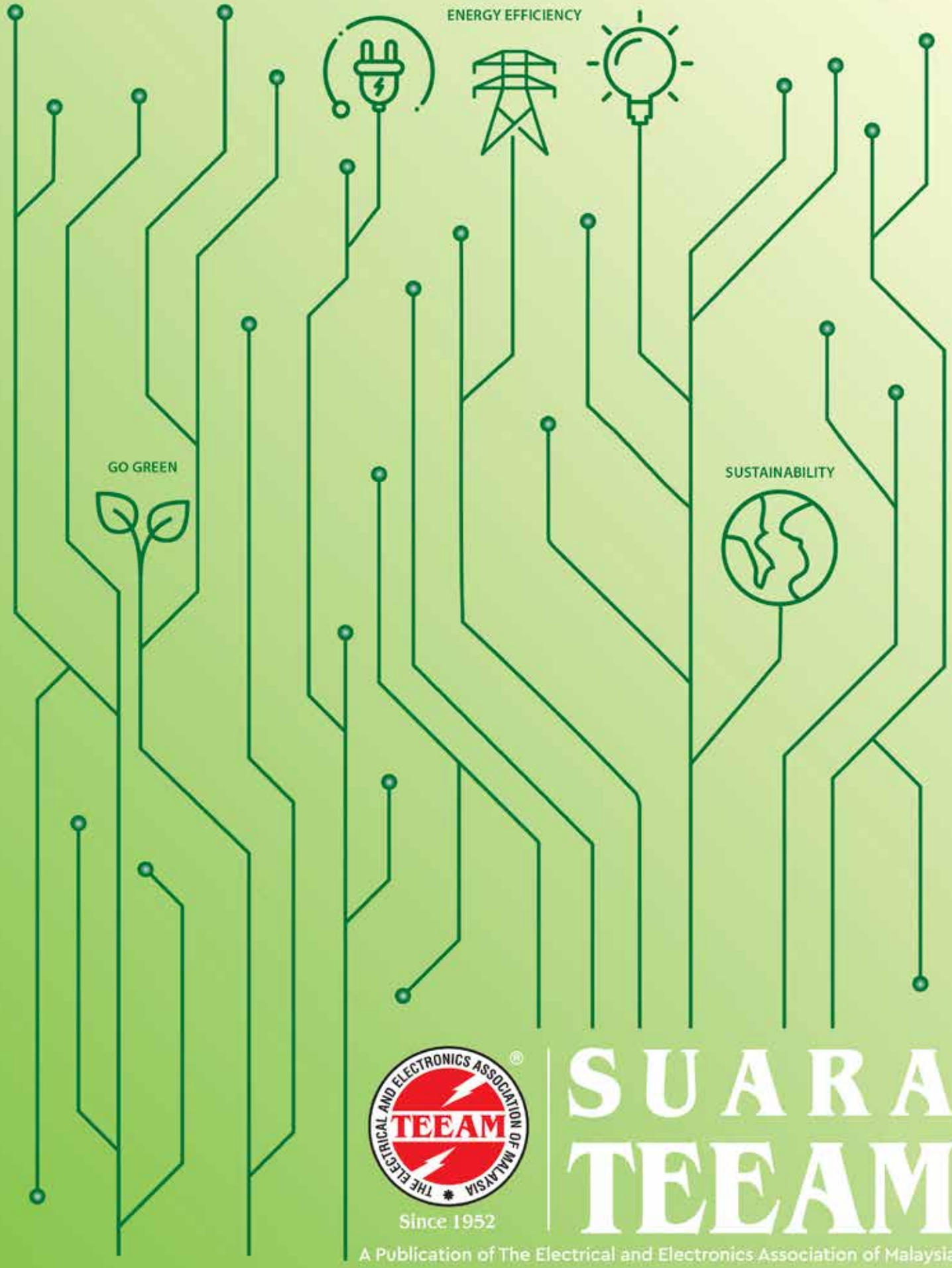

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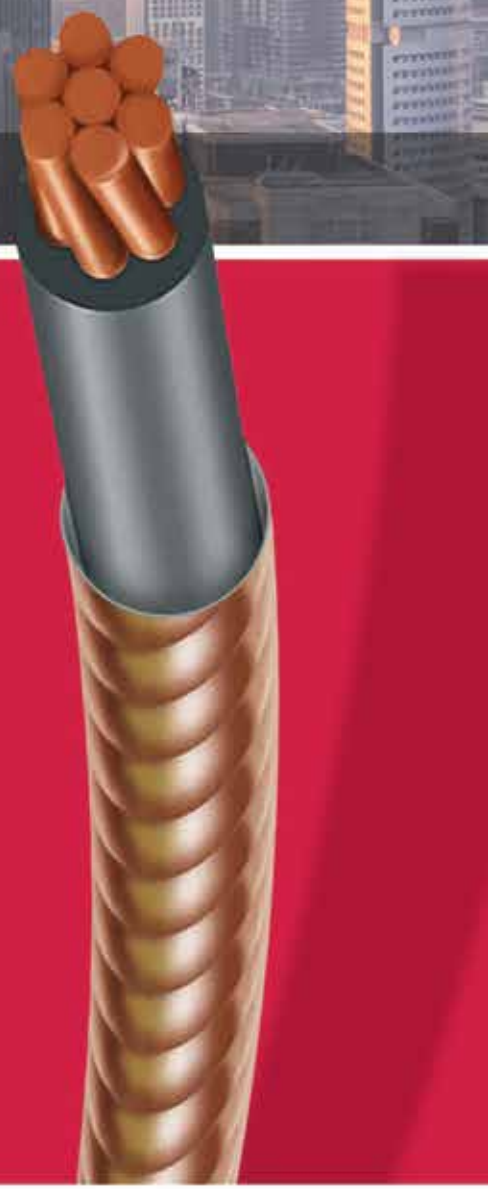

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Contents

Activities

Feature Articles

Information

Highlights

TEEAM 69th Annual General Meeting & Election 2021 page 7

TEEAM's CSR for Flood Victims page 17

CIE 2021 Mid-term Meeting & Conference page 23

Briefing Session by HRD Corp page 29

Malaysian Economic Statistics Review Volume 1/2022 page 51

BNM's Disaster Relief Facility (DRF) 2022 page 57

Plugs, Socket-Outlets for Industrial Purposes

LS – TYPE Plugs and Socket-Outlets for Entertainment

Plugs

Couplers

Inclined flush mounting sockets - Watertight IP67

PEW...PI 16A-32A 63A-125A

Couplers - Watertight IP66/IP67

16A-32A

Wall-mounting plugs - Watertight IP67

PEW...SM 63A

Plugs – Watertight IP66/IP67

PEW...SV 16A – 32A

Interlocked switched socket-outlets with screw type fuse carrier aluminium enclosure – splashproof IP55

(PK...PB5 125A)

Interlocked Switched Socket-Outlets

TM...SP

Plugs - Low voltage from 50V to 690V

IP44

PE...PP 16A-32A

PE...PQ 16A-32A

PE...SV 16A-32A

IP67

Couplers 16A-32A

SIPW...SV

PEW...PP 16A-32A

Multipole Connectors for Industrial Purposes

C-Type

IP Enclosure C-Type

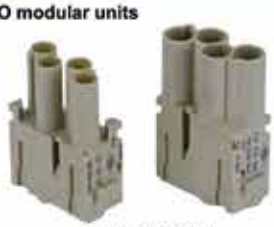
Hoods with 2 levels

Hoods with 1 level

CNE-CSE 16 Poles

Inserts, Screw terminal connection

MIXO modular units



4 poles 40A-830V

CT – CTS 64 Poles

Terminal blocks inserts screw terminal connection

CP 6 Poles 35A-400/690V

Inserts, screw terminal connection

CKS 3 and 4 Poles

Inserts, 3 poles + connection with spring terminal

Inserts, 4 poles + connection with spring terminal

CMCE 3+2 (aux) polest

Inserts, Crimp Connections

MIXO modular units 2 poles 100A

Crimp connections

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From The Editor's Desk

Congratulations to our in-coming TEEAM President and the newly-elected 2021-2023 TEEAM Council during the recent TEEAM AGM, which was successfully held on 19 December 2021 @ New World Hotel, Petaling Jaya. TEEAM President, Mr CT Siew highlighted the National Recovery Plan (NRP) with the 6R approach, namely; Resolve, Resilient, Re-start, Recovery, Revitalise and Reform. Surely any of the above-mentioned R's will fit into your current business situation and allow you to make some positive improvements to your businesses' bottom line.

Although we are currently under the threat of the contagious Omicron virus, there is much hope that the dreaded and business-disrupting COVID-19 pandemic may finally clear up later this year.

Our TEEAM CSR Committee has pro-actively and speedily responded to the urgent needs of the recent flood victims. On hand to deliver the flood aids were Mr CT Siew (TEEAM President), Ir. YC Chang (Deputy President), Ir. Dr. KC Ng (Honorary Secretary), Ts. SS Lim (Honorary Treasurer & CSR Co-Chairman), Mr CS How (CSR Chairman), Ir. KC Lee (Council Member) and Mr Harpajan Singh (CSR Committee Member).

The 12th Young Professionals' (YPs') Workshop of the International Electro-Technical Commission (IEC), successfully took place across five days, in parallel with the 85th IEC General Meeting, from 3 to 7 October 2021 in Dubai, United Arab Emirates (UAE). Ms Nurul Ashikin Mohd Rodzi from TEEAM was one of the distinguished Malaysian IEC YPs.

The CIE Mid-Term Meeting & Conference was successfully hosted online via Zoom by CIE and Malaysia CIE (MyCIE), and it was fully supported by TEEAM, from 27 to 29 September 2021.

May this auspicious New Year of the Tiger joyfully usher in double prosperity and much better golden opportunities in business for all of our highly esteemed TEEAM Members.

HAPPY CHINESE NEW YEAR 2022!

Regards,

Ir Chew Shee Fuee, KMN
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Suara TEEAM

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Elected TEEAM Council at the AGM

TEEAM 69th Annual General Meeting & Election 2021

TEEAM successfully hosted its 69th Annual General Meeting & Election of New Office-bearers for the term 2021-2023 on Sunday, 19 December 2021 at the New World Hotel, Petaling Jaya. The AGM was overwhelmed with 56 attendees and it was convened smoothly under strict Standard Operating Procedures (SOPs) set forth by the Ministry of Health for physical meetings.

AGM in progress

Opening Address

The Outgoing President, Mr Siew Choon Thye recorded a vote of thanks to the Emcee of the day, Ir. Dr. Ng Kok Chiang who is also the Assistant Honorary Secretary and expressed his gratitude to all members for taking time off to attend the 69th AGM plus the support and trust given to him to lead the Association for the past 2.5 years. He explained that the AGM was delayed due to the prolonged MCO and COVID-19 situations whereby the Registrar of Societies (ROS) had allowed to defer the AGM. He also extended his appreciation and thanks to the outgoing Council and Committee members for their great contributions and valuable time during their term of office.

Mr Siew stated that for the past two years, the COVID-19 pandemic has caused significant disruption and hardship in nearly every aspect of our lives. Efforts to contain the spread of the virus had caused a sudden stop in economic and business activities. The imposition of various phases of the unprecedented Movement Control Orders (MCOs) by the Government to contain the pandemic spread, had badly affected our members' and E&E businesses. Closures and shutdowns of businesses had impacted the loss of employment. TEEAM was kept busy trying our level best to engage and appeal to the relevant Ministries to allow our members to operate and support all the critical and essential services that have been granted to operate. Thanks to the frontliners, Government, and all of us for adhering the SOPs and vaccination programme, which made the daily cases drop from over 20,000 to approximately 4,000.

He advised the members to look forward to opportunities and pro-actively work towards re-building the economy and businesses. With the experience of the new normal life and business style, he wishes that members are ready with the new mindset and prepare to be future-ready. Our Government is trying its level best to assist businesses by providing the much-needed financial aid through various financial packages, and TEEAM hopes that members can benefit from them. He pointed out that digitalisation and transformation are now very important and necessary in expanding the businesses. Digitalisation is the use of digital technologies to change business models and provide new revenue and value-producing opportunities. It is important for companies to adopt digitalisation and transformation in their businesses in order to gain a competitive edge and keep pace with the new trend. He added that the Government is very committed in driving the industry and businesses towards automation and digitalisation.

The Smart Automation and Digitalisation Grant (SADG) is offered to enable future-proofing of businesses, improve competitiveness and capabilities. Besides reducing our reliance on low-skilled foreign workers, it creates new job opportunities in high value-added sectors. So, he hopes members will take advantage of these initiatives and facilities offered.

In his opening address, Mr Siew also highlighted on the RMK-12 (2021-2025). This Twelfth Malaysia Plan is part of the National Recovery Plan under the 6R approach, namely; Resolve, Resilient, Restart, Recovery, Revitalise and Reform. The Twelfth Plan policy framework comprises 3 Themes, 4 Policy Enablers and 14 Game Changers. It projected 4.5~5.5% GDP growth annually for 2021~2025. Digitalisation, Embracing Circular Economy, Improving TVET, etc., are a few of the game changers mentioned. Members and Business Captains are advised to look into the recent announcement of RMK12 for your business benefits and future readiness.

He stated that TEEAM will continue to engage with local NGOs and professional institutions such as MEIF, IEM, MBAM, MCMEA, MEPN to promote collaboration and enhance our standing in the industry, as well as having joint events to benefit members. He assured that TEEAM will constantly promote and strengthen the cordial relationship with the Government through TEEAM's representation in external organisations where standards, practices, industry's issues and concerns are pro-actively discussed, for the best interests and benefits of our members and all stakeholders.

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He also said that TEEAM wishes to do more next year in terms of organising technical, management and soft-skills trainings under the HRD Corp to benefit members. The list of industry/sector/activity coverage has since been expanded under the expanded PSMB Act 2001. The expansion of this coverage is aimed to increase training access for all businesses to improve labour productivity and to build a strong skilled workforce. Lastly, he wished that the E&E industry will remain resilient and members can ride through this pandemic, and thus emerge stronger.

Acceptance of Minutes, Annual Report and Accounts

The attendees approved the minutes of the past Annual General Meeting. Outgoing Honorary Secretary, Mr Lee Peng Sian, presented the Annual Report which outlined the activities of the Association for the year 2020. This was followed by the tabling of Audited Accounts by the Outgoing Honorary Treasurer, Ts. Lim Sai Seong, for the year ended 31 December 2020. Both the Annual Report and the Audited Accounts were duly approved and adopted by the General Meeting.

Election of New Office-Bearers

At the AGM, no balloting was required for the positions of President, Deputy President, Honorary Treasurer, as the positions were all uncontested. Therefore, Mr Siew Choon Thye was re-elected as the President, Ir. Chang Yew Cheong was re-elected as the Deputy President and Ts. Lim Sai Seong was re-elected as the Honorary Treasurer. Mr Chris Yow Loo Sik was elected as the Assistant Honorary Treasurer and Ir. Ts. Narendren Rengasamy was elected as the Assistant Honorary Secretary. There were twenty two nominations of candidates received for the position of Council Members, but twelve of the nominees withdrew. Therefore, the balance of ten nominees were elected as the Council Members. They are Mr Albert Tan Tin Yau, Mr How Chee Seng, Mr Rajasegaran Bungara Naidu, Mr Derrick Wong Wai Sing, Ms Liow Lih Na, Mr Chong Yoon Koon, Mr Andrew Lu Zen Kai, Datuk Chen Siang Long, Ir. Dr. Ng Kok Chiang and Dato' Tan Cheng Hooi.

Appointment of Trustees and Internal Auditors

The General Meeting appointed Mr Fu Wing Hoong, Mr Suresh Kumar Gorasia, Dato' Yeoh Kim Wah and Datuk Ir. Yong Ah Huat as Trustees. Mr Chong Chee Siong and Mr Fong Mun Loon were re-appointed as Internal Auditors for another term.

