CEO’s Message

We started our new financial year in July with all our colleagues working from home once again, as a result of tightened safe management measures (SMMs) for the ongoing pandemic.

I am very glad that we have since returned to the office at the point of writing this message, albeit still on a rotational, split-team basis. I hope this marks the start of a smooth journey of re-opening and the restoration of a new normalcy to our lives which have been so severely disrupted by the pandemic.

Despite the challenge of operating the wholesale electricity market remotely for prolonged periods each time the SMMs were tightened, our team kept the market running seamlessly throughout the whole period. I am thus extremely proud that we maintained our record of perfect scores for all the performance targets set by the Energy Market Authority for the last financial year. I would like to express my sincere appreciation to all my colleagues for the tremendous effort put in to make this possible.

The EMC team’s resilience and hard work is also reflected in the high satisfaction ratings that we received for our annual Customer Satisfaction Survey. I am heartened that we have continued to meet our stakeholders’ expectations, and I thank all our partners for their trust and support.

As the wholesale operator of the National Electricity Market of Singapore (NEMS), we are always looking for opportunities to add value to the market and our market participants. After many months of preparation, I am pleased to announce that we will be launching our new Market Clearing Workshop in October. The course will deep-dive into the NEMS’ market clearing mechanism, and will benefit anyone who wants to better understand how prices are determined in Singapore’s electricity market.

On the topic of prices, the wholesale electricity market saw several days of high prices in July due to tight supply conditions. This resulted in the Uniform Singapore Energy Price (USEP) reaching $167.04/MWh, which is the highest monthly level so far this year. Prices have since receded, and the USEP closed at $136.57/MWh in August.

Arising from our split-team arrangements, many of our colleagues have not met one another face-to-face for more than a year. Throughout this period, we have been holding company-wide virtual events regularly to keep everyone connected and maintain the camaraderie that is so critical in any organisation. These events never fail to attract enthusiastic participation from all our colleagues. In August, we celebrated Singapore’s 56th birthday as well as the birthdays of some of our colleagues. I was glad to see all the happy and familiar faces once again, and I hope everyone enjoyed the programme as much as I did.

Toh Seong Wah
Chief Executive Officer
EMC’s Non-Financial Performance Results for FY2020/2021

We are pleased to share the excellent results achieved by the EMC team for our key performance measures for FY2020/2021.

These results would not have been possible without the resilience and hard work of all our colleagues, who had to put in extra effort to ensure that the National Electricity Market of Singapore (NEMS) continued to operate efficiently when we had to return to work-from-home arrangements from May to August this year due to the tightening of Covid-19 safe management measures.

Regulated Performance Standards
EMC continues to exceed all performance targets set by the Energy Market Authority (EMA). For the sixth consecutive year since the targets were introduced, we achieved perfect scores for all four service dimensions as outlined below. The outstanding performance can be attributed to the team’s sustained efforts in enforcing high standards and quality in our critical processes.

<table>
<thead>
<tr>
<th>Service Dimension</th>
<th>Service Indicator</th>
<th>For the Period 1 Jul 2020 to 30 Jun 2021</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Performance Target</td>
<td>Achievement</td>
</tr>
<tr>
<td>Systems Availability</td>
<td>Percentage of availability of EMC’s systems including (i) trading website; (ii) clearing systems; and (iii) settlement system.</td>
<td>99.90%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Pricing Accuracy</td>
<td>Percentage of all trading days free of incidents caused by EMC error.*</td>
<td>99.70%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Settlement Accuracy</td>
<td>Percentage of all settlement payments free of EMC error.*</td>
<td>99.90%</td>
<td>100.00%</td>
</tr>
<tr>
<td>Customer Responsiveness</td>
<td>Percentage of all market participants’ issues lodged with EMC Helpdesk to be resolved within 6 business days.</td>
<td>80.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td></td>
<td>Percentage of all market participants’ issues lodged with EMC Helpdesk to be resolved within 10 business days.</td>
<td>100.00%</td>
<td>100.00%</td>
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</tbody>
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EMC Customer Satisfaction Survey
In addition to the EMA’s performance targets, EMC conducts an annual Customer Satisfaction Survey separately to gather feedback from the key stakeholders of the NEMS. This is a voluntary exercise that we undertake to ensure that we continue to deliver high service levels to our stakeholders.

