June marked the end of our financial year at EMC. We concluded the year with a virtual learning fiesta day for our colleagues which focused on the topic of wellness. The event was timely as it coincided with the period of heightened alert in Singapore, when the Covid-19 safe management measures were tightened and working from home became the default work arrangement once again.

I hope our colleagues benefited from the discussions, and gained new perspectives and tips on improving their general well-being. Let us continue to stay connected and support one another even as we work physically apart during this period.

For EMC, the transition back to working from home was smooth and the operations of the wholesale market continued with no disruptions. This is due in part to the rigour with which we test our business continuity preparedness (BCP) plans every year. In the past year, we completed a total of six BCP exercises at both the company and industry level which tested the resilience of the market systems, our processes, our people as well as our alternate working sites.

In the last two months, we welcomed a new generation licensee and registered two new intermittent generation source facilities in the market. We also held the first industry-wide, virtual engagement event which included a presentation on the potential impact of renewable energy on the wholesale electricity market. I am gratified with the good feedback for the event and the engaging discussions around a topic of great relevance to the market.

EMC will continue to provide such platforms for the discussion of pertinent industry issues. Another area that we constantly strive towards is to add value to the market and our market participants (MPs). In this respect, I am pleased to announce that we will launch a new Market Clearing Workshop later this year. The workshop will complement the current two-day course, Understanding Electricity Markets, in enhancing knowledge on the pricing mechanism in the National Electricity Market of Singapore (NEMS). More details of the workshop will be shared once they are ready.

Finally, let me conclude with some positive news for our MPs. Arising from the extraordinary cost-cutting measures that EMC undertook in 2020 to manage the unprecedented challenges brought about by the Covid-19 pandemic, we achieved one-off savings of close to $0.9 million in the last financial year. This amount will be returned to the market once we have received the necessary regulatory approval.

Toh Seong Wah
Chief Executive Officer
NEMS Virtual Update and Engagement Event

In view of restrictions for physical events which remain in place, EMC hosted the first fully virtual, industry-wide event for the National Electricity Market of Singapore (NEMS) on 6 May.

We are heartened by the positive feedback for both the presentation segment as well as the hands-on workshops that followed it. In particular, the presentation on the potential impact of renewable energy on the wholesale electricity market provided interesting insights and prompted stimulating discussions among the participants.

As the NEMS’ independent market operator, EMC has always sought to connect the industry and provide platforms for the discussion of critical industry issues. We look forward to having more robust conversations with our industry partners as we work towards our common goals of energy security and sustainability.

![Market participants of the NEMS at the virtual event](image1)

![Presentation on the potential impact of renewable energy by Henry Gan, EMC's Senior Vice President for Markets and Operations](image2)

EMC’s Virtual Learning Fiesta Day

We marked the end of our financial year with a virtual learning fiesta day on 11 June. Wellness was the theme of the full-day event, which was fitting as it was held during the period of heightened alert when Covid-19 safe management measures were tightened in Singapore and all our colleagues were working from home.

Our CEO opened the event by reminding our colleagues to continue focusing on the following three pillars as we collaborate with the industry to evolve the National Electricity Market of Singapore (NEMS) – drive industry discussions on issues pertinent to the NEMS, build trust with our stakeholders, and add value to the market.

At the same time, he highlighted the critical role that our people play in executing these strategies. Hence, the day’s programme and discussions centred around wellness and how we can better support one another especially during this period of remote working.

We were delighted for the opportunity to connect and have meaningful conversations with all our colleagues. We hope that everyone continues to stay safe as we look forward to the day when we can all be back in the office as before.

![Recognition of the mental health and well-being of our colleagues](image3)

![EMC colleagues enjoying the virtual team-building session](image4)
Market Update

Overview of USEP and supply cushion – Jan to Jun 2021

The daily average Uniform Singapore Energy Price (USEP) ranged between $86.44/MWh and $262.64/MWh in May, and between $89.55/MWh and $125.65/MWh in June. The monthly average USEP, which rose 2.5 percent to $100.31/MWh in May, increased further 0.3 percent to $100.61/MWh in June. This marked the second consecutive month of increase in the monthly average USEP as the supply cushion continued to stay low.

In May, demand rose 0.6 percent to 6,255MW while supply fell 0.7 percent to 8,032MW. This resulted in a 1.0 percentage point drop in the monthly supply cushion to 22.1 percent, and the increase in the USEP.

In June, demand rose another 1.2 percent to 6,333MW while supply declined 0.8 percent to 7,970MW. This caused the monthly supply cushion to tighten by 1.6 percentage points to 20.5 percent, and pushed the monthly USEP higher. June’s supply cushion level is the lowest for the year so far.

New Entrants to the NEMS

One new market participant and two new facilities registered in the NEMS

We welcomed one new market participant in 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>Sembcorp Floating Solar Singapore Pte Ltd</td>
<td>Generation Licensee</td>
<td>13 May</td>
</tr>
</tbody>
</table>

With the above addition, there are now 16 generation licensees in the NEMS.