Election Committee – (from left) Mr Suresh Kumar Gorasia and Mr Ho Khai Hong

TEEAM EXCO for the year 2021-2023

In Closing

As there was no notice received from members for any other business to be conducted at the 69th AGM, the re-elected President concluded the General Meeting. In his closing remark, Mr Siew said he was deeply honoured and grateful for the trust placed in him to serve as the TEEAM President for a second term, to lead the Association. He then congratulated the newly-elected Council Members for their interest and participation. He also expressed his gratitude to the Past Presidents and former Council Members for their contributions and support of the Association, which made TEEAM to keep on shining till today.

Networking Luncheon

The day's event ended with a sumptuous buffet lunch. It was great to be able to gather physically again to network after 21 months in "hibernation" due to the COVID-19 pandemic. Stay safe everyone as we look forward to more physical events to come!

Trading Group General Meeting

Engineering Construction & Services Group General Meeting

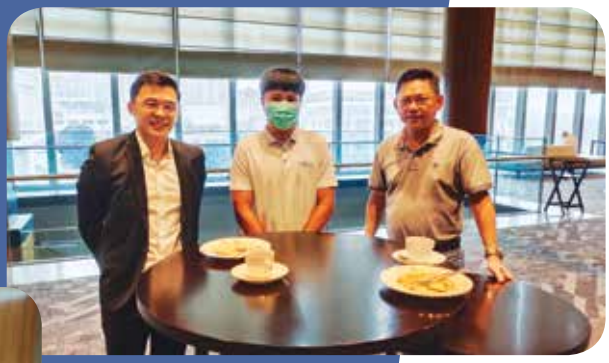
Specialised Group General Meetings

When the AGM ended, members dispersed to their respective Specialised Group's General Meeting. The three Specialised Groups elected their respective Chairmen, namely Ir. Kok Yen Kwan for the Engineering Construction & Services Group, Mr Stan Lim Hui Ming for the Trading Group and Mr Lee Peng Sian for the Manufacturing Group. The three respective groups' Chairmen are automatically the Vice Presidents of TEEAM.

Two representatives were seconded from each Specialised Group to sit in the TEEAM Council. They are Ir. Lee Kok Chong and Dato' Andy Tan Boon Hin, from the Engineering Construction & Services Group; Mr Steven Choo Chee Seong and Mr Chong Kwong Fah from the Trading Group, and Mr Choo Wei Seng and Mr Willy Wong from the Manufacturing Group.

Manufacturing Group General Meeting

Snapshots of the TEEAM AGM & Election 2021



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TEEAM EXCO for the year 2021-2023 (from left) Chris Yow Loo Sik (Assistant Honorary Treasurer), Lee Peng Sian (Vice President), Ts. Lim Sai Seong (Honorary Treasurer), Ir. Chang Yew Cheong (Deputy President), Siew Choon Thye (President), Ir. Dr. Ng Kok Chiang (Honorary Secretary), Stan Lim Hui Ming (Vice President), Ir. Kok Yen Kwan (Vice President) and Ir. Ts. Narendren Rengasamy (Assistant Honorary Secretary).

TEEAM Council for the year 2021-2023

(seated from left) Suresh Kumar Gorasia (Past President), Chris Yow Loo Sik (Assistant Honorary Treasurer), Lee Peng Sian (Vice President), Ts. Lim Sai Seong (Honorary Treasurer), Ir. Chang Yew Cheong (Deputy President), Siew Choon Thye (President), Ir. Dr. Ng Kok Chiang (Honorary Secretary), Stan Lim Hui Ming (Vice President), Ir. Kok Yen Kwan (Vice President) and Ir. Ts. Narendren Rengasamy (Assistant Honorary Secretary).

(standing second row from left) Council Members: Datuk Chen Siang Long, Dato' Andy Tan Boon Hin, How Chee Seng, Chong Yoon Koon, Steven Choo Chee Seong, Ir. Lee Kok Chong, Tony Leong Kwong How, Dato' Tan Cheng Hooi and Richard Wong Ngen Wah.

(standing third row from left) Council Members: Albert Tan Tin Yau, Derrick Wong Wai Sing, Choo Wei Seng and Rajasegaran Bungara Naidu.

Some Past Presidents and Council Members are not in the photo.
Past Presidents: Ir. Chew Shee Fuee *KMN*, Fu Wing Hoong, Dato' Ir. Lee Peng Joo and Datuk Ir. Yong Ah Huat (Immediate Past President).
Council Members: Andrew Lu Zen Kai, Datuk Ir. Azlan Robert Abdullah, Chew See Kheng, Chin Ket Hiung, Chong Kwong Fah, Ir. Darren Lee Weng Keen, David Chong Ah Nyap, Kapitan Francis Chew Joon Fah, Gan Seng Chong, Glenn Tiong Chak Lim, Hii Hua Chuon, Leslie Jong Vui Kee, Liow Lih Na, Datuk Said Anuar Said Ahmad, Steven Lim Kee Teck and Willy Wong.

TEEAM OFFICE BEARERS FOR THE YEAR 2021-2023

Council

Post	Company/Individual/State Association	Representative
President	Gruppe Lighting Solution Sdn Bhd	Siew Choon Thye
Deputy President	Abbaco Controls Sdn Bhd	Ir. Chang Yew Cheong
Immediate Past President	Datuk Ir. Yong Ah Huat	-
Past Presidents	Amalgamated Engineering & Commercial Co (KL) Sdn Bhd	Suresh Kumar Gorasia
	Dato' Ir. Lee Peng Joo	-
	EITA Resources Berhad	Fu Wing Hoong
	G H Liew Engineering (1990) Sdn Bhd	Ir. Chew Shee Fuee KMN
Vice Presidents	NK Engineers Sdn Bhd	Ir. Kok Yen Kwan
	Nanyang Electric Co. (M) Sdn Bhd	Stan Lim Hui Ming
	Furutec Electrical Sdn Bhd	Lee Peng Sian
Honorary Secretary	Syarikat Pembaiki Letrik Leong Hing	Ir. Dr. Ng Kok Chiang
Honorary Treasurer	QAV Technologies Sdn Bhd	Ts. Lim Sai Seong
Assistant Honorary Secretary	Ir. Ts. Narendren Rengasamy	-
Assistant Honorary Treasurer	Sik Supply Sdn Bhd	Chris Yow Loo Sik
Council Members	Amptech M&E Sdn Bhd	Ir. Lee Kok Chong
	Aras Kejuruteraan Sdn Bhd	Datuk Ir. Azlan Robert Abdullah
	Conway Terminals Manufacturer Sdn Bhd	Albert Tan Tin Yau
	CS Project & Engineering Services	How Chee Seng
	DPI Industries Sdn Bhd	Rajasegaran Bungara Naidu
	EPI Marketing Sdn Bhd	Derrick Wong Wai Sing
	Euro Electrical Sdn Bhd	David Chong Ah Nyap
	Hang San Electrical Supplies Sdn Bhd	Steven Choo Chee Seong
	KW Electric & Lighting Sdn Bhd	Chong Kwong Fah
	Magnum Pro Marketing Sdn Bhd	Liow Lih Na
	Malaysia CIE	Glenn Tiong Chak Lim
	Paramount PES Engineering Sdn Bhd	Dato' Andy Tan Boon Hin
	Perniagaan Kejuruteraan Chongs	Chong Yoon Koon
	Powerpoint Electrical Sdn Bhd	Andrew Lu Zen Kai
	S. A. Continental Sdn Bhd	Datuk Said Anuar Said Ahmad
	SB Elektrik & Elektronik Sdn Bhd	Datuk Chen Siang Long
	Showertec Industries Sdn Bhd	Choo Wei Seng
	Tenaga Letrik Sdn Bhd	Dato' Tan Cheng Hooi
	Wintrad Industries Sdn Bhd	Willy Wong
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	Wong Electrical & Teak Wood (Sel) Sdn Bhd	Chong Chee Siong
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TEEAM's CSR for Flood Victims

In support of those affected by the recent floods, TEEAM collaborated with the Junior Chamber International Kuala Lumpur Mandarin (JCI KLM), a non-profit organisation of young people wanting to create positive change for a better world, to provide urgent and much-needed flood relief to residents of Taman Chegar Medang and Kampung Chamang in Bentong, Pahang. TEEAM donated 100 units of KHIND Electric Kettles, 30 packs of 5kg Rice and 25 units of Family Packs comprising Milo, biscuits, instant noodles and canned food as flood aids to ease the burden of those affected residents. The flood relief packs were distributed to the affected residents on 27 January 2022. In addition, TEEAM also donated 100 units of KHIND Electric Kettles to flood victims of Kampung Bahru HICOM, Shah Alam, Selangor. The items were handed over to the Community Protem Committee on 22 Jan 2022.

On hand to deliver the flood aids were Mr Siew Choon Thye (President), Ir. Chang Yew Cheong (Deputy President), Ir. Dr. Ng Kok Chiang (Honorary Secretary), Ts. Lim Sai Seong (Honorary Treasurer & CSR Co-Chairman), Mr How Chee Seng (CSR Chairman), Ir. Lee Kok Chong (Council Member) and Mr Harpajan Singh (CSR Committee Member).

Cash donations from TEEAM members are channelled to the Tzu Chi Flood Charity Fund for disbursement to the flood victims. TEEAM sincerely hopes that this small gesture can help to ease the burden and suffering of all those affected, and also inspire others to follow suit. Well done one and all!

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ST's Product Safety Award 2021 Ceremony.

ST's Product Safety Award 2021

In conjunction with the 20th Anniversary Celebration of the Energy Commission (ST – Suruhanjaya Tenaga), the Product Safety Award 2021 (PSA 2021) was held to promote and encourage high commitment in electrical safety amongst the industry. The Award Ceremony was held on 9 November 2021 at Marriot Putrajaya to honour the industry players, namely, Manufacturers, Importers, ST's Accredited Institutions and Industry Partners.

Some 47 companies and Institutions participated in the PSA 2021, which was held to recognise, promote and encourage manufacturers and importers of electrical equipment to make a high commitment in cultivating electrical safety.

During the Awards Ceremony, a Certificate of Appreciation was also presented to TEEAM in recognition of TEEAM's commitment and close co-operation with ST in promoting electrical safety. TEEAM President, Mr Siew Choon Thye received the Certificate of Appreciation from the Honourable Datuk Seri Takiyuddin Hassan, Minister of Energy and Natural Resources (KeTSA).

Amongst the Winners were:

Platinum Awards
(Cash RM10,000, Trophy & Certificate)

Manufacturers' Category - Eco Breeze Technologies (M) Sdn Bhd

Importers' Category - Panasonic Malaysia Sdn Bhd

Accredited Institution (Special Award) - Institut Kemahiran MARA, Lumut

Gold Awards
(Cash RM7,000, Trophy & Certificate)

Manufacturers' Category - Thermo Integra Sdn Bhd

Importers' Category - Daikin Malaysia Sales & Service Sdn Bhd

Accredited Institution (Special Award) - Institut Latihan Perindustrian Jitra

Silver Awards
(Cash RM5,000, Trophy & Certificate)

Manufacturers' Category - Khind-Mistral Industries Sdn Bhd

Importers' Category - NexusLED Green Technology Sdn Bhd

Accredited Institution (*Special Award)* - Kolej Kemahiran Tinggi MARA, Pasir Mas

Heartiest congratulations from TEEAM to all the Winners!

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2021 IEC Young Professionals' Workshop in Dubai

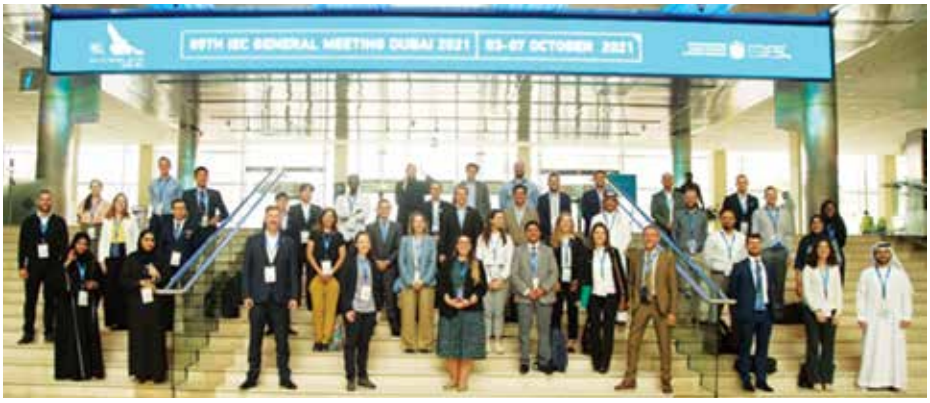
12th IEC Young Professionals' Workshop

The 12th Young Professionals' (YPs') Workshop of the International Electro-Technical Commission (IEC), successfully took place across five days, in parallel with the 85th IEC General Meeting from 3 to 7 October 2021 in Dubai, United Arab Emirates (UAE). The Workshop was hosted by the National Committee (NC) of the United Arab Emirates. The NC of each country selects YPs to represent their respective countries. The YPs had the opportunity to attend physically or remotely. An overwhelming 109 YPs from 46 National Committees gathered in person and remotely during the 5-day Workshop. This year's Malaysian IEC YPs were represented by Ms Nurul Ashikin Mohd Rodzi from TEEAM, Mr Mohamad Asnan Ahmad from SIRIM QAS, who both attended the Workshop remotely, and Mr Lim Yiren from IEM, who attended the Workshop physically in Dubai. They were selected by the Malaysian NC led by Standards Malaysia. Eligibility criteria are: aged between 20s to mid-30s, and having experience of standards development or the use of standards in the context of conformity assessment. They must be employed by a business, industry, association or Government body that uses, benefits or contributes to the work of the IEC.

The YPs' Workshop was developed as a way for the IEC and its National Committees to reach out to the younger generation of experts, managers and leaders, in order to encourage their long-term participation in standardisation and conformity assessment activities. During the YPs' Workshop, participants met peers, IEC Officers and Technical Experts from all over the world. It offered the opportunity to see the IEC in action.

The objectives of the IEC YPs' Workshop are:

- Get your voice heard in the international arena and help shape the future of global standardisation and conformity assessment,
- Enhance networking opportunities and help cultivate a long-term environment for the involvement of young people from all over the world in international standardisation,



Young Professionals (YPs) On-site Participants 2021. An overwhelming 109 YPs from 46 National Committees gathered in person and remotely during the 5-day Workshop in Dubai, UAE.

- Ensure the future of technology transfer, and
- Develop awareness of the IEC's work, and maximise benefits from being involved in international standardisation.

The IEC YPs' Workshops presented a series of interactive sessions on topics including Digital Information of IEC, Sustainable Development Goals (SDG), 5G, Circular Economy, Artificial Intelligence (AI), the Work of the IEC System Committees, and the Standards Development Process. YPs also get to observe the IEC Technical Meetings such as Conformity Assessment Board (CAB) and Standardisation Management Board (SMB) Meetings. They also had the opportunity to simulate mock-up exercises on how to conduct an IEC operation. Success stories and experience-sharing from YPs' Leaders and IEC officers were interesting. The Workshop included numerous Break-out and Interactive Sessions to provide participants with the opportunity to share their thoughts and views. Overall, this IEC YPs' Programme was very valuable and was of great benefit to all the YPs who attended the session. A big thank you to IEC and Standards Malaysia, from TEEAM!

85th IEC General Meeting

Nearly 600 participants representing 172 countries attended the 85th IEC General Meeting which took place in Dubai from 3 to 7 October 2021. Against the backdrop of a global pandemic, it was the first hybrid General Meeting that accommodated both a physical as well as a virtual participation. According to IEC President, Mr Shu Yinbiao, "The IEC brings together the unique know-how and expertise plus knowledge of thousands of experts from around the world who can participate in the development of international standards and conformity assessment. The IEC General Meeting offers an opportunity to take stock of the past year and address some of the challenges that the IEC will need to consider in the years ahead."

The theme of the IEC General Meeting this year was "Leading Industry 4.0 through Standardisation". Industry 4.0 is fuelled by new technologies that offer intelligence, automation and a new level of efficiency. Advanced technologies such as the Internet of Things (IoT), Cloud Computing, and Artificial Intelligence (AI) make it possible to collect, share and analyse huge volumes of data. IEC Standards enable users to fully secure the benefits of Industry 4.0, including defining the requirements for the safety, performance and inter-operability of technology.

