CEO’s Message

The Covid-19 situation is finally looking up in Singapore with the arrival of the vaccines and the start of Phase 3 of safe reopening in December last year. Even as we resume more activities gradually, some of the ways that we work and operate have changed in the course of the pandemic year. The new norms are likely to continue for a while and may even replace our old routines. Regardless, I look forward to the continued collaborations with all our stakeholders and colleagues as we welcome a new trading year for the National Electricity Market of Singapore (NEMS).

I am delighted to start the year by sharing a piece of great news from EMC – our licence to operate the NEMS’ wholesale electricity market has been renewed by the Energy Market Authority (EMA) for another 10 years, commencing 1 January 2023. We are extremely grateful for the EMA’s trust in us. We will work closely with all industry partners to ensure that the NEMS remains relevant, robust, and ready to meet new challenges, as we work towards a sustainable and reliable energy future for Singapore.

I am also pleased to welcome new members of our governance panels and witness the re-appointments of other panel members at the start of 2021. The Rules Change Panel, Market Surveillance and Compliance Panel and Dispute Resolution Counsellor play critical roles in the NEMS. I thank all outgoing members for their invaluable contributions, and convey my sincere appreciation to the new and re-appointed members for their dedication towards improving the market.

Additionally, I am also heartened that the last quarter of 2020 ended on a strong note for the NEMS. The Market Advisory Panel (MAP) wrapped up the report on the recommendations for the design of the Forward Capacity Market (FCM), and submitted it to the EMA for its consideration in October. As Chairman of the MAP, I thank all members of the Panel as well as the Industry Working Group 1 who have deliberated hard on related issues to put forward the proposals that are anchored on sound market design principles.

Strong engagement between stakeholders has been a hallmark of the NEMS since the start of the market. I am encouraged that EMC continues to be at the centre of industry consultations, providing an avenue for industry players to provide timely feedback on policy changes or new market initiatives.

The financial integrity of the NEMS was further strengthened with two rule changes approved by the EMA in November. The first rule change involved the tightening of the formulae for the default levy and net exposure calculations to more accurately reflect the amounts to be recovered when a market participant defaults on payment. The other change entailed the development of compensation guidelines for Load Registered Facilities that faced prolonged load curtailments.

Finally, the Uniform Singapore Energy Price (USEP) rebounded and registered the year’s highest monthly level of $92.27/MWh in November. We wrapped up the year by welcoming a new retailer, Flo Energy Singapore, in the NEMS in December. 2021 is going to be an exciting year, as we witness a new milestone for the NEMS – the start of a new market, the FCM, to ensure a reliable electricity supply for Singapore in the long run. All teams in EMC have been working closely with the EMA and market stakeholders on the project, and I am looking forward to a successful launch.

Toh Seong Wah
Chief Executive Officer
An Update on the Market Advisory Panel

In 2019, EMC established the Market Advisory Panel (MAP) to study issues affecting the long-term sustainability and development of the National Electricity Market of Singapore (NEMS). Two industry working groups were set up to support the MAP in its work.

The Industry Working Group 1 (IWG 1) was tasked to analyse issues relating to resource adequacy in the NEMS, and to review the design of the Forward Capacity Market (FCM) proposed by the Energy Market Authority (EMA).

At its third meeting held on 9 October 2020 to discuss the IWG 1’s proposals on the FCM, the MAP concluded its report which incorporated four key recommendations based on well-grounded market design principles:

- Provide a level-playing field for all technologies and participants as far as possible, to instill confidence for existing and potential participants;
- Provide clarity on the interactions between the FCM and the real-time markets, to ensure transparency in the market;
- Review the FCM on a regular basis to ensure that resource qualification methodologies are up-to-date and aligned with best practices; and
- Develop a participation model for distributed energy resources for future capacity auctions, to ensure competitive forward capacity prices, thereby minimising long-term costs for consumers.

The report was sent to the EMA on 26 October 2020 for its consideration for fine-tuning the proposed design for the FCM. For more information about the report, please visit:

https://www.emcsg.com/aboutthemarket/marketadvisorypanel

The second working group – the IWG 2 – was tasked to examine issues relating to the integration of new and emerging technologies in the NEMS, as well as to propose feasible solutions to the EMA that will facilitate the integration of these technologies into the NEMS. Work in this area is still ongoing.

Market Update

Overview of USEP and Supply Cushion – Jan to Dec 2020

In the last two months of 2020, the daily average Uniform Singapore Energy Price (USEP) ranged between $56.81/MWh and $275.33/MWh in November, and between $66.38/MWh and $180.01/MWh in December. The monthly average USEP, which rose 36.8 percent to $92.27/MWh in November, decreased 8.2 percent to $84.69/MWh in December – remaining well above the $80/MWh-level in both months. There were only four months in 2020 (January, February, November and December) when the USEP registered more than $80/MWh.

