</tr>
<tr>
<td>Exercise Jaguar</td>
<td>October 2018</td>
<td>• Industry-wide BCP exercise.</td>
</tr>
<tr>
<td>Exercise Thunderbolt</td>
<td>November 2018</td>
<td>• All staff evacuated from office to simulate emergency situation.</td>
</tr>
<tr>
<td>BCP Site Readiness Test</td>
<td>November 2018</td>
<td>• Recovery teams worked from alternate office site. • Identified personnel worked from home.</td>
</tr>
<tr>
<td>Home Quarantine Order Exercise</td>
<td>March 2019</td>
<td>• Critical teams conducted their daily operations from home.</td>
</tr>
<tr>
<td>Desktop Scenario Test</td>
<td>May 2019</td>
<td>• Management team worked on various scenarios to ensure familiarity with emergency crisis and business continuity procedures.</td>
</tr>
</tbody>
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EMC’s Customised Training Programme

EMC conducted a customised 10-day training programme in Singapore for 12 delegates from China Southern Power Grid Company Limited from 22 to 31 May. The group consisted of representatives from six power exchange centres in Southern China, led by Guangzhou Power Exchange Centre, a subsidiary under the China Southern Power Grid Company. The Company is responsible for implementing the national West-East Power Transmission Strategy, coordinating inter-provincial electricity transactions in Southern China, and promoting the efficient utilisation of generation resources across the different regions.

As part of the training programme, the delegates visited industry players in Singapore, such as PacificLight, where they were taken through the operations of an electricity generation plant in Singapore; Diamond Energy, where they received insights about demand-side management; Red Dot Power, which shared its experience operating in Singapore’s electricity market; and the Power System Operator (PSO), which provided an overview of the Singapore power system operations’ framework.

We hope that the insights and learnings from the 10-day training programme added value to the delegates, especially with China embarking on a journey to reform its power industry and liberalise its power market.

If you wish to explore similar training programmes for your organisation, please write to consultancy@emcsg.com.

Visitors to EMC

In the last two months, we welcomed guests from the Energy Regulatory Commission (ERC) of Mongolia, as well as Trustpower and Gentrack of New Zealand. Both groups of visitors were keen to learn more about Singapore’s electricity market.

We gave our visitors an overview of the National Electricity Market of Singapore (NEMS) and the operations of the wholesale electricity market. We also provided an update on developments in the retail market and introduced our electricity procurement platform, PowerSelect.

Visits like these provide valuable opportunities for the exchange of knowledge and the sharing of experiences.
One new market participant (MP) joined the National Electricity Market of Singapore (NEMS) in May:

<table>
<thead>
<tr>
<th>Market Participant</th>
<th>Market Participant Class</th>
<th>Date Registered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terrenus Energy Pte Ltd</td>
<td>Wholesale Market Trader</td>
<td>9 May</td>
</tr>
</tbody>
</table>

With the above addition, there are now 15 wholesale market traders in the NEMS. In addition, four new facilities were registered by three MPs in May and June:

<table>
<thead>
<tr>
<th>Market Participant</th>
<th>Facility Type</th>
<th>Capacity (MW)</th>
<th>Date Registered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sembcorp Solar Singapore Pte Ltd</td>
<td>Intermittent Generation Source (IGS)</td>
<td>3.852</td>
<td>9 May</td>
</tr>
<tr>
<td>Sunseap Leasing Pte Ltd</td>
<td>IGS</td>
<td>0.953</td>
<td>13 June</td>
</tr>
<tr>
<td>Terrenus Energy Pte Ltd</td>
<td>IGS</td>
<td>1.219</td>
<td>7 June</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.650</td>
<td>13 June</td>
</tr>
</tbody>
</table>

With these additions, the total registered capacity of IGS facilities stands at 87.217MW, or 0.6 percent of the total registered generation capacity in the NEMS.

The daily average Uniform Singapore Energy Price (USEP) ranged between $84.32/MWh and $111.15/MWh in May, and between $79.55/MWh and $115.44/MWh in June.

At the monthly level, June's USEP of $89.84/MWh was 3.7 percent lower than May's, despite the drop in the supply cushion by 0.1 percentage point to 27.0 percent. The drop in June's monthly USEP corresponded with the drop in the monthly fuel oil price, which decreased 6.0 percent in June.
User Forums
Market Information Sharing Forum (MISF)

The Market Operations team hosted the 105th session of the bi-monthly MISF on 9 May. During the forum, the following topics were shared with the attendees:

- Market performance in March and April 2019;
- Key highlights in March and April 2019;
- System enhancements and projects; and
- Feature topics:
  - Additional load scenarios of Look Ahead Runs (LAR);
  - Methodology of load forecast validation;
  - Jurong Island – Tembusu security constraint lifted; and

We would like to thank all participants for their continuous support and strong interest in the MISF. The next MISF is tentatively scheduled for 11 July. 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 20 June. EMC’s Technology team updated attendees on the following topics:

- Overview of NEMS systems availability year-to-date for FY2018/2019;
- Overview of NEMS systems service desk calls received between July 2018 and May 2019;
- Overview of change releases deployed between July 2018 and May 2019;
- NEMS systems incident;
- Planned NEMS maintenance;
- Disaster Recovery Preparedness Exercise;
- Status updates on Technology (infrastructure) projects:
  - Server Hardware Application Refresh Project (SHARP);
  - Managed Security Services (MSS); and
  - Application Programming Interface (API) Gateway Management Solution.
- Status updates on Technology (applications) projects:
  - Publication of additional load scenarios;
  - Validation of load forecasts;
  - Publication of offer data;
  - Implementation of API Gateway Management Solution; and
  - Risk exposure enhancement.

The next MSUG forum is tentatively scheduled for Thursday, 15 August.

EMC Training Programme

Next course on 22 and 23 August 2019

EMC will be holding the next run of its two-day course Understanding Electricity Markets on 22 and 23 August 2019. Our staff will be conducting seven 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 2019 are as follows:

- 22-23 August
- 14-15 November

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. For enquiries, please e-mail trainingprogramme@emcsg.com or contact Jan Lee at +65 6779 3000.