The 86th IEC General Meeting is set for 31 October to 4 November 2022 in San Francisco, USA. This 2022 event is expecting to draw 1,500 to 2,000 attendees from the international IEC community. For details, log in to https://www.ansi.org/usnc-iec/programs-activities/2022-general-meeting.

YPs Workshop in progress.

Discussion during the IEC Academy Bootcamp 'Standard in a Day' in Dubai, UAE.

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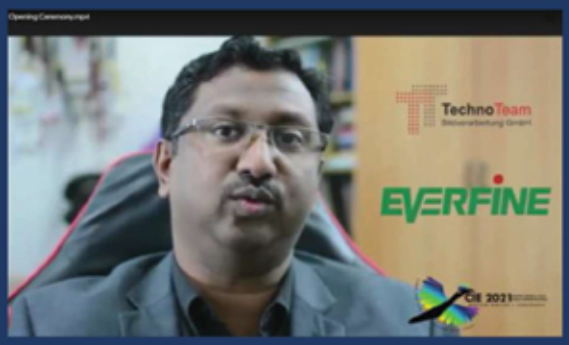
CIE 2021
Mid-term Meeting & Conference

As the COVID-19 outbreak shutters businesses and disrupts everyday life, the CIE 2021 mode was moved from the usual face-to-face Conference which was initially planned to be held physically in Penang, Malaysia, to a hybrid mode and finally (after comprehensive considerations) to a Virtual Conference via the ZOOM Video Conferencing platform with the goal of providing an engaging and new plus meaningful experience to all the participants. CIE and Malaysia CIE (MyCIE) jointly hosted their first-ever virtual event, the CIE 2021 Mid-term Meeting & Conference, from 27 to 29 September 2021. The Conference was fully supported by The Electrical and Electronics Association of Malaysia (TEEAM) and the Official Event Sponsors were Techno Team and Everfine. The CIE Community and its stakeholders came together again under one virtual roof for the CIE 2021.

An overwhelming 250 participants from 37 countries eagerly gathered to learn, share, network and be inspired. CIE 2021 recorded the highest-ever participations from Japan (32), UK (21), France (15), Germany (15), Netherlands (13) and US (12). Over the course of three days, the online programme embraced the theme of *'Light for Life – Living with Light'* and participants had plenty of opportunities to connect with others in enriching and dynamic ways.

The Conference opened with a Welcome Address by MyCIE Chairman, Ir. Ts. Narendren Rengasamy and this was followed by an Opening Address by CIE President, Dr. Peter Blattner.

Ir. Ts. Narendren Rengasamy



Dr. Peter Blattner

The Conference presented the perfect opportunity for all interested in the arts and sciences of light and lighting, ranging from science, engineering, design and industry, to come together, to discuss their interests with like-minded professionals from the global lighting community. CIE 2021 featured 4 Invited Talks, 8 Workshops, 64 Oral Presentations and 56 Poster Presentations.

The Conference was dedicated to cover a wide spectrum of the following topics:

- Light in Culture and Heritage;
- Urban Lighting Light and Ecology;
- Integrative Lighting;
- Colour and Lighting in Virtual Reality; and
- Horticultural Lighting

Invited Speaker - *Yvonne de Kort is presenting on "An Integrative Perspective On Dynamic Lighting, And How It Should Be Studied"*

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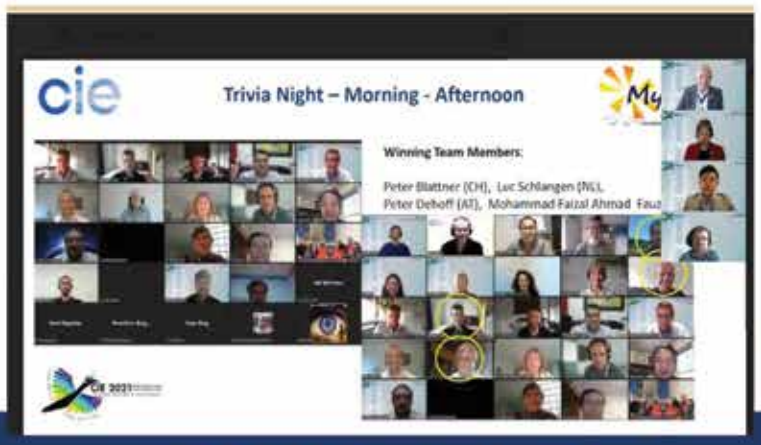
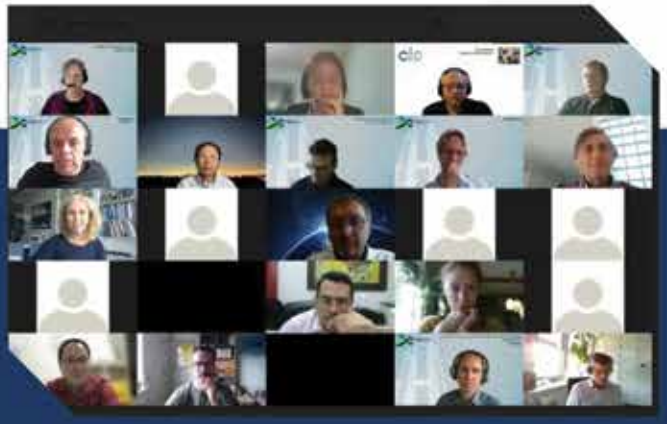


CIE 2021



SOCIAL EVENTS

Exciting virtual social events were also organised in between Sessions for a change of pace and enjoyment. The social events gave the opportunity to gather in less formal ways, from the *Trivia Night-Evening-Morning-Afternoon* (organised and hosted by Mr Tony Bergen, (Director, CIE Division 2), Mr Peter Thorns, (GB) and Dr. Vineetha Kalavally, MyCIE) to the Fledgling Professionals event (hosted by Dr. Peter Blattner, CIE President, and Dr. Jennifer Veitch, CIE Vice President Technical).

The participants had a fantastic feel of travelling around the city of Kuala Lumpur through the 360° Virtual Tour with Tour Guide Jane Rai, and also taking part in a Virtual Live Cooking of "Nasi lemak" (one of Malaysia's famous foods) and making "Teh Tarik" ('Pulling Tea') virtually demonstrated by Sara Khong, a New Malaysian Kitchen Instructor.

Another first for CIE Conferences was the awarding of prizes for the Best Oral Presentation, the Best Oral Presentation by a Student, and the Best Poster Paper. The Prize Winners at CIE 2021 were:

- **Best Oral Presentation**

Valérie Muzet, CEREMA, FR
"Is it Possible to Achieve Quality Lighting Without Considering the Photometry of the Pavements?"

- **Best Oral Presentation by a Student**

Steffen Hartmeyer, Swiss Federal Institute of Technology, CH
"Towards a Framework for Light-Dosimetry Studies: Methodological Considerations"

- **Best Poster Paper**

Jim Uttley, University of Sheffield, GB
"The Effect of Changes in Light Level on the Number of Cyclists"

CIE also duly rewarded the most active participants!

The following are the random draw of active participants in the Conference (rewards to be announced in due course):

1. Nozomu Yoshizawa
2. Thorsten Gerloff
3. Martine Knopp

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CIE 2021

In addition to concluding the Conference, an interactive conversation "How did CIE 2021 Go for You?" was held to collect delegate feedbacks about the event. The Session which was hosted by Dr. Jennifer Veitch, received a lot of positive feedback, both during this Session and in the Survey that we sent to our participants after the Conference. (" *Thank you all for this great Conference! I hope to join many more in the future! - Ashley Nixon").* All comments are gratefully appreciated.

It was then followed with a Montage Video (showing the most memorable moments) presented by the Local Organising Committee (LOC) Chairman. The video was on the wrap-up and closing of CIE 2021. The highlight of the video was the formation of delegate's pictures into the CIE 2021 logo - truly astounding! LOC Chairman, Ts. Lim Sai Seong, in his Closing Remarks, highlighted that "this Virtual Conference had prevented 3.6 million KMs of air travel – delegates from 37 countries; prevented near to one tonne of food waste from the hotel (based on Malaysian consumption pattern); used a total of only 50 pieces of paper to organise the whole event (PCO contract and cheques); and to run the whole event, we only used an additional 72kWh of electrical energy-planning, hosting and for all other IT requirements!" He also expressed his appreciation and gratitude to each and every one who helped to make this event possible.

CIE 2021 Closing Video

The Conference concluded with a Final Remark from Dr. Peter Blattner. In his remark, Dr. Peter also officially announced that at the General Assembly, which was held on the Friday before the CIE 2021 Virtual Conference, the CIE National Committees approved the appointment of Dr. Jennifer Veitch as CIE President-Elect for 2021-2023.

Congratulations to Dr. Jennifer Veitch!

MyCIE is hereby proud to announce that the 3-day CIE Virtual Conference 2021 was a resounding success! It got many praises and compliments from all the delegates, making it a truly high-achieving event, and the first-ever too! A huge thanks (Bravo!) to all who contributed to making CIE 2021 a great success; CIE, TEEAM, Official Event Sponsors, Advertisers, Presenters, Session Chairs, Delegates, Exhibitors, PCO, ISC and Organising Committee (local & international).

CIE looks forward to seeing every one physically again, hopefully, at the CIE 2023 in Slovenia (in South-Eastern Europe)!

> *"I'm really overwhelmed for what we all have done over the last three days. I have very good memories on the scientific part and social events. A great deal of effort had been put into the planning...it's a huge success! Thank you all!*
>
> – Dr. Peter Blattner, CIE President

Dr. Jennifer Veitch
CIE President-Elect
2021-2023

A screenshot of the CIE 2021 Virtual Conference Closing Ceremony

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Briefing Session by HRD Corp

A Briefing Session by the Human Resource Development Corporation (HRD Corp) was organised on 21 September 2021 for TEEAM Members to understand the Expansion of the PSMB Act 2001. The list of industry/sector/activity coverage has been expanded effective 1 March 2021. For Employers with a minimum of 10 local employees, it is mandatory to register with the HRD Corp and contribute 1% from the Employees' gross salary plus fixed allowance to the HRD Corp levy. Employers of the newly-covered industry/sector/activity who register before 1 January 2022 enjoyed levy exemption from July 2021 till December 2021. The expansion of the coverage is aimed to increase training access for all Employers to improve labour productivity and to build a strong skilled workforce. The Briefing Session was enlightening for members who attended.

Details of the PSMB Act 2001 Expansion and Coverage can be viewed at www.hrdcorp.gov.my

Coverage of PMSB Act – Mandatory Category.

Coverage of PSMB Act – Optional and Not-Covered Category.

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Ratification of the Regional Comprehensive Economic Partnership (RCEP) Agreement

MITI Media Release 21 January 2022

Pursuant to the mandate given by the Cabinet on 12 January 2022, to issue Malaysia's Instrument of Ratification (IOR) of the Regional Comprehensive Economic Partnership (RCEP) Agreement, Malaysia is now poised to be the 12th RCEP signatory to implement the Agreement after the IOR had been successfully submitted to the ASEAN Secretariat on 17 January 2022.

As provided for under Article 20.6 of the RCEP Agreement which stipulates that the Agreement will enter into force after 60 days of the IOR submission, the RCEP Agreement will now officially enter into force for Malaysia on 18 March 2022.

With this latest submission of IOR to the ASEAN Secretariat as the Depository of RCEP, Malaysia will now officially join the eleven other signatory countries, namely, Singapore, China, Japan, Brunei Darussalam, Cambodia, Lao PDR, Thailand, Vietnam, Australia, New Zealand and South Korea that have completed the ratification process.

Currently, RCEP is the largest Free Trade Agreement (FTA) in the world, covering 15 countries with 2.2 billion or nearly a third (29.5%) of the world's population, representing US$25.8 trillion or 29.4% of the world's GDP, based on World Bank's 2019 data. It bears stressing that RCEP is a testament to efforts to strengthen not only the multi-lateral trading system but advancing regional economic integration, and upholding the development agenda of the World Trade Organisation (WTO).

Within ASEAN, Malaysia is expected to be the largest beneficiary of the RCEP agreement in terms of gains in exports, with a projected US$200 million increase. According to a report by UNCTAD published on 15 December 2021, these gains will result from tariff elimination and reduction for merchandise goods, including the facilitation of export and import of goods amongst the RCEP countries. Furthermore, service providers including e-commerce, will be able to enjoy greater market access in terms of cross-border supply and establishing commercial presence in the RCEP markets.

The COVID-19 pandemic has underscored the paramount importance of international trade and co-operation as well as the inter-linkages of regional supply chains. In this regard, RCEP would be a key enabler for Malaysia in re-vitalising the domestic and international business activities, post-pandemic. Business communities, from large to small scale entrepreneurs, are encouraged to take advantage of the vast investment opportunities and greater participation in regional and global value chains presented by this Mega Trade Agreement. As a trading nation, Malaysia will continue to be an open economy, with business-friendly and pragmatic policies that foster a conducive investment climate in the country.

MITI MALAYSIA
MINISTRY OF INTERNATIONAL TRADE AND INDUSTRY

About MITI

The Ministry of International Trade and Industry (MITI) is the key driver in making Malaysia the preferred destination for quality investments and enhancing the nation's rising status as a globally competitive trading nation. Its objectives and roles are oriented towards ensuring Malaysia's rapid economic development and help achieve the country's stated goal of becoming a developed nation.

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Innovation Talk on Shaping Buildings of the Future

Schneider's Exclusive Innovation Talk: Panel Discussion on "Shaping Buildings of the Future" was successfully held on the morning of 27 October 2021 via the Webex platform. Key industries are evolving to recover and sustain from the impact of the global health crisis, and industry leaders are pivoting to new strategies that will push transformation into over-drive. In line with Malaysia's Industrial Revolution 4.0 (IR 4.0) agenda, digitisation enables the buildings industry to remain efficient, and at the same time productive throughout the pandemic.

The event was supported by TEEAM, and TEEAM Vice President, Ir. Kok Yen Kwan was amongst the esteemed Panellists. Others were Ir. Yau Chau Fong, Vice President, The Institution of Engineers Malaysia (IEM); Mr Soo Pow Leong, Digital Energy Vice President, East Asia Japan, Schneider Electric; and Mr Denver Ng, Business Vice President, Digital Energy, Malaysia, Singapore & Brunei, Schneider Electric. It was an informative sharing session for all who attended.

Innovation Talk on Shaping Buildings of the Future via Webex.

Heartiest Congratulations

To Our Trustee

Dato' Yeoh Kim Wah

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By Tuan Yang Terutama

Tun Dato' Seri Utama Ahmad Fuzi Bin Haji Abdul Razak

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Important Electrical Safety Tips That Everyone Should Know

Derrick Wong Wai Sing

Electrocution is possible because of the voltage of electricity, and the amount of current accessible in normal companies and residences. A person might be electrocuted by touching the "hot," "energised," or "live" area of the socket when replacing a light bulb without disconnecting the lamp beforehand.

There is the potential for injury in any electrical system. Both "static" and "dynamic" electricity do exist. The electricity that moves electrons in a steady stream across a conductor is referred to as dynamic electricity (this is also known as electric current). It is a conductor's job to enable electricity to flow through it. The human body is also an important component. When a person becomes a component of an electrical circuit, they are at risk of injury, or more seriously it may cause death. Electricity will want to flow through our bodies if there is no other simple way since our bodies are more electrically conductive than the ground we stand on.

Electrical devices have become an integral part of our daily lives. They help us to work more economically and efficiently, and provide us with entertainment. But electrical devices always carry the risk of electric shock, whether due to poor design, inadequate maintenance or improper use. Every year, hundreds of fatalities and thousands of injuries worldwide are caused by electric shocks due to the usage of electrical devices.

Therefore, below are some critical, life-saving tips that everyone should know in order to reduce the risk of electric shock.