In November, demand declined by 0.8 percent while supply fell more significantly by 3.6 percent. This resulted in 2020’s lowest monthly supply cushion level of 21.3 percent and in turn, the year’s highest monthly USEP level of $92.27/MWh.

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In December, demand and supply rose by 0.5 percent and 2.7 percent respectively. This led to a 7.9 percent increase in the supply cushion, which contributed to the lower average USEP for the month. Despite the slight decline, December’s USEP of $84.69/MWh was the third highest monthly level for the year.
Appointments in Governance Panels

Appointments of 2021-2023 Rules Change Panel

The Rules Change Panel (RCP) plays an integral role in shaping the Singapore Wholesale Electricity Market (SWEM), enhancing its efficiency and maintaining a level playing field. It does so by recommending to the EMC Board changes to the Singapore Electricity Market Rules, which govern the wholesale electricity market operations of the National Electricity Market of Singapore (NEMS).

As the term of the previous panel members ended on 31 December 2020, the EMC Board has appointed members to the RCP for the new term that runs from 1 January 2021 to 31 December 2023 (see table on the right).

EMC thanks all outgoing members for their invaluable commitment and contributions to the RCP, and welcomes the new panel on board.

Re-appointment of Market Surveillance and Compliance Panel Members

EMC is pleased to announce that the EMC Board has re-appointed Philip Chua and Professor Walter Woon to the Market Surveillance and Compliance Panel (MSCP). Their new three-year terms began on 1 January 2021.

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

The MSCP comprises T P B Menon (Chair), Er Lee Keh Sai, Philip Chua, Professor Euston Quah and Professor Walter Woon.

Re-appointment of Dispute Resolution Counsellor

The EMC Board has re-appointed George Lim as the Dispute Resolution Counsellor (DRC) for another three-year term beginning 1 January 2021.

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

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Rules Change Panel (2021 – 2023)

<table>
<thead>
<tr>
<th>Member category</th>
<th>Nominated by</th>
<th>Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chief Executive of EMC (Chair of the Panel)</td>
<td>-</td>
<td>Toh Seong Wah</td>
</tr>
<tr>
<td>Employee of EMC not being the Chief Executive</td>
<td>EMC Board Chairman</td>
<td>Henry Gan</td>
</tr>
<tr>
<td>Representative of the PSO</td>
<td>PSO</td>
<td>Soh Yap Choon</td>
</tr>
<tr>
<td>Representatives of the generation licensee class of market participant</td>
<td>PacificLight Power</td>
<td>Teo Chin Hau</td>
</tr>
<tr>
<td></td>
<td>Senoko Energy</td>
<td>Calvin Quek</td>
</tr>
<tr>
<td></td>
<td>Tuas Power Generation</td>
<td>Tony Tan</td>
</tr>
<tr>
<td>Representative of the transmission licensee class of market participant</td>
<td>SP PowerGrid (agent of SP PowerAssets)</td>
<td>Carol Tan</td>
</tr>
<tr>
<td>Representatives of the retail electricity licensee class of market participant</td>
<td>Keppel Electric</td>
<td>Sean Chan</td>
</tr>
<tr>
<td></td>
<td>Sembcorp Power</td>
<td>Song Jian En</td>
</tr>
<tr>
<td></td>
<td>Seraya Energy</td>
<td>Terence Ang</td>
</tr>
<tr>
<td>Representative of the wholesale electricity trader class of market participant</td>
<td>Air Liquide Singapore</td>
<td>Cheong Zhen Siong</td>
</tr>
<tr>
<td>Representative of the market support services licensees</td>
<td>SP Services</td>
<td>Ho Yin Shan</td>
</tr>
<tr>
<td>Person experienced in financial matters in Singapore</td>
<td>Institute of Singapore Chartered Accountants (ISCA)</td>
<td>Tan Chian Khong</td>
</tr>
<tr>
<td>Persons representing the interests of consumers of electricity in Singapore</td>
<td>Consumers Association of Singapore (CASE)</td>
<td>Dr Toh Mun Heng</td>
</tr>
<tr>
<td></td>
<td>Singapore Chemical Industry Council (SCIC)</td>
<td>Fong Yeng Keong</td>
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</tbody>
</table>
New Entrant to the NEMS

One new market participant registered

We welcomed one new market participant in the National Electricity Market of Singapore (NEMS) in December:

<table>
<thead>
<tr>
<th>Market Participant</th>
<th>Market Participant Class</th>
<th>Date Registered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flo Energy Singapore Pte Ltd</td>
<td>Retailer</td>
<td>3 December 2020</td>
</tr>
</tbody>
</table>

With the above addition, there are now 22 retailers in the NEMS.