We are delighted that we continue to receive high satisfaction ratings from our stakeholders despite the challenge of managing the expectations of an increasing number and changing mix of market participants in the NEMS.

We thank all NEMS stakeholders for their trust in EMC and their continued participation in the survey. We will work towards closing the gaps where there were service lapses, while maintaining our service levels in the areas in which we have done well.

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Achievement 1 Jul 2020 – 30 Jun 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction with Customer Responsiveness</td>
<td>96.91%</td>
</tr>
<tr>
<td>Satisfaction with Market Assessment and Dispute Resolution Services</td>
<td>100.00%</td>
</tr>
<tr>
<td>Satisfaction with Rule Change Services</td>
<td>97.08%</td>
</tr>
</tbody>
</table>
EMC’s National Day Event

We commemorated Singapore’s 56th National Day with a virtual event for our colleagues in August. The virtual celebrations saw a strong turnout, with almost everyone joining in despite working from different locations.

The event began with a National Day Trivia Quiz. Many of our colleagues were knowledgeable and fast in responding to the trivia questions on significant dates as well as the laws and history of Singapore. Congratulations to the nine extremely worthy winners!

Our staff also participated enthusiastically in the dress-up competition, and showcased their creativity with bright National Day virtual backgrounds.

In addition, we took the opportunity to celebrate the birthdays of our colleagues born in the months of July and August.

Moving forward, we will continue to hold virtual birthday celebrations bi-monthly, and birthday treats will be delivered to our colleagues ahead of these celebrations.

It has been more than a year since we have met one another face-to-face due to our split-team work arrangements. Despite this, we have stayed connected as a company through similar virtual events, and we will continue to do so regularly to maintain everyone’s spirits until we can all return to the office once again.

Update on New Market Clearing Workshop

We are pleased to update that EMC’s new Market Clearing Workshop will be launched in October.

The workshop will be conducted virtually over four half-days, and the inaugural run of the workshop will be held on 7, 8, 11 and 12 October.

The Market Clearing Workshop is a great follow-up for participants who have gone through the 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:

- Market clearing overview
- Market Clearing Engine (MCE) mathematical model
- Generation dispatch and marginal pricing
- Transmission modelling and nodal pricing
- Ancillary service markets
- Co-optimisation of energy, regulation and reserve
- Constraint violation penalties (CVP) and stepwise CVP
- 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.

More details of the course and registration process can be found on our website. For enquiries, please e-mail trainingprogramme@emcsg.com or contact Jan Lee at +65 6779 3000.
We welcomed one new market participant in the National Electricity Market of Singapore (NEMS) in August:

<table>
<thead>
<tr>
<th>Market Participant</th>
<th>Market Participant Class</th>
<th>Date Registered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terrenus Energy SL2 Pte Ltd</td>
<td>Wholesaler Market Trader</td>
<td>25 August</td>
</tr>
</tbody>
</table>

With the above addition, there are now 16 wholesaler market traders in the NEMS.
User Forums

Market Information Sharing Forum (MISF)
EMC’s Markets and Operations team hosted the 118th session of the bi-monthly MISF on 15 July virtually via WebEx.

The following topics were shared with the attendees during the session:

- Market performance and key highlights in May and June;
- System enhancements and projects; and
- Feature topic:
  - Recap on rule change on Review of Constraint Violation Penalty.

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 19 August. 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 availability year-to-date for FY2021/2022;
- Overview of NEMS systems service desk calls received between August 2020 and July 2021;
- Overview of change releases deployed between August 2020 and July 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;
  - NEMSCAP Refresh Project (NRP); and
  - Settlement Engine Application Upgrade Project.

The next MSUG forum is tentatively scheduled for Thursday, 21 October. We will update all participants via email ahead of the forum.

EMC Training Programme

Next course on 18 and 19 November 2021
The next run of the virtual two-day course Understanding Electricity Markets is scheduled on 18 and 19 November. 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

Further details on the programme and on how to register can be found on our website. For enquiries, please e-mail trainingprogramme@emcsg.com or contact Jan Lee at +65 6779 3000.