1) Regularly Check Your Residual Current Circuit Breakers (RCCB)

A Residual Current Circuit Breaker (RCCB) plays an important role as an electrical protection - it will automatically cut off the power supply whenever there are any current leakages occurring. Therefore, RCCBs need to be tested regularly to ensure that they are workable. If you find that your RCCB does not function, please contact an electrician to investigate and identify the fault immediately.

2) Use Quality Electrical Products That are Certified

Electrical products that are certified have gone through safety tests and are in compliance with the safety standard regulated by the country. Unregulated electrical products may cause arc sparks, short-circuit, current overload, and resistance heating which may endanger the user and lead to fire and electrocution. Therefore, using a quality and regulated electrical product can ensure the users' safety and well-being.

3) Always Cut the Power When You Want To Do Electrical Work

In the event of electrical problems, turn off the power at the breaker box (DB/MCB Box). Test to see if an outlet, fixture, or switch has been turned off before you begin working on changing switches, lamp bulbs or any other electrical work. Once you have done all of that, it's time to get out the tester. Turning off the power, and running a circuit test will only take a few seconds.

Mr Derrick Wong Wai Sing

4) Never Use Electrical Devices Near to Water

Water conducts electricity. It can lead to electric shock or short circuits. It is best to avoid any electrical devices near the water. Do not use if the electrical devices are wet. Ensure that they are fully dry before using them.

5) Do Not Overload Your Socket

Does your socket outlet include more than two plugs? If you have many devices connected to a single socket outlet, this is not a good solution. Do not overburden the one socket outlet by dispersing small appliances and electronic gadgets among many ones. Add extra socket outlets to the area, by hiring a qualified electrician.

This article is written by Mr Derrick Wong Wai Sing, Chairman of TEEAM Media, Publication & Emerging Technology Sub-Committee (2021-2023). He can be reached at derrickwong@epimkt.com.my

ENGINEER & MARVEX 2022

ENGINEER & MARVEX 2022 Signing Ceremony.

After the prolonged lock-down due to the COVID-19 pandemic, businesses are re-connecting and a Signing Ceremony of ENGINEER & MARVEX was held on 30 November 2021 at the Kuala Lumpur Convention Centre. ENGINEER 2022 is the 1st Malaysia Engineering Exhibition & Conference organised by IEM & CIS, and fully supported by TEEAM. This exciting and much anticipated Exhibition and Conference will take place from 16 - 19 March 2022 at the Kuala Lumpur Convention Centre. The MARVEX 2022, the 1st Air-Conditioning, Refrigeration & Ventilation Expo organised by MACRA and CIS, will be held concurrently.

TEEAM President, Mr Siew Choon Thye represented TEEAM at the Signing Ceremony and Vice President, Ir. Kok Yen Kwan was also present. An event under IEM Convention, ENGINEER 2022 will be held across four days focusing on the following five key divisions – Civil, Electrical, Electronics, Chemical and Mechanical Engineering. See you soon at ENGINEER & MARVEX 2022!

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IEM-ST-TEEAM National Electrical Safety Virtual Conference 2021

The National Electrical Safety Virtual Conference was successfully held on 25 November 2021 via the GoToWebinar Platform. The Conference was jointly organised by the Institution of Engineers, Malaysia (IEM), Suruhanjaya Tenaga (ST, the Energy Commission) and The Electrical and Electronics Association of Malaysia (TEEAM).

Nearly 105 participants attended the Virtual Conference, including engineering professionals, Government officials and policy-makers, standards organisations, manufacturers, suppliers and solutions providers, owners and operators. The Conference with the theme: "Electrical Safety for Domestic and Electrical Safety for Industrial and Commercial", provided an effective platform to drive cross-border flows and mobility of engineering technology and services, to share and exchange knowledge and experiences, as well as practical challenges encountered, and solutions adopted in the fields of electrical safety.

The Conference began with a Welcome Speech by IEM President, Ir. Ong Ching Loon, followed by a Keynote Address by the ST CEO, Mr Abdul Razib Dawood. The day continued with plenary sessions.

The Speakers were:

1. Ir. Md Zakuan Ibrahim, ST
2. Mr Dahari Mat Siran, TEEAM
3. Ir. Ts. Mohamad Nor Othman, ST
4. Ir. Lee Chong Kiow, IEM
5. Ir. Siti Nor Hassan, JKR
6. Ir. Ts. Dr. Majahar Abd Rahman, DOSH
7. Ir. Lim Kim Ten, IEM
8. Ir. Azhar Abu Bakar, TNB
9. Ir. Anita Marzuki, SIRIM QAS

From TEEAM, Mr Dahari Mat Siran, presented on "Revisiting Principles & Applications of RCD".

All Sessions were very informative. The highlight of the Conference was the Forum Discussion on "Electrical Safety" which connected the participants with industry experts in an interactive and engaging environment. The Forum was moderated by Mr Alex Looi Tink Huey, IEM-EETD Committee Member and Chairman of the Activities Organising Committee. The official programme ended with the Closing Remarks from Ir. Lee Cheng Pay, IEM-EETD Chairman.

Moderator - Mr Alex Looi Tink Huey.

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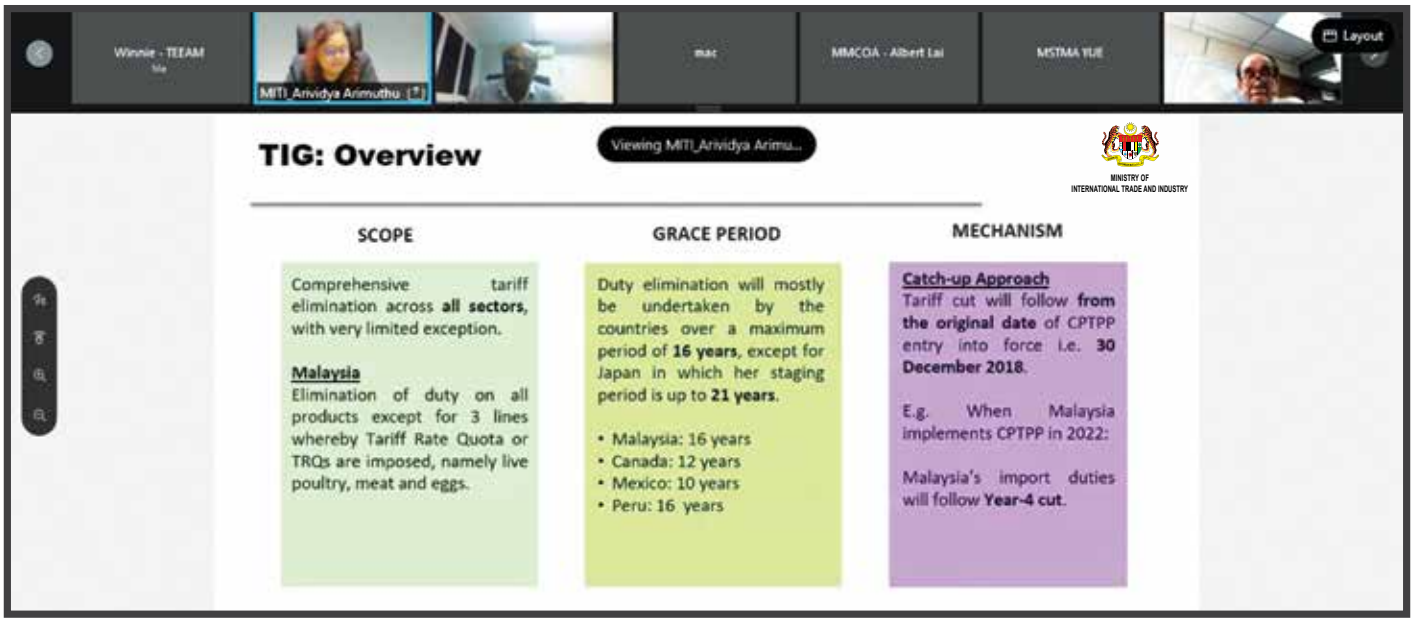
MITI-CPTPP Consultation Session with Sectoral Industry Groups



The Ministry of International Trade and Industry (MITI) hosted a Virtual Consultation Session on The Comprehensive & Progressive Agreement for Trans-Pacific Partnership (CPTPP) with Sectoral Industry Groups on 5 October 2021, which was chaired by Ms Arividya Arimuthu, CPTPP Chief Negotiator/Senior Director for the Strategic Negotiations Division, MITI.

MITI is pleased to note that in principle, there is no objection for Malaysia to ratify the CPTPP, from the Machinery & Equipment and E&E Sectors, which were represented by Machinery and Engineering Industries Federation (MEIF), Machinery and Equipment Manufacturers Association (MEMA), Malaysian Special Tooling and Machining Association (MSTMA), Malaysia Automation Technology Association (MATA), Malaysia Aerospace Industry Association (MAIA), Small and Medium Enterprises Association (SAMENTA), Mobile Crane Owners Association (MMCOA1987), The Electrical and Electronics Association of Malaysia (TEEAM), and SME Association of Malaysia.

However, the Sectoral Industry Groups highlighted that there are some concerns that the Government needs to address in order to improve the preparedness of the Small and Medium-Sized Enterprises (SMEs) to ensure that they can reap the full benefits of the CPTPP once it is implemented. In

this regard, MITI recognises the urgent concerns and the Ministry, together with the relevant Government agencies, including the Ministry of Entrepreneur Development and Cooperatives (MEDAC), SME Corp and MATRADE will work closely with the private sector to equip and enable SMEs to truly benefit from the CPTPP.

Russia-Malaysia Expert Consultation Session

The Russia-Malaysia Industry & Trade Working Group organised an Expert Virtual Consultation Session on Electronics, Communications, Automated Control System, Information Security and the LED Lighting Industry on 6 October 2021. The session was co-chaired by Mr Muhammad Zulhilmi Ahmad, Director of Non-Resourced Based Policy, of the Industrial Development Division of the Ministry of International Trade & Industry, Malaysia (MITI); and Mr Nikita Ponomarenko, Trade Representative of the Russian Federation in Malaysia. The Virtual Session was well attended by representatives from various Ministries, Government agencies, Industry bodies, Trade Offices and entrepreneurs from both countries. TEEAM was represented by Mr Lee Peng Sian (Honorary Secretary) and Mr Lim Sai Seong (Honorary Treasurer).

The key areas of potential Russia-Malaysia co-operation, amongst others, are Machinery & Equipment, ICT, E&E and Oil & Gas. Both countries look forward to business and technical collaborations, and exporting opportunities for the entrepreneurs of Russia and Malaysia.

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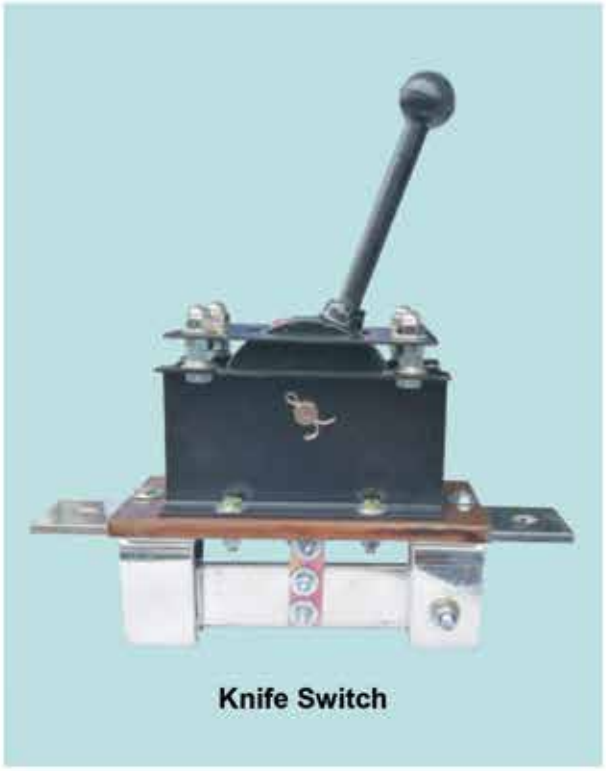

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ENGINEER Power Talk

The ENGINEER Power Talk on "Electrical Safety & Irradiation Technology for an Improved Built Environment" was successfully organised on 15 September 2021. The Virtual Talk is an industry initiative by IEM and ENGINEER Malaysia under IEM's Nation Building Programme, co-organised by CIS, and fully supported by TEEAM.

The Virtual Power Talk enabled participants to discover both the present and future concerns regarding both electrical safety and available irradiation technologies that will drive improvements in the built environment. The Panellists shared their valuable insights on:

- The understanding of haphazard and non-compliance practices which lead to unsafe electrical installations,
- How to implement an effective method for air disinfection and how UVGI (Ultraviolet Germicidal Irradiation) technology is being implemented through UV-C (Ultraviolet-C) lighting or in ventilation systems in the upper rooms, and
- Are the electrical risks in buildings and properties being neglected? Is this a Reality or Myth?

Distinguished Panellists:

- Ir. Kok Yen Kwan
  Vice President & Chair of Engineering Construction & Services Group, TEEAM

- Mr Gaurav Yadav
  Senior Product Manager – Professional Channel,
  Signify Malaysia Sdn Bhd

Esteemed Moderator:

- Datuk Ir. Azlan Robert Abdullah
  Safety & Compliance Chairman, TEEAM

A big thank you to our above-mentioned Panellists and Moderator for taking time to be part of this fruitful Power Talk session.

Networking Luncheon with Kazakhstan Ambassador

On 29 October 2021, TEEAM had a Networking Luncheon with Kazakhstan Ambassador, H.E. Bulat Sugurbayev and Counsellor, Mr Samat Zhanabay of the Embassy of the Republic of Kazakhstan in Malaysia. TEEAM was represented by Mr Siew Choon Thye (President), Ir. Chang Yew Cheong (Deputy President) and Mr Lee Peng Sian (Honorary Secretary). Both parties had very fruitful discussion on promoting business opportunities between Malaysia and Kazakhstan.

(from left) Mr Lee Peng Sian (TEEAM Honorary Secretary), Ir. Chang Yew Cheong (TEEAM Deputy President), H.E. Bulat Sugurbayev (Kazakhstan Ambassador), Mr Siew Choon Thye (TEEAM President) and Mr Samat Zhanabay (Counsellor, Embassy of the Republic of Kazakhstan in Malaysia).

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SME CEO Forum 2021

On 8 December 2021, TEEAM extended support to the SME CEO Forum 2021 entitled "Redefine, Reinvent, Recover - What's next for SMEs?" Organised by Business Media International at Pullman Bangsar Kuala Lumpur, the CEO Forum was officiated by the Honourable Tan Sri Noh Omar, Minister of Entrepreneur Development and Cooperatives (MEDAC), Malaysia. Mr Rizal Nainy, the Chief Executive Officer of SME Corp was also present at the Forum. Representing TEEAM was its President, Mr Siew Choon Thye, Honorary Treasurer, Ts. Lim Sai Seong and Past President, Mr Suresh Kumar Gorasia.

Focusing on three key pillars: 'Financing', 'People & Talent', and 'Digitalisation', the Forum featured an expert panel line-up who focused on topics to promote growth and encourage innovation amongst SMEs. The day's comprehensive programme was tailored to aid SMEs to navigate and re-launch themselves in the current evolving market condition.

Datuk William Ng, Chairman of the Small and Medium Enterprises Association of Malaysia (SAMENTA), highlighted in his Welcome Address that as Malaysia's oldest association for SMEs, SAMENTA continues to champion the development of SMEs in Malaysia and address the pain points of SMEs through a quadri-partite pillar of policy consultation, market access, business amplification, and capacity-building.

"This pandemic has once again emphasised both the importance of SMEs in supporting the economy and in driving employment. Yet, the same pandemic has also shown us just how fragile our SME eco-system is. In 2020 alone, our SMEs suffered a loss of RM40.7 billion," he said.

"When times are good, SMEs are generally expected to support the growth of our economy and play a docile role in following the directions of the policy-makers. But in difficult times, SMEs are often the last to receive support. This is why associations such as SAMENTA are important, and needed as a voice, for our fragmented SME sector," he further added.