Rule Change Updates

Rectification of Default Levy and Estimated Exposure Formulae

In the Singapore Wholesale Electricity Market (SWEM), if a market participant (MP) defaults on its payment and its credit support amount held by EMC is insufficient to cover its invoice amount, a default levy arrangement allocates the residual credit risk to the market. The arrangement is such that one or more default levies may be imposed on the non-defaulting MPs.

A rule change was proposed to correct two formulae pertaining to the default levy and net exposure calculations.

During its review, EMC found that the second default levy formula could potentially result in an overstatement of the amount to be recovered from the market. Changes were thus proposed so that the offsetting effect of any credit support claimed in respect of the MP’s default in payment will be accurately reflected.

EMC also uncovered deficiencies in the formula to calculate the estimated net exposure of a defaulting MP. Changes were proposed to include a defaulting MP’s unpaid invoice amounts to correctly reflect that MP’s net exposure.

The Rules Change Panel (RCP) unanimously supported the proposed rule change. The rule change was approved by the Energy Market Authority (EMA) on 9 November 2020 and has come into effect on 7 January 2021.

Compensation Guidelines For Interruptible Load Facilities Interrupted For Prolonged Duration

Load Registered Facilities (LRF) currently provide reserves in the SWEM through the Interruptible Load (IL) scheme. Upon activation, LRFs scheduled for reserves are obligated to curtail their loads, until the Power System Operator (PSO) issues a load restoration notice. If the curtailments last longer than 120 minutes, the LRFs may seek compensation from the PSO.

A rule change was proposed to develop compensation guidelines for LRFs that experience prolonged curtailment, in order to provide greater certainty on the compensation amounts. EMC developed compensation guidelines after surveying similar IL products in other jurisdictions. EMC considered that the Uniform Singapore Energy Price (USEP) serves as a fair and transparent indicator of the marginal system avoided cost, and is therefore representative of the value of a prolonged curtailment. It thus proposed for the compensation to be based on the prevailing USEPs in the affected periods.

The RCP unanimously supported the proposed compensation guidelines and endorsed the publication of the guidelines for MPs’ reference. The rule change was approved by the EMA on 9 November 2020 and will come into effect on 28 April 2021.

For more details of the above rule changes, please visit EMC’s website.
**User Forums**

**Market Information Sharing Forum (MISF)**

The Markets and Operations team hosted the 114th session of the bi-monthly MISF on 12 November virtually via WebEx. The following topics were shared with the attendees during the session:

- Market performance and key highlights in September and October;
- System enhancements and projects; and
- Feature topics:
  - Recap on "Review of timelines in relation to provision of credit support"
  - Review of default levy arrangements (Stage 2); and
  - Offer Index Pool – Offer Curve Index (OCI), Offer Price Index (OPI), Offer Quantity Index (OQI)

We would like to thank all participants for their continuous support and strong interest in the MISF.

Market participants who are interested in presenting at future MISFs are encouraged to contact the Markets and Operations team.

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**Market Systems User Group (MSUG)**

The bi-monthly MSUG forum was held virtually via WebEx on 17 December. EMC's Technology team updated attendees on the following topics:

- Overview of NEMS systems availability year-to-date for FY2020/2021;
- Overview of NEMS systems service desk calls received between December 2019 and November 2020;
- Overview of change releases deployed between December 2019 and November 2020;
- NEMS systems incidents;
- Planned NEMS Systems maintenance for December 2020 and January 2021;
- Disaster Recovery Preparedness (DRP) Exercise;
- Status updates on Technology (infrastructure) projects:
  - Network technology refresh;
  - Tier 3 network segregation project;
  - NEMSCAP Refresh Project (NRP);
  - Database upgrade;
  - Single Sign On (SSO) server technology refresh; and
  - 2-Factor Authentication Using Software Based Tokens.
- Sharing of statistics on report downloads (via Web Services)
- Status updates on Technology (applications) projects:
  - Review of timelines for provision of credit support;
  - Review of default levy arrangements (Stage 2);
  - Migration of Submissions Management System; and
  - Publication of Annual Generator Outage Programme (AGOP) notification subscription and web service in comma-separated values (CSV) format.

The next MSUG forum is tentatively scheduled for Thursday, 18 February 2021. We will update all participants via email ahead of the forum.

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**EMC Training Programme**

**Next course on 25 and 26 February 2021**

The next run of the virtual two-day course *Understanding Electricity Markets* is scheduled on 25 and 26 February. Our trainers 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
- Market Settlement and Credit Risk Management
- How Consumers can Influence Electricity Markets

The course dates* for 2021 are as follows:

- 20 and 21 May
- 19 and 20 August
- 18 and 19 November

*Subject to changes arising from developments in the Covid-19 pandemic

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

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.