In June, two new facilities were registered by Sunseap Leasing and Sembcorp Floating Solar Singapore:

<table>
<thead>
<tr>
<th>Market Participant</th>
<th>Facility Type</th>
<th>Capacity (MW)</th>
<th>Date Registered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunseap Leasing Pte Ltd</td>
<td>Intermittent Generation Source (IGS)</td>
<td>3.6</td>
<td>3 June</td>
</tr>
<tr>
<td>Sembcorp Floating Solar Singapore Pte Ltd</td>
<td>IGS</td>
<td>40.0</td>
<td>16 June</td>
</tr>
</tbody>
</table>

With these additions, the total registered capacity of IGS facilities stands at 275.804MW, or 2.3 percent of the total registered generation capacity in the 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 2020/2021:

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Date</th>
<th>Activity / Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disaster Recovery Preparedness Exercises</td>
<td>October 2020 &amp; April 2021</td>
<td>Switchover and switchback of NEMS systems between primary and backup site.</td>
</tr>
<tr>
<td>Exercise Jaguar</td>
<td>November 2020</td>
<td>Industry-wide BCP exercise to test the industry’s coordinated response to system emergencies.</td>
</tr>
<tr>
<td>Exercise Epsilon / EMC Call Tree Activation</td>
<td>November 2020</td>
<td>Activation of all staff by phone. Reporting by management team and identified personnel back in office within pre-specified timeframe. Both exercises were conducted in conjunction with Exercise Jaguar.</td>
</tr>
<tr>
<td>Exercise Thunderbolt</td>
<td>February 2021</td>
<td>In view of ongoing Covid-19 pandemic, the usual physical evacuation exercise was replaced by a refresher briefing for all staff on the office evacuation route during an emergency.</td>
</tr>
<tr>
<td>BCP Site Readiness Test</td>
<td>March 2021</td>
<td>Testing of office equipment in BCP site remotely by BCP recovery teams. Testing of work from home arrangements by identified staff.</td>
</tr>
<tr>
<td>Desktop Scenario Test</td>
<td>May 2021</td>
<td>Desktop exercise for Crisis Management Team. Focus this year was to test the robustness of our pandemic preparedness plan and business continuity procedures for the management of Covid-19.</td>
</tr>
</tbody>
</table>

Apart from the conduct of the above exercises, EMC continued with our split work arrangement which has been activated since February 2020 in line with the Covid-19 developments and advisories from the Singapore government.

Coming Soon: EMC’s New Market Clearing Workshop

We are pleased to announce that EMC will launch a new Market Clearing Workshop later this year.

The workshop is a great extension for participants who have gone through our two-day Understanding Electricity Markets course that we have been conducting since 2005. At the same time, anyone who is interested to deep-dive into the market clearing mechanism in the National Electricity Market of Singapore (NEMS) can also attend the new workshop as a stand-alone course.

The workshop will cover the following nine modules:

- Overview of market clearing
- Market Clearing Engine (MCE) mathematical model
- Generation dispatch and marginal pricing
- Transmission modelling and nodal pricing
- Ancillary service markets
- Co-optimisation among energy and all ancillary products
- Constraint violation penalties
- Tie-breaking
- Demand response

At the end of the course, you will have a deeper appreciation of the NEMS’ pricing mechanism, understand how constraints interact with each other to affect generation dispatch schedules and prices, and be able to rationalise why seemingly counter-intuitive prices can occur. The course will also include simulation demonstrations making use of EMC’s proprietary simulation software, which replicates the functions of the NEMS’ real-time MCE, to deepen understanding of the topics.

We are planning to launch the workshop in the third quarter of this year, and will share more details once they are ready. In the meantime, please email trainingprogramme@emcsg.com if you have any queries or to register your interest.
User Forums

Market Information Sharing Forum (MISF)

The Markets and Operations team hosted the 117th session of the bi-monthly MISF on 20 May virtually via WebEx. The following topics were shared with the attendees during the session:

- Market performance and key highlights in March and April;
- System enhancements and projects; and
- Feature topics:
  - Compensation guidelines for Interruptible Load facilities interrupted for prolonged duration;
  - First Energy Storage System (ESS) facility in the NEMS; and
  - Recap of rule change on Review of Default Levy Arrangements; and
- Introduction to Market Clearing Workshop.

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.

Market Systems User Group (MSUG)

The bi-monthly MSUG forum was held virtually via WebEx on 17 June. 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 June 2020 and May 2021;
- Overview of change releases deployed between June 2020 and May 2021;
- NEMS systems incidents;
- Planned NEMS maintenance;
- Disaster Recovery Preparedness (DRP) Exercise;
- Status updates on Technology (infrastructure) projects:
  - NEMSCAP Refresh Project (NRP);
  - Database upgrade; and
  - Single Sign-On (SSO) server technology refresh.
- Statistics on report downloads (via Web Services);
- Setting of hard limit threshold on report downloads (via Web Services) for all market participants from 1 September;
- Status updates on Technology (applications) projects:
  - Migration of Submissions Management System (Submission 2.0);
  - Publication of Annual Generator Outage Programme (AGOP) notification subscription and Web Services in comma-separated values (CSV) format; and
  - NEMSCAP Refresh Project (NRP).

The next MSUG forum is tentatively scheduled for Thursday, 19 August. We will update all participants via email ahead of the forum.

EMC Training Programme

Next course on 19 and 20 August 2021

The next run of the virtual two-day course Understanding Electricity Markets is scheduled on 19 and 20 August. 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:
- 19 and 20 August
- 18 and 19 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 where applicable.

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.