According to him, SAMENTA which has some 3,000 members, was the first association to resist the call for a full lockdown, dubbed MCO 3.0 in June, preferring instead stricter self-regulation via a mass test and isolate approach. SAMENTA was also the first association to call for an end to the segregation of essential and non-essential sectors in the re-opening of the economy. Subsequently, SAMENTA was also amongst those who pushed for an early end of the various lockdowns so that Malaysians can resume their livelihoods just as the country continues to work hard to save lives.

Commenting on the current state of the SME sector, Datuk William Ng said: "SMEs are at a critical juncture right now. Our productivity and competitiveness have suffered due to the pandemic and also rapid changes in technology and market. As such, moving forward, our efforts will be to get our SMEs to adopt digitalisation rapidly, move further into automation, and understand the new standards for ESG (Environmental, Social and Governance)".

Meanwhile, MEDAC Minister, the Honourable Tan Sri Noh Omar, said in his speech that MEDAC and all agencies under its supervision are committed and determined to revive the local SMEs to ensure the well-being of the people. The Ministry will ensure that the affected SMEs will receive Government assistance as soon as possible. MEDAC Officers have been instructed to

ensure all agencies expedite the application assessment, and address each complaint from the SMEs.

"Amongst the initiatives carried out by MEDAC are, putting aside the credit reference made by CTOS and CCRIS in any Government financial assistance package, for the next six months," Tan Sri Noh Omar said.

MEDAC's impact study on the entrepreneurship scene in Malaysia in 2021 has found that 37,415 businesses ceased operations, of which 70 per cent or 26,007 were SMEs. Therefore, the Minister urged the SMEs to take advantage of the various benefits and opportunities provided by the Government through Budget 2022 which has allocated a total of RM14.2 billion for the SMEs.

Overall, it was a very fruitful Forum for networking and renewed ties amongst SMEs after the prolonged COVID-19 lockdown. SAMENTA celebrated its 35th Anniversary during the Forum. Heartiest congratulations to SAMENTA from all of us at TEEAM!

TEEAM's Officials – (from left) Ts. Lim Sai Seong (Honorary Treasurer), Mr Siew Choon Thye (President) and Mr Suresh Kumar Gorasia (Past President).

TEEAM's Officials with Datin Lorela Chia (SAMENTA Central Deputy Chairman).

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ASEAN Super 8

The 2021 edition of ASEAN Super 8, Southeast Asia's leading Trade Show for the Built Environment featured Virtual Exhibitions, alongside Conferences, Webinar, Business Matching, Innovation Symposium and Networking activities. Organised by Informa Markets, the Trade Show was held in conjunction with the International Construction Week (ICW), hosted by the Construction Industry Development Board (CIDB) Malaysia. TEEAM was honoured to be invited as one of the Supporting Organisations.

The ASEAN Super 8 Live Virtual Connect Exhibitions were successfully held from 1 – 3 November 2021 and 9 – 11 November 2021 on the Online Platform from 10am – 6pm (GMT+8, Malaysia). ASEAN Super 8 featured niche expositions, namely, the ASEAN M&E, ASEAN Tenaga Energy, ASEAN Lift, ASEAN Solar, ASEAN Light, REVAC Expo, Future-Build SEA and IFSEC Southeast Asia. ASEAN Super 8 offered unparalleled value to its exhibitors, sponsors and visitors. From top industry players to newcomers, everyone had the opportunity to showcase their innovations, source for suppliers, make valuable contacts and stay updated with the latest industry trends, in line with the Exhibitions' tagline – One Event, Eight Unified Segments in One Platform. The Virtual 24/7 Market Place for Products Sourcing was held from 1 – 30 November 2021 to give ample exposure to the esteemed buyers and sellers.

ASEAN Super 8 brought together industry professionals and representatives, including Government Officials, Regulators, manufacturers, contractors, developers, industrial users, consultants and industry experts. It was a fruitful event for all who attended.

Webinar on Shortcut to Business Profitability via Field Service Management

On 17 November 2021, the Machinery & Equipment Productivity Nexus (MEPN) hosted a Webinar on "Shortcut to Business Profitability via Field Service Management" on the Zoom Platform. This interesting Webinar focused on the following topics:

- Challenges with customer's satisfaction & consistent service excellence,
- Ways to keep up with resources demand to manage people, assets and expectations, especially post-COVID, and
- Learning from others who have already travelled the Field Service Management road.

The Webinar was moderated by Mr Yoong Kee Sin, Subject Matter Expert of MEPN. Distinguished Speaker, Mr Lee Peng Sian, the Honorary Secretary of TEEAM shared the insights into EITA Group's journey in Field Service Management. Lessons learnt were invaluable to participants who plan to improve customers' satisfaction and service excellence.

Moderator and Speakers.

Meanwhile, Director of Sales Connection, Mr John Lee highlighted the details of Sales Connection, a digital solution in managing field service. The solution provides good team collaboration and mobile field operation solutions to enhance performance and business profitability. It was a good sharing Webinar for all who attended. It is hoped that this digital solution in Field Service Management will bring business profitability to TEEAM members.

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Challenges and Opportunities in the Electrical Industry – Part 39

Ir Chew Shee Fuee KMN, TEEAM Past President

A) ST Circular on Protection Against Lightning (3 January 2020)

We are aware of the afore-mentioned Circular when it was announced by ST in 2020 but we must realise that existing buildings will be affected as the grace period is now over. SPD (Surge Protective Device) probably is the item that we are all mainly interested in. In general, I do not see any possibility of not implementing it. Therefore, I expect that the recommendations from Supervising Engineers will be to deploy them on all Low Voltage (LV) Main Switchboards, at the very least. At sub-board and DB (Distribution Board) levels, it probably will be more relaxed depending on the vulnerability of apparatus or equipment used.

SPD manufacturers will provide most of the information required in selection of the relevant types. The back-up protection of SPDs may be a little bit more complicated though.

In my personal opinion, Residual Current Devices (RCDs) and SPDs should be generously deployed and they will serve their intended purposes. The investment is well spent for the overall protection and particular avoidance of outage and damages to equipment connected.

B) RCD Selection for EV Chargers

Electric Vehicle (EV) charging equipment, in the event of certain faults, rely on automatic supply disconnection to protect the user and other members of the public. To reduce the chances of receiving a fatal shock, RCDs must operate before the residual current reaches a dangerous level, and within the defined disconnection time. Understanding the basic operating principles of RCDs helps with regards to the specification of the correct Type of RCD, based on the characteristics of the EV charger connected to the charge point.

An RDC-DD is a 'Residual Direct Current – Disconnecting Device'. This is often built within the car charger equipment to monitor and if necessary disconnect should any Direct Current (DC) problems appear on the Alternating Current (AC) side of the installation, which could affect the operation of RCDs.

In this case, a Type A RCD can be used. This is because, Type A can still work correctly up to a level of 6mA DC. Over 6mA however, this Type A device could be affected and possibly blinded, and thus potentially stop working. This is the preferred option as Type As are now very common and lowest in price. Therefore, most car charger manufacturers have a 6mA RDC-DD built-in.

If the car charger does not have any RDC-DD, then you will need a Type B RCD supplying the car charger. This is because Type B can detect this DC, still work, and disconnect if required.

C) RCD Selection for Different Equipment Types

In new installations, it is common practice to install a consumer unit which was supplied with RCDs already connected. These are likely to be Type AC which could be ineffective due to the residual DC fault current created by the different types of electrical equipment. Many installers, either because of habit or a misunderstanding of the limitations for an AC Type RCD, often assume that they are suitable for all installations, but this is highly incorrect.

Some European countries have already banned the general use of Type AC RCDs and some manufacturers have also already stopped making them, supplying Type A in place of Type AC.

In existing electrical installations, Type AC RCDs have been installed for many years and are effective for equipment which is resistive, capacitive or inductive, and fitted with minimal electronic components. This used to be the case for most installations when lighting was of the tungsten type, and the electrical appliances or equipment did not contain any electronic equipment.

Modern appliances are becoming increasingly more sophisticated, featuring micro-processor technology with an emphasis on energy reduction. This has led manufacturers to incorporate energy-saving measures, such as speed control, which by the nature of its operation has an element of DC residual fault current. We need to bear in mind that when relays are tested or calibrated, we are also assessing the total protection scheme. The exercise will normally involve the tripping of breakers as a complete verification.

Type A RCDs are used for alternating sinusoidal residual current and for residual pulsating direct current up to 6mA.

These are installed to protect circuits where equipment with electronic components are installed, such as:

- inverters,
- Class 1 IT equipment,
- power supplies for Class 2 equipment,
- lighting equipment, including dimmers and LED drivers,
- induction hobs, and
- electric vehicle charging equipment with smooth residual DC current less than 6mA.

Type F RCDs are used for frequency-controlled appliances and equipment. Examples of equipment include:

- air-conditioning controllers with variable speed drives,
- some Class 1 power tools,
- washing machines,
- dish-washers, and
- tumble dryers which contain synchronous motors.

As far as mechanical relays are concerned, we believe that there is no proposal to change the current interval of 2 years. This is a long-established practice and has proven to be satisfactory.

Type B RCDs are used for single-phase and three-phase equipment. Examples of equipment include:

- inverters,
- Uninterruptible Power Supplies (UPS),
- photovoltaic systems,
- lifts,
- escalators,
- welding equipment,
- industrial machines, and
- EV charging equipment with smooth residual DC current which is greater than 6mA.

Type B devices are also suitable for Type AC, Type A and Type F applications.

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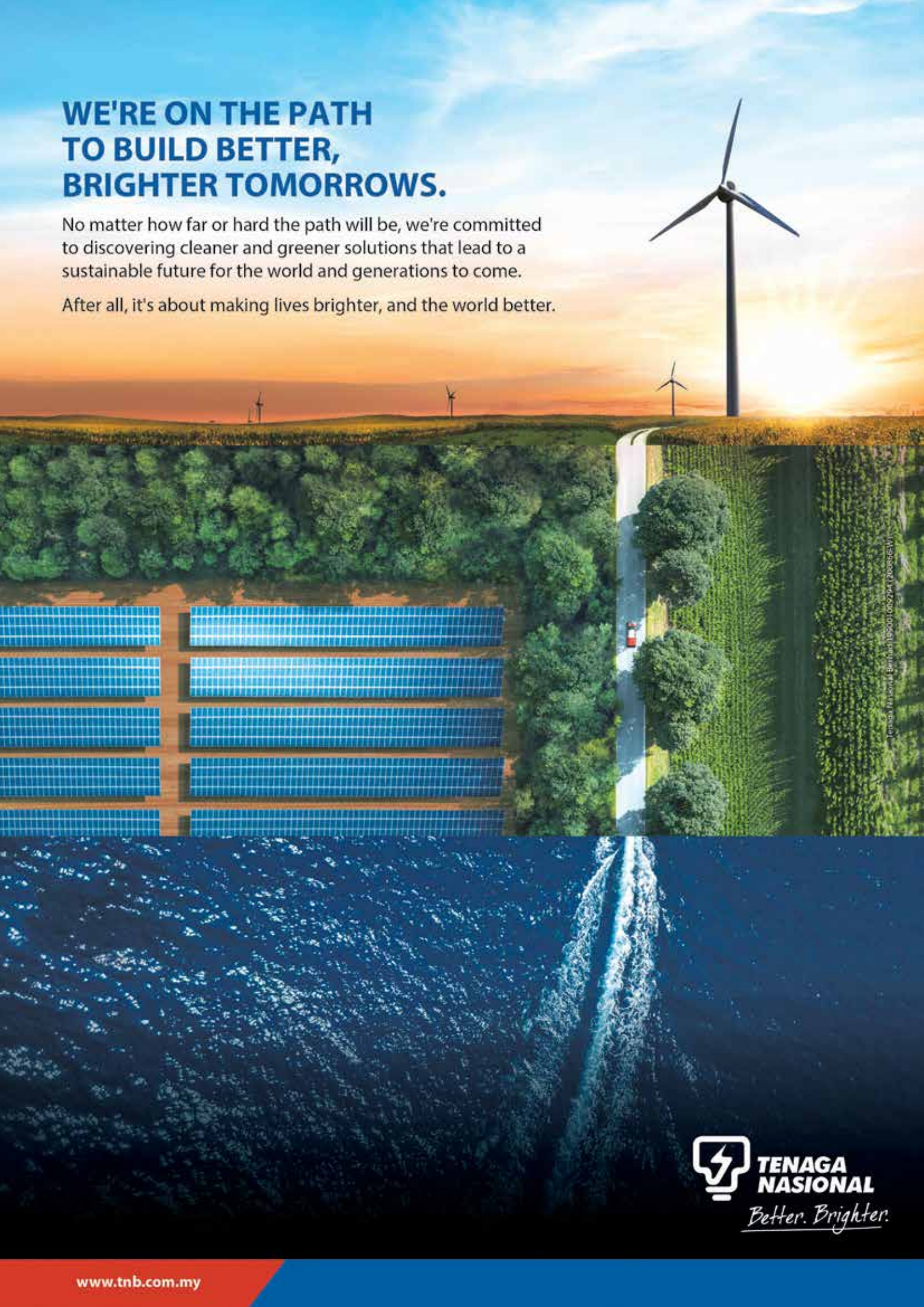
Ir Chew was President of The Electrical and Electronics Association of Malaysia (TEEAM) for 2001-2005 and 2013-2017. He was the President of the ASEAN Federation of Electrical Engineering Contractors (AFEEC) for 2016-2018. He is the Immendiate Past Chairman of The Institution of Engineering & Technology (IET) Malaysia Local Network. Ir Chew is the Managing Director of G H Liew Engineering (1990) Sdn Bhd and Chris Chew Electrical Consultant. He graduated from the University of Strathclyde, Glasgow with a B Sc (Hons) in Electrical & Electronics Engineering. He is a Professional Engineer and is also licensed by the Energy Commission as a Competent Engineer (without voltage limits) and a Service Engineer to carry out electrical testing up to a voltage of 500 kV.

Ir Chew has more than 30 years of industry experience in electrical control and relay protection. He is also specialised in electrical site tests on power equipment, electrical fault investigation, service and maintenance of electrical switchgears and relays. His work also includes electrical supervision of sub-stations and electrical audit. He also presents lectures on electrical apparatus and the protection system. He was Vice-Chairman of MyENC (Malaysian Electro-Technical National Committee) and is a Member of Technical Committees (TCs) and Working Groups (WGs) in Standards Development. He can be reached at E-mail: sfchew@ghliew1990.com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Malaysian Economic Statistics Review Volume 1/2022

The Department of Statistics, Malaysia (DOSM) had recently released the Malaysian Economic Statistics Review (MESR) Volume 1/2022 on 28 January 2022. This edition focuses on the economic performance based on the recent statistics released in November 2021 and some forthcoming statistics for December 2021. The MESR will assist users to have the latest information on the economic performance in much greater detail.

Key Reviews

- The Malaysian economy is projected to grow 5.8 per cent in 2022 based on the Global Economic Prospect Report released by the World Bank in January 2022. This promising performance is likely to be driven by the upturn in domestic demand and continuous expansion in the export-oriented industry.

- The production of natural rubber on an annual basis declined by 25.8 per cent to 31,577 tonnes (November 2020: 42,554 tonnes) in November 2021 as compared to the previous year. Similarly, the monthly comparison also indicated a decrease of 26.8 per cent in natural rubber production as against 43,127 tonnes in October 2021. In December 2021, the year-on-year production of fresh fruit bunches showed an increase of 6.5 per cent to a record 7,225,727 tonnes (6,784,673 tonnes). However, when compared with the previous month, the production of fresh fruit bunches went down by 11.0 per cent as compared to 8,114,872 tonnes in November 2021.

- In November 2021, the Industrial Production Index (IPI) increased 9.4 per cent as compared to the same month of the previous year. The expansion of the IPI was attributed to the increment of 11.3 per cent in the Manufacturing Index, 5.1 per cent in the Electricity Index and 3.7 per cent in the Mining Index.

- Simultaneously, Malaysia's Manufacturing sales in November 2021 stood at RM142.4 billion, and posted strong growth of 18.8 per cent (October 2021: 15.3%) as compared to the same month in 2020. The growth in sales value was driven by Petroleum, Chemical, Rubber & Plastic Products (29.0%), Food, Beverages & Tobacco Products (20.7%) and Electrical & Electronics Products (17.8%).

- Given the Wholesale & Retail Trade performance, the sales increased 7.0 per cent year-on-year in November 2021 to register the highest sales of RM118.1 billion. The increase in Wholesale & Retail Trade was highly contributed by the increase of 6.8 per cent or RM3.6 billion in the Wholesale Trade sub-sector to record RM56.3 billion in November 2021. Sales of Retail Trade also expanded 6.7 per cent or RM3.0 billion to RM47.8 billion. Within the same period, the Motor Vehicles Trade went up 8.6 per cent or RM1.1 billion to RM13.9 billion.

- As for the Consumer Price Index (CPI), the inflation showed an increase of 3.3 per cent and surpassed the long-term average headline inflation of 1.6 per cent. The overall incline was driven by the increases in indices of five main groups, namely, Transport (12.7%); Housing, Water, Electricity, Gas & Other Fuels (3.4%); Food & Non-Alcoholic Beverages (2.7%); Furnishings, Household Equipment & Routine Household Maintenance (2.6%) and Restaurants & Hotel (0.9%).

- At the same time, the Producer Price Index (PPI) registered a 12.6 per cent increase in November 2021 as compared to a 3.0 per cent drop recorded in the same month of the preceding year. In terms of annual comparison, the increase in the PPI local production in November 2021 was attributed to the Mining Index which surged 71.2 per cent as compared to a 45.8 per cent drop recorded in November 2020. This was followed by the Agriculture, Forestry & Fishing Index which increased 19.1 per cent, the Manufacturing Index rose 8.4 per cent, and the Water Supply Index increased marginally by 0.2 per cent. However, the index of Electricity & Gas Supply declined 0.3 per cent.

- Malaysia's export performance remained robust in December 2021 with the export value above RM100 billion, the fourth consecutive months since September 2021, corresponding to the favourable external and domestic economic activities. Exports in December 2021 once again broke its record, reaching RM123.8 billion and expanded by 29.2 per cent, year-on-year (y-o-y). Simultaneously, imports also registered a strong growth of 23.6 per cent to RM92.9 billion as compared with December 2020. Adding to the remarkable performance of exports and imports, total trade soared by 26.8 per cent to RM216.7 billion as compared to the same month in 2020, bringing to the highest ever total trade of RM2.2 trillion for the year 2021.

- By looking at the employment situation in November 2021, the number of employed persons surged 2.7 per cent or by 414.2 thousand employed persons to record 15.61 million employed persons (November 2020: 15.20 million persons). The employment-to-population ratio which indicates the ability of an economy to provide jobs, ascended by 0.9 percentage points to 66.0 per cent (November 2020: 65.1%). Meanwhile, the unemployment rate fell 0.5 percentage points to 4.3 per cent from 4.8 per cent recorded in November 2020.

- The performance of the Leading Index (LI) remained optimistic by registering 111.3 points in November 2021 (November 2020: 109.4 points) as the economy gradually revived from the adverse effects of the COVID-19 pandemic. By keeping the index level surpassing 100.0 points and moving upwards, the LI is signalling that Malaysia will be staging a better economic recovery in the upcoming months.

Overview of the World Economy

During this global pandemic, 2021 had been a rough year for all the countries to battle against the unprecedented economic meltdown and Malaysia is no exception in managing the two major burdens of saving life and stimulating economic recovery. The highly contagious Omicron variant poses threats to the countries and hampers the recovery of the economy. The Global Economic Prospect Report released by the World Bank in January 2022 highlighted that the Malaysian economy is projected to grow 5.8 per cent in 2022. This promising positive performance is likely to be driven by the upturn in domestic demand and continuous expansion in the exports-oriented industry. Simultaneously, the global economy is projected to moderate from 5.5 per cent in 2021 to 4.1 per cent in 2022 and 3.2 per cent in 2023 respectively.

The United Kingdom's Office for National Statistics (ONS) had estimated that UK's Gross Domestic Product (GDP) is to grow by 0.1 per cent in October 2021, but has yet to reach the pre-pandemic level (February 2020). The Services Sector advanced by 0.4 per cent in October 2021, primarily contributed by human health services which increased by 3.5 per cent. Meanwhile, the production output declined by 0.6 per cent, influenced by Electricity and Gas and Mining & Quarrying that fell by 2.9 per cent and 5.0 per cent respectively. Likewise, the Construction Output recorded a drop of 1.8 per cent in October 2021 (September 2021: 1.3 per cent), reaching the lowest level in the Construction Sector since April 2020.

The Canadian economy expanded by 0.8 per cent in October 2021 as compared to 0.2 per cent in September 2021. The Manufacturing Sector grew by 1.8 per cent last October backed by the escalation in manufacturing of durable and non-durable goods. Meanwhile, the

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Construction Sector rose by 1.6 per cent in October after the downturn trend for the past five months. This prominent performance was gassed up by the residential (2.0%) and non-residential (1.3%) sub-sectors. In addition, the Mining, Quarrying, and Oil & Gas Extraction Sectors grew by 1.5 per cent in October 2021.

Preliminary estimates in the ASEAN region are expecting Singapore's economy to grow 5.9 per cent year-on year in the fourth quarter of 2021 as compared to 7.1 per cent growth in the previous quarter. This growth was driven by the strong performance of the Manufacturing Sector which surged 14.0 per cent after registering 7.9 per cent in the third quarter. Concurrently, the Construction Sector recorded a modest growth of 2.0 per cent in comparison to the previous quarter. Overall, Singapore's economy will grow 7.2 per cent in 2021 as against the contraction of 5.4 per cent in 2020.

Overview of the Economy of Malaysia

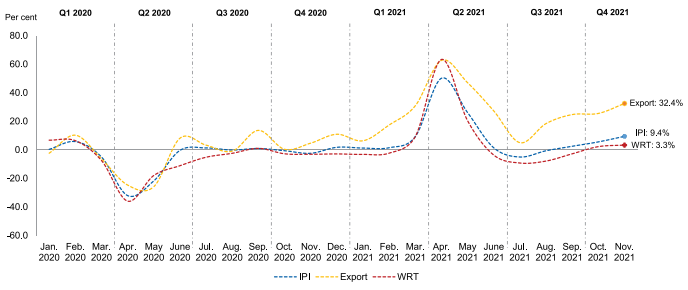
In the first quarter of 2021, Malaysia's economy shrank marginally by 0.5 per cent as compared to a decline of 3.4 per cent in the fourth quarter of 2020. All economic sectors in this quarter managed to outperform the previous two quarters. In the second quarter of 2021, Malaysia's GDP continued to surge by 16.1 per cent, resulting in the expansion of the economy by 7.1 per cent in the first half of 2021, against a decline of 8.4 per cent in the same period of the previous year. However, due to the alarming COVID-19 cases stemming from the emergence of the newly-evolved and fatal variants, more stringent movement control measures had to be implemented to hold in the pathogens' spread. This has slowed the country's economic performance in which Malaysia's GDP recorded a contraction of 4.5 per cent in the third quarter of 2021.

Towards the end of 2021, more economic, social and recreational activities resumed their operations as all states have transitioned to Phase 4 of the National Recovery Plan (NRP). The easing of inter-state travel rules has given significant progress, especially on the domestic tourism-related industries. This positive development will enable entrepreneurs to restore business momentum, which thus will drive economic rebound in Malaysia.

Malaysia's Manufacturing Sector chalked up a sales value of RM142.4 billion in November 2021, accelerated by 18.8 per cent from RM119.9 billion reported in the previous year. At the same time, the Industrial Production Index (IPI) increased by 9.4 per cent in November 2021, contributed by a hike of 11.3 per cent in the Manufacturing Index, 5.1 per cent in the Electricity Index and 3.7 per cent in the Mining Index.

The indicators for the Services Sector demonstrated that the sales value for the Wholesale & Retail Trade surged by 7.0 per cent year-on-year, contributed by the sub-sectors of Motor Vehicles (8.6 per cent), Wholesale Trade (6.8 per cent) and Retail Trade (6.7 per cent). As for the Volume Index (VI), the Wholesale & Retail Trade recorded a growth of 2.9 per cent year-on-year, attributed to the Motor Vehicles (5.2 per cent), Retail Trade (3.3 per cent) and Wholesale Trade (1.4 per cent) sub-sectors.

Chart 1: Growth Year-on-Year of Industrial Production Index, Wholesale & Retail Trade Index and export of Goods, January 2020 to November 2021 (%)

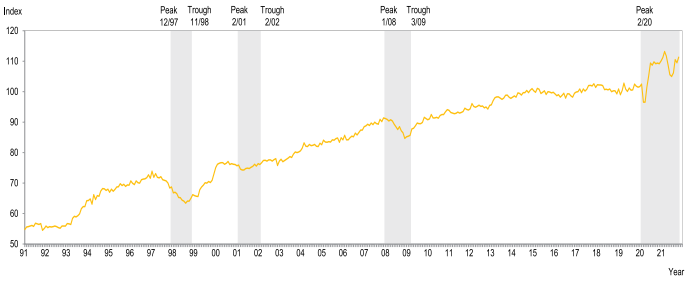


Source: Department of Statistics, Malaysia

Malaysia's export performance remained robust in December 2021 with the export value above RM100 billion, the fourth consecutive months since September 2021, corresponding to the favourable external and domestic economic activities. Exports in December 2021 once again broke its record, reaching RM123.8 billion and expanded by 29.2 per cent, year-on-year (y-o-y). Simultaneously, imports also registered a strong growth of 23.6 per cent to RM92.9 billion as compared with December 2020. Adding to the remarkable performance of exports and imports, total trade soared by 26.8 per cent to RM216.7 billion as compared to the same month in 2020, bringing to the highest ever total trade of RM2.2 trillion for the year 2021.

Based on the current scenario of the Malaysian economy, the economic performance of the fourth quarter of 2021 is anticipated to maintain its favourable momentum despite encountering the COVID-19 pandemic and natural disasters simultaneously. Torrential downpours in the central region and the east coast of the country in December 2021 had caused major floods in several states. Accordingly, the DOSM has conducted a survey on flood disaster impact involving 60 districts nationwide. The total losses incurred was RM6.1 billion which was equivalent to 0.4 per cent of the country's nominal GDP. Public assets and infrastructure affected the most by the incident, amounted to RM2.0 billion. In view of industry damage, the natural disaster caused losses estimated at RM1.5 billion.

Chart 2: Leading Index (2015=100) and Business Cycle (Gray Shaded Areas), January 1991 to November 2021



Source: Department of Statistics, Malaysia

The Leading Index (LI) of November 2021 marks the recovery of the Malaysian economy regaining its momentum in the coming months as indicated by the level of LI which consistently exceeded 100.0 points with an uptrend. The LI continued to record a growth in November 2021 from the previous year by recording 1.7 per cent in the reference month. On a monthly basis, LI followed a similar trend by registering 1.6 per cent in November 2021. Nevertheless, the recent floods that hit Malaysia are expected to affect all levels of society and in turn cause economic losses in the affected states, adding to current woes stemming from the pandemic crisis.

The full publication of MESR Volume 1/2022 can be downloaded from the DOSM Website at www.dosm.gov.my or TEEAM Website at www.teeam.org.my

Source: Department of Statistics, Malaysia

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The Cost vs. Performance Decision for Life Safety Equipment in Buildings

Richard Hosier

Regulation and safety conventions require modern public buildings to install essential Life Safety and Fire-Fighting equipment (LSFF Systems) so that in case of emergency, occupants can escape, property can be saved and, first responders can support evacuation and commence fire-fighting operations.

Life Safety Equipment include: Fire Detection and Evacuation Systems, Smoke and Heat Extraction, Fans, Stair Pressurisation Equipment, Emergency Lighting and Fireman's Lifts.

Fire-Fighting Equipment include: Sprinkler or Suppression Systems and Fire Hydrants. The cost of these equipment and their installation is often 2% to 3% of the cost of the building and for some buildings, such as large hospitals, museums and performing arts centres, the cost is usually in the higher range. This means, in a large 120-bed hospital with a construction cost of about $120 Million, the life safety and fighting equipment would cost $3 million to $4 million.

This major investment is made in all major commercial high-rise, metro, healthcare, major retail malls, tunnels and transit systems – for the safety of the people living there, working or occupying these buildings, with the sincere hope that it will never be needed. Of course, in the hopefully rare event that it is needed, this investment will be wasted if the systems installed don't work at all, or don't work properly.

Almost all LSFF systems rely on electrical cables to maintain continuity of electric power. These circuits need to keep fire pumps working, smoke extraction fans turning, firemen's lifts operational, evacuation communication systems activated – even if the cables enabling them are exposed to the fire. This is why we choose fire-resistant cables for many of these critical circuits.

Often, building regulations and authorities require a minimum performance for such equipment and the essential cables, but it is important to understand what this 'minimum' means, in terms of reliability and real-life performance.

For Fire-Resistant cables in many parts of Asia, this means compliance with tests such as the BS 6387 CWZ. In UK, Australia, America, Germany and other parts of the world, there are different tests with higher requirements, but even those are often compromised when we make a critical evaluation based on 'Fit-for Purpose' performance. The fundamental reality for electrical circuits supporting LSFF equipment is that the cable itself is only one part of the wiring system and testing just this one part in isolation ignores the crucial fact that the cable must be installed in different configurations, and with different supports and fixings.

Testing of fire-resistant cables in vertical installations, where cables are supported by clamps and cable ties, shows that the outer polymeric cable jacket can quickly burn away, leaving the cable to fall down due to its weight and the effect of gravity. This movement most often causes circuit failure [Figure 1].

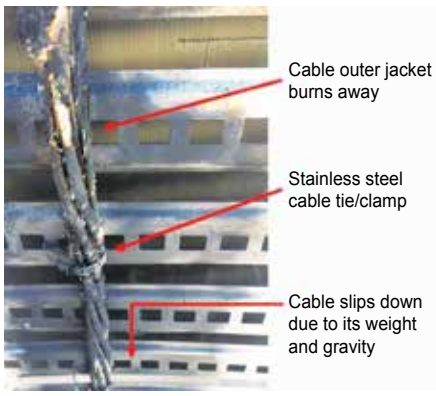

Figure 1. Vertical cable installation

Fire-Resistant cables installed in galvanised conduit have proven to fail prematurely because of the effects of zinc in the galvanisation, reacting with the conductor and/or conductive gasses emitted from the burning insulations [1] and [2]. Cable supports and fixings form part of the essential wiring system and need to function together under realistic fire conditions, so unless tested together as a full system, the cables' installed performance is simply guesswork.

BS 6387 CWZ and many other fire-resistant cable tests only test the cable, and not the full wiring system. There is only one test protocol which requires testing of the cable together with all of its installation hardware, and that is UL 2196. Under this Test and Certification Programme, a cable itself is not qualified alone – rather the 'wiring system' comprising all parts together, and thus its installation method is tested and approved separately for both horizontal and vertical installations [Figure 2].

International Fire Resistance tests for cables and wiring systems

Code: Good | Ok | Inadequate | Not Acceptable

Low to high performance / Low to high difficulty

Country	Test Method	Type of Test	Scale of Test	Test Config.	Full System (Integrated) Fire Test	Max. Test Temperature	Test Duration	Intervention	Pass Critera
USA & Canada	UL 2196	Furnace	Full scale	Horizontal & Vertical	Yes	1010°C	2 hours then water test	Full Pressure Fireman's Hose	5 horizontal 5 vertical all must pass
Australia & NZ	AS 3013	Furnace	Medium scale	Horizontal only	No	1040°C	up to 2 hours then water test	Water sprinkle test	allows a 2 out of 3 pass criteria
Germany & Belgium	DIN 4102-12	Furnace	Medium scale	Horizontal only	Part	1040°C	90 min	none	Sample tested must pass
UK & Hong Kong	BS 8491 BS EN 50200 BS 8434-2	Flame	Small scale	Horizontal only	No	842°C BS 8434-2 at 930°C	up to 2 hours then water test	Water sprinkle mechanical shock	Sample tested must pass
Asia & Middle-East	BS 6387	Flame	Small scale	Horizontal only	No	950°C fire+water at 650°C	3 hrs fire only 30 min fire + water 15 min mech shock	Water sprinkle mechanical shock	allows a 2 out of 3 pass criteria
RoW	IEC 60331-2	Flame	Small scale	Horizontal only	No	830°C	3 hours	none	Sample tested must pass

Figure 2. International Fire Resistance tests for cables and wiring systems

Another consideration for Fire-Resistant cable circuits in buildings is the need to electrically engineer these circuits to work reliably under fire conditions. At realistic fire temperatures of 900°C to 1,000°C, the electrical resistance of copper conductors increases about 5 times above their normal operating temperature. This change significantly increases voltage drop and decreases the cables' current-rating capacity. It also impacts the potential short-circuit capacity of the cable.

However, these critical effects are not considered in the testing or certifying of any fire-rated cables. Thus, it is very important for design engineers to understand these critical effects in cable sizing decisions in order to fully ensure that during a fire, the cable will remain electrically functional in its required role. The recent 2020 edition of BS 8519 Section 13 [Effects of fire temperature on cable size] specifically covers these issues and provides guidelines for design.

While Building Regulations and BOMBA (Fire Department) specifications require a minimum compliance, this minimum

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ATS Control Module

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requirement is not appropriate for every building, large or small. The cost of the Life Safety and Fire-Fighting equipment in a building is quite significant, but the cost of the few, but critical, fire-resistant wiring circuits, usually represents only 1% to 2% of the total cost of the installed LSFF equipment itself, or less than 0.05% of the total building cost.

The cables and wiring systems which ensure that this critical equipment work effectively and reliably, to save lives and property in emergency conditions, has a negligible cost in the construction of any major building, and is not one where compromise should be made.

For further information on designing and specifying Fire-Resistant Wiring Systems which are 'Fit-for Purpose' in any major building or infrastructure project, contact the Expert Team at EITA Power System (vitalink@eita.com.my) who will be pleased to explain and provide In-House Training Courses and support.

References

[1] Underwriters Laboratories Changes to certification programs (Release 12PN-51) Sept. 12, 2012 http://uwchambers.com/wp-content/uploads/2020/05/Tunnelling-Journal-Cable-Certification-Crisisor-Crossroads-Oct-Nov-2012-issue.pdf

[2] FACTWIRE – Sub-Standard electricity cables at Hong Kong public housing estate raise safety fears – Hong Kong Free Press - April 2017 https://hongkongfp.com/2017/04/26/sub-standard-electricitycables-hong-kong-public-housing-estate-raise-fire-safety-fears

Mr Richard Hosier *has worked in the Electro-Technology industry throughout the Asia Pacific region for 35 years. During this time, he has specialised in Electrical Cables and Power Distribution, particularly in Essential Wiring Systems which enable Life Safety and Fire-Fighting equipment. He has undertaken significant research into the changing Built Environment and in moving the needs for increased security in the face of high-density populations in multi-purpose transportation, and also commercial and residential buildings. His extensive research and on-the-field findings point to the most urgent need for a critical review of existing Cable Test Standards and Building Regulations, as well as a stronger responsibility framework in "Fit for Purpose" Design and Engineering.*

Mr Hosier's specialties are in Fire Safety of Electrical Cables and Essential Wiring System Design. He has published White Papers, Technical Articles and also authored two JI-CABLE Papers on the Fire Performance of Cables. He frequently lectures to authorities and designers on the subject of Electrical Cable and Wiring System Design throughout the Asia/Pacific, Europe & UK. He is a:

- *Member - SECA (Singapore Electrical Contractors and Licensed Electrical Workers Association).*
- *Fellow - Institute of Company Directors Australia.*
- *Member - Fire Protection Association Australia.*
- *Winner of the UK Institute of Fire Protection Officers (IFPO) Technical Trophy Award in 2014.*
- *Guest Lecturer - Shanghai University of Science and Technology on irradiation in the W&C industry.*

On behalf of the Australian Electrical and Electronics' Manufacturers Association, Mr Hosier has served on three Australian and New Zealand Standards Technical Committees for the development of Electric Cable and Fire Performance Standards, viz.:

- *EL 1 Sub-Committee ASNZS 3008.1 - Current Ratings for Cables, up to 0.6/1KV*
- *EL 37 Committee AS/NZS 3013 - Classification for Fire and Mechanical Performance of Wiring Systems*
- *EL 3 Sub-Committee AS/NZS 4507 - Cables, Fire Performance*

Mr Hosier graduated from the UNSW/Australian Graduate School for Management in General Manager Programme in 1996 and obtained a Brighton Tech. UK. Dip. EE in 1975. Since 2020, he is with Marmon Electrical Group as a Consultant for International Business for Asia-Pacific and the Middle-East. He can be reached at richard.hosier@marmonglobal.com.

BNM's Disaster Relief Facility (DRF) 2022

Bank Negara Malaysia's (Central Bank of Malaysia's – BNM's) Disaster Relief Facility (DRF) 2022 has been set up to alleviate the financial burden of Micro and Small and Medium Enterprises (MSMEs) affected by floods and to enable them to resume their business operations.

Eligibility Criteria

SMEs* and Micro Enterprises affected by floods located in districts identified by Agensi Pengurusan Bencana Negara (National Disaster Management Agency) as flood disaster areas, are asked to apply for assistance now. All applications should be made directly with the Participating Financial Institutions (PFIs) to reduce the risk of financial scams.

Purpose of Financing

- Repairs and/or replacement of assets for business use (e.g. plants and machinery) which have been damaged by floods; and/or
- Working capital.

Note: Financing should not be used for re-financing of existing credit/financing facilities.

Financing Size

- Up to RM500,000 per SME; and
- Up to RM75,000 per Micro-Enterprise.

Financing Rate to SMEs

The maximum effective financing rate is up to 3.5% per annum, inclusive of guarantee fee.

Guarantee Coverage

- 80% guarantee cover at 0.5% p.a. guarantee fee.
- Participating Financial Institutions (PFIs) can obtain guarantee coverage from the Credit Guarantee Corporation Malaysia Berhad (CGC) for this facility.

Tenure

Up to 5 years, including a moratorium period of 6 months on both principal and interest/profit payments.

Availability

From 27 December 2021 until full utilisation (or further notice, depending on the flood situation).

Application Procedure

Application to be submitted directly to the PFIs and approval will be subject to the credit assessment of PFIs.

*At least 51% shares held by Malaysians and as defined by SME Corp. Malaysia's Guideline for SME Definition, accessible at: https://www.smecorp.gov.my/images/pdf/2021/Guideline_on_SMEDefinition_Updated_Sept2020_Final.pdf

For more information, kindly contact PFI's Customer Service Centre or BNM's Website at www.bnm.gov.my/sme-financing

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TEL: (603) 7883 6133 FAX: (603) 7883 6188 WEBSITE: www.himel.com

State Associations News

Sabah Electrical Association
Lot No. 3-3-R, Beverly Hills Plaza,
Jalan Bundusan, 88300 Kota Kinabalu, Sabah.
Tel: +6088 - 712 358 Fax: +6088 - 717 358
E-mail: pes233sabah@gmail.
Wedsite: www.pes-sabah.org

PES Friendship Golf 2021

The Sabah Electrical Association (PES) successfully organised its 2021 Friendship Golf on 11 December 2021 at Dalit Bay Golf Club & Resort, Sabah despite the strict new SOPs being implemented by the Sabah State Government. Participants comprised members and members' friends with a total of 52 golfers. After a long break from the lock-down caused by the pandemic, this event has created an excellent platform for social and business networking opportunities amongst PES members and PES's counterparts. A big thank you is recorded to all the Sponsors and Sports Committee Members for their tireless efforts in making the Tournament a resounding success.

The Perak Electrical Association
No. 12-A, Jalan Datuk Mahmud,
31650 Ipoh, Perak Darul Ridzuan.
Tel: +605 - 254 1502 Fax: +605 - 250 9145
E-mail: peaipoh@gmail.com

PCCCI Central Committee 2021-2024

The Perak Electrical Association (PEA) was nominated to participate in the election of the Perak Chinese Chamber of Commerce & Industry's (PCCCI's) 60th Central Committee for 2021-2024, on 27 June 2021. PEA was successfully elected as one of the ten Central Committee Members. The PEA Vice President, Mr Au Wai Yeen represented PEA in the PCCCI Central Committee. PEA Vice President, Mr Au Wai Yeen subsequently attended the Swearing-in Ceremony of the PCCCI's 60th Central Committee via a Zoom Meeting on 6 July 2021.

COVID-19 Fund-Raising 2021

In the effort to curb COVID-19 transmissions, the Government had implemented a series of preventive measures, such as the Movement Control Orders (MCOs) since March 2020. As the economic activities had been severely limited for an extended period, many families were in difficult financial situations. Most unfortunately, they could not even afford for their basic needs, such as food supply and house rental. It was also very difficult for this group of people to request for help and support as they could not successfully get the public's attention. On 4 July 2021, PEA strongly supported the effort of giving back to society, and decided to conduct a "COVID-19 Emergency Assistance" Fund-Raising Programme to help families in desperate needs.

With highly commendable pro-active response from the PEA members, the "COVID-19 Emergency Assistance" Fund-Raising Event finally ended on 20 July 2021 and PEA successfully raised a whopping RM33,000. After several meetings of discussions and selection, the full amount was decided to be allocated to 17 organisations, 3 single-parent families and 36 under-privileged students from 18 schools. PEA Secretary, Mr Chong Kwong Yuen and Treasurer, Mr Lau Sin Leong each donated RM500 for two students who applied after the distribution. Therefore, the total amount raised was RM34,000. Part of the donations has tremendously benefited 38 students from 19 schools. A huge thank you was recorded to the "COVID-19 Emergency Assistance" Project Team comprising Mssrs. Kong Wan Fook, Chong Kwong Yuen, Chung Chun Heng, Lai Koon Loy, Fook Chee Ming, Low Kam Yoong and Jerry Poon Nik Zen for their hard work and kindness. Appreciation also goes to all Committees and members for being so generous and supportive, bringing a highly fruitful success to the "COVID-19 Emergency Assistance" Fund-Raising Project.

TEEAM 69th AGM 2021

PEA Vice President, Mr Richard Wong Ngen Wah who is also Council Member of TEEAM, attended the 69th Annual General Meeting (AGM) and Election of TEEAM which was held on 19 December 2021 at the New World Hotel in Petaling Jaya. The AGM was overwhelmed with 56 attendees and it was convened smoothly under strict Standard Operating Procedures (SOPs) set forth by the Ministry of Health for physical meetings.

CSR for Flood Victims

The recent floods had caused serious damage to countless households. TEEAM President, Mr Siew Choon Thye strongly urged State Association Members to give support in terms of providing volunteer electrical services to help flood victims restore electricity, and also to check on their household wiring. Hence, PEA calls on its members to volunteer in this noble TEEAM CSR activity, to help the affected flood victims. PEA members who are keen to participate in this CSR for Flood Victims are requested to contact the TEEAM Secretariat at 603-9221 4417.

Persatuan Kekompetenan Penjaga Jentera & Pendawai Elektrik Perak (PKPPE)
13B, Medan Bendahara 2, Medan Bendahara,
31650 Ipoh, Perak
Email: pkppe.2001@gmail.com
Facebook

PKPPE AGM 2021

PKPPE Annual General Meeting (AGM) 2021 was successfully held in hybrid proceedings on 4 December 2021 at PKPPE's Clubhouse, Ipoh. Members present at the hybrid AGM unanimously approved and adopted the previous year's AGM Minutes and the Annual Audited Accounts. The day's agenda also included the discussion of upcoming activities and events. It was a fruitful AGM.

Penang Electrical Merchants' Association
No. 171A, Malacca Street, 10400 Penang.
Tel: +604 - 229 0195 Fax: +604 - 228 4233
E-mail: pema_pg@yahoo.com Website: www.pema.org.my

PEMA 73rd AGM

The Penang Electrical Merchant's Association (PEMA) 73rd Annual General Meeting (AGM) was successfully convened online via Zoom on 26 September 2021. In his Opening Address, the PEMA President, Ir. Darren Lee Weng Keen informed that it had been more than 450 days since the first announcement of the Movement Control Order (MCO), beginning on 18 March 2020 due to the COVID-19 pandemic. The situation had not improved much from last year where PEMA members comprising Electrical Contractors, Suppliers and Manufacturers, have gone through cash flow problems, staff reduction/pay adjustments, threat of closure of offices and reduction of job opportunities, to stay afloat while maintaining payment of staff salaries, rental and other overhead expenses during this unprecedented period. Despite the on-going nation-wide vaccination programme which is being carried out to alleviate the threat of the COVID-19 pandemic, PEMA is deeply concerned that it would take some time for the Electrical Contractors, Suppliers and Manufacturing businesses to pick up again in this sluggish economy.

The Minutes of the previous PEMA AGM were duly confirmed by the members at the meeting. This was followed by the tabling of the Annual Report on the activities conducted during the year 2020. It was tabled by the Honorary Secretary, Mr Yeap Kim Poh. The Honorary Treasurer, Mr Neoh Boon Tong tabled the Audited Accounts for the year ended 31 December 2020. Both the Annual Report 2020 and the Audited Accounts 2020 were duly adopted by the members during the AGM. At the end of the AGM, Ir. Darren Lee conveyed his heartiest thanks to everyone present for their precious time and continuous support.

Electrical Association of Sarawak & Sabah
No. 2A/F, 2nd Floor, Hardin Road, 96000 Sibu, Sarawak.
Tel: +6084-319 949 Fax: +6084-325 112, 346 114
E-mail: sibuccci@gmail.com

EASS AGM 2021

The Electrical Association of Sarawak & Sabah (EASS) successfully held its Annual General Meeting (AGM) on 26 December 2021 at SCCCI premises in Sibu. In his Opening Address, EASS Chairman, Mr Hii Hua Chuon mentioned that the Association conducted a Dialogue Session with Sarawak Energy recently, to obtain updated information on areas of expertise, new electricity applications, and also to raise issues faced by EASS members.

"We will continue to co-operate with Sarawak Energy for growth, improvements, and make contribution for the prosperity of Sarawak," he said.

Since March 2020, the COVID-19 pandemic had become increasingly serious and subsequently the Sarawak State Government enforced very strict SOPs. In due consideration of the health and safety of the EASS members, the Association was unable to conduct activities.

Mr Hii Hua Chuon mentioned that of late, the COVID-19 pandemic seemed to be more stable and under control, and that the Sarawak State Government has introduced policies to co-exist with the viruses, and also allow its citizens to have a booster vaccine each. But the existence of the fast-spreading and highly-dreaded Omicron virus in Malaysia has once again worsened the pandemic scenario.

"I hope EASS members will not lower their guard or take the virus lightly, especially the Delta and Omicron viruses, which are far more dangerous. The infections and destructions are much stronger", he said. Everyone has to carry-on with their life, but no matter what happens, everyone should stay alert, and continue to comply with the SOPs of the COVID-19 prevention measures. To protect ourselves and our family is of utmost importance.

Mr Hii further informed that the EASS Council Meeting was conducted in hybrid meeting (physical and online) mode for members' convenience, and to safely discuss the development of the Association's matters.

The EASS's Academic Excellence Awards Ceremony was held in conjunction with the AGM. He said that the students who successfully received the Academic Excellence Awards had successfully passed through one of life's tests. EASS presented cash as awards. He hoped that all the recipients would keep up their studies and continue to make increased efforts for higher achievements in the future. The EASS AGM ended with a pleasant networking luncheon.

Sarawak Electrical Association

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Off Jalan Ang Cheng Ho, 93700 Kuching, Sarawak.
P. O. Box 1494, 93730 Kuching, Sarawak.
Tel: +6082 - 346 188 Fax: +6082 - 345 118
E-mail: sarawakelectrical@gmail.com

SEA AGM 2021

The Sarawak Electrical Association (SEA) held its Annual General Meeting (AGM) on 7 November 2021 at its SEA premises. There was an election of Office-Bearers for the year 2021-2022. The SEA Chairmanship was succeeded by Kapitan Francis Chew Joon Fah.

The SEA Office-Bearers for the Year 2021-2022

Chairman	Kapitan Francis Chew Joon Fah
Assistant Chairman No. 1	Dato' Sri Peter Lu Nguang Siong
Assistant Chairman No. 2	Wong Foo Kok
Secretary	Fiona Ting
Assistant Secretary	Then Jee Khim
Treasurer	Then See Wee
Assistant Treasurer	Ung Kah Kuok
General Officer	Yeo Ngian Sock
Assistant General Officer	Chew Tay Jee
Welfare Officer	Michael Chin
Assistant Welfare Officer	Leiw Huat Heng
Recreation Officer	Ho Bee Huat
Assistant Recreation Officer	Wong Chin Yong
Committee Members	Chu Gwo Jiun, Goh Chang Khoon Lee Kuok Tiong, Liew Thiam Fat Sim Kheng Kui, Wong Kee Soong

Other State Association Members' contacts:

Johor Bahru Electrical & Electronics Association
No.7-01, Jalan Bentara Luar, Taman Iskandar,
80050 Johor Bahru, Johor Darul Takzim.
Tel: +607 - 333 8174 Fax: +607 - 224 1923
E-mail: info@jbeea.com.my
Website: www.jbeea.com.my

Malacca Electrical Contractors and Traders Association
No. 389-G1, Taman Pringgit Jaya,
Jalan Mata Kuching, 75400 Melaka.
Tel: +606 - 283 8688 Fax: +606 - 781 1466

Negeri Sembilan Electrical Engineering Association
c/o No. 194, Jalan Pantai, 71000 Port Dickson,
Negeri Sembilan Darul Khusus.
Tel: +606-647 1105 Fax: +606-647 4728

Sandakan Electrical Engineering Association, Sabah
Block B-2, Lot No. 25, Bandar Utama,
Batu 6, Jalan Utara, 90000 Sandakan, Sabah.
Tel: +6089 - 666 963 Fax: +6089 - 669 936
E-mail: seschin@hotmail.com

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To Our Honorary Treasurer

Ts. Lim Sai Seong

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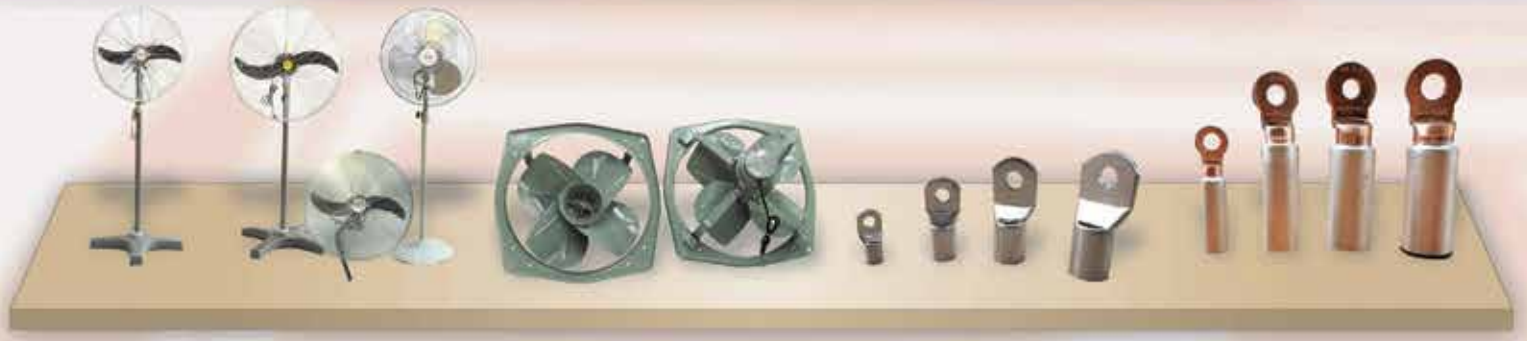
Email: wetkl@wongelectrical.com.my Website: www.wongelectrical .com.my



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NPC 3.1-3.4

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Wong Electrical & Teak Wood (Pg) Sdn. Bhd. (30263-T)
No. 13 Jalan Pantai
10150 Pulau Pinang
Tel: 604-229 2571,2519, 3995, 3686
Fax: 604-229 3613

Branch: 28, Lengkok Kikik 1
Taman Inderawasih
13600 Prai Pulau Pinang
Tel: 604-398 0720
Fax: 604-398 0855

Wong Electrical & Teak Wood (Sel) Sdn. Bhd. (75423-D)
No.33 Jalan 20/14
Paramount Garden
46300 Petaling Jaya Selangor
Tel: 603-7874 8355(HL), 8251, 8135, 7876 2676
Fax: 603-7876 7175

Soon Fay Sdn. Bhd. (99058-U)
No.13, Jalan Kalong
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55200 Kuala Lumpur
Tel: 603-9221 6011(HL), 3313, 6759, 7036, 1264, 1262
Fax: 603-9221 0743

Wong Lighting (M) Sdn. Bhd. (72038-P)
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Tel: 603-2145 6788(HL), 2145 0591
2145 0590
Fax: 603-2145 6799

Branch: No. 34 Jalan 20/16A
Paramount Garden
46300 Petaling Jaya Selangor
Tel: 603-7876 5022(HL), 7874 2409, 7876 0879, 7874 2452
Fax: 603-7876 5057

A Case Study of Malaysia's FDI in Manufacturing Sector Towards Exports of Electrical and Electronics (E&E)

Noraniza Ibrahim and Zuradi Jusoh
Balance of Payments Division, Department of Statistics, Malaysia

The Department of Statistics, Malaysia (DOSM) had recently released the Malaysian Economic Statistics Review (MESR) Volume 1/2022 on 28 January 2022. "A Case Study of Malaysia's FDI in Manufacturing Sector Towards Exports of Electrical and Electronics (E&E)" is featured in the Review, which explores the relationship between Malaysia's FDI in the Manufacturing sector and E&E exports.

1. Introduction

1.1 Exports of Electrical and Electronics (E&E) in Malaysia

The electrical and electronics (E&E) industry is a key driver of Malaysia's industrial development and contributes significantly to Gross Domestic Product (GDP), employment, export earnings and investment. Malaysia is one of the major players in the worldwide semiconductor trade, and the top export destinations were China, the United States, Singapore and Hong Kong. The E&E industry is targeted under the National Key Economic Areas (NKEA), focusing on high-value and high-growth manufacturing activities to gear the country towards a high income economy. This industry comprises four sub-sectors based on the Malaysian Investment Development Authority (MIDA), namely, electronic components, consumer electronics, industrial electronics, and electrical products.

Electronic components - Semiconductors, passive components, printed circuit boards, metal stamped parts and precision plastic parts.

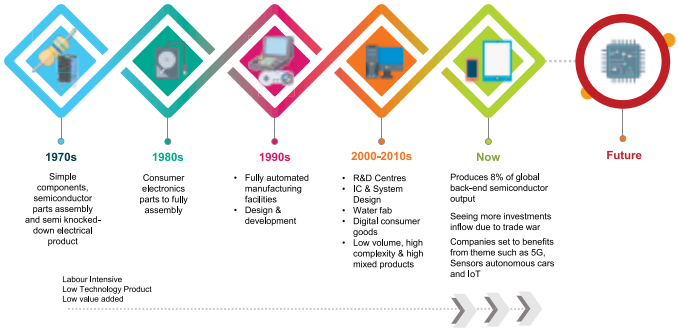
Consumer electronics - Audiovisual products such as television receivers, portable multimedia players (PMP), speakers, cameras and electronic games.

Industrial electronics - Multimedia and information technology products such as computers and computer peripherals, telecommunications equipment and office equipment.

Electrical products - Boards, panels and consoles, switching apparatus, lamps, air conditioners, vacuum cleaners, ovens, transformers, cables & wires, primary cells & batteries, solar cells and modules.

In line with the Industry Revolution 4.0 (IR 4.0) as well as the Internet of Things (IoT), technology is made possible by Malaysia's move towards its established (E&E) sector. Furthermore, this industry played a vital role in our rapid industrialisation and high-ranking among the world's top trading nations. Below is an illustration of the evolution of E&E in Malaysia (Exhibit 1a).

Exhibit 1a: The Evolution of E&E in Malaysia



Source: Malaysian Investment Development Authority (MIDA)

The E&E industry remained highly labour-intensive. Based on the statistics published by DOSM, it was reported that 20.3 per cent of the total paid employees in Manufacturing sector were involved in Electrical and electronics products subsector for the year 2020. Most of the local E&E companies listed on the Bursa Malaysia involved in the mid to lower end of the value chain, serving foreign semiconductor manufacturers, brand owners, integrated circuit (IC) developers and fabricators.

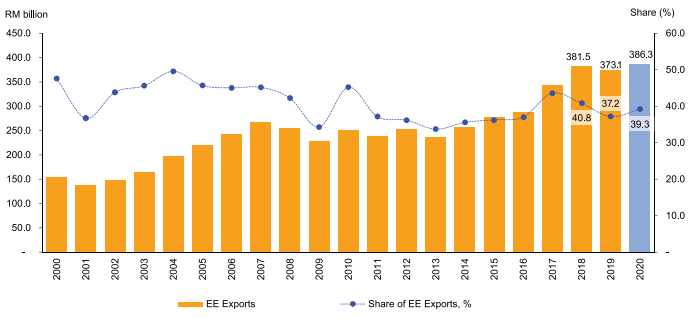
According to the World Semiconductor Trade Statistics report (2020), worldwide semiconductor market sales rose by 6.8 per cent to record USD440 billion in 2020. This was reflected in the growth of all main product categories, except for Optoelectronics and Discrete Semiconductors. The main contributors were Logic with 11.1 per cent, followed by Sensors with 10.7 per cent and Memory with 10.4 per cent. The Americas region produced a noticeable growth of 21.3 per cent, while Europe showed a market decline of 5.8 per cent. On the other hand, Japan and the Asia Pacific had a single-digit positive growth rate.

The effect of the COVID-19 pandemic on the world in early 2020 was devastating, threatening the health and well-being of the people and disrupting economic activities. This pandemic also caused uncertainties in global trade, which hit hard Malaysia's economy as the nation experienced a significant decline in the E&E exports. Still, from May 2020 onwards, exports have largely recovered as a result of improved external demand and the overall resilience of the global E&E value chain. The global pandemic and the ongoing trade tensions between China and the United States were widely seen as opportunities for Malaysia to expand its E&E exports for the medium to long term (M. Philip et al., 2021).

The E&E products in 2020 accounted for 39.3 per cent of Malaysia's total exports or RM386.3 billion as depicted in Chart 1a, increased by 3.5 per cent from the previous year, representing 27.3 per cent of GDP (at current prices). Higher exports of electronic integrated circuits was contributed by the increase in apparatus for transmission or reception of voice, images and data, and parts for electronic integrated circuits to facilitate work-from-home practices. Parts & accessories for computers, parts & accessories of telephone sets & other telecommunication equipment, computers and others also contributed to the higher exports of E&E products. Based on the observation, the expansion of E&E products was mainly to Singapore, China, SAR Hong Kong, the Republic of Korea, Viet Nam and the United States.

According to the Economic Outlook 2021, Malaysia's external trade is expected to remain moderate in 2021, with exports rebounding by 2.7 per cent. Exports of manufactured goods is expected to increase by 2.5 per cent, supported by high demand for E&E and non-E&E products. Meanwhile, the World Semiconductor Trade Statistics has projected a 19.7 per cent increase for the global semiconductor sector valued at USD527 billion (RM2.19 trillion) in 2021, followed by 8.8 per cent growth at USD573 billion (RM2.38 trillion) in 2022.

Chart 1a: Exports of Electrical and Electronics (E&E) in Malaysia, 2000 – 2020



Source: Department of Statistics, Malaysia

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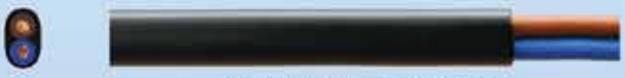

PVC/PVC Twin Flat Cable

Twin Flat Power Cable

PVC Flexible Power Cable (0.5 to 240mm²)

PVC Welding Cable (10 to 240mm²)

Synthetic Rubber Welding Cable
(10 to 240mm²)

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PVC/PVC Flexible Cord (0.5 to 6.0mm² ; 2 to 5 Cores)

S. Rubber Flexible Cord (0.5 to 6.0mm² ; 2 to 5 Cores)

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TEEAM THE ELECTRICAL AND ELECTRONICS ASSOCIATION OF MALAYSIA

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SIRIM CERTIFIED TO MS2112-5 CERT. NO.: PC000785

Lot 12, Jalan CJ 1/2A, Kawasan MIEL, Batu 11, Jalan Balakong. P. O. Box 28, 43200 Cheras, Selangor Darul Ehsan, Malaysia.
Tel: +6 03- 9075 7999 (Hunting Line) Fax:+6 03 9075 7488 Website: www.fajarcables.com.my Email: contact@fajarcables.com.my

1.2 Overview of FDI in Malaysia

Foreign Direct Investment (FDI) has played a pivotal role in the international economic integration and enhancement of the country's economic growth and development. In sustaining the economic growth, most countries encourage foreign direct investment owing to its positive effects on several macroeconomic variables such as employment, balance of payments, production capacity and general level of prices (Demirsel et al. 2014). Based on Global Investment Competitiveness Report 2017/2018, FDI has potential benefits to the local economy, such as transfer of technology, strong managerial and organisational skills, better access in foreign markets, and exports diversification. Moreover, foreign investors bring extensive knowledge and expertise to bring positive spill-overs for the host country's economy (World Bank, 2018).

Being strategically located in the Asia Pacific rim and the heart of Southeast Asia, Malaysia continued to be an attractive investment destination among foreign investors. Based on OECD Proceeding (1999) entitled "Foreign Direct Investment and Recovery in Southeast Asia", Malaysia and Thailand were among the most open countries in the developing world to welcome foreign investment. Malaysia's economy has also successfully changed over the decade from commodities to Manufacturing sector. The transformation is more noticeable in terms of trade, of which exports of commodities, particularly in rubber and tin, has shifted to manufactured products, primarily in electronic goods. The efforts to attract foreign investors have long begun before other countries in this region. In the 1990s, Malaysia ranked fifteenth largest recipient of FDI worldwide and ranked fourth after China, Brazil and Singapore among non-OECD countries.

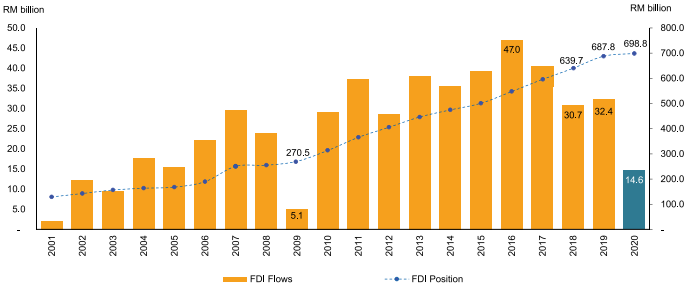
Malaysia is still considered a favourable investment destination amid the uncertain economic situation in 2020, and its ranking proves this in the global economic position. The DHL Global Connectedness Index (GCI) 2020 stated that Malaysia ranked the second-highest in Southeast Asia and the sixteenth most globally connected country (out of 169 countries). Meanwhile, Malaysia was ranked twelfth among 190 economies by the World Bank in the Doing Business 2020 report (2019), which improved from the fifteenth position in 2018.

As measures to encourage and attract more foreign direct investment to Malaysia, the Government has introduced many incentives and advantages to foreign investors. The incentives provided were to shape the benefits from foreign investors and determine the direction of investment, especially towards industries in need of investment. Based on the latest double taxation agreements (DTA) status published by the Inland Revenue Board of Malaysia (LHDN), Malaysia has entered into the agreement of DTA with more than 70 countries. Besides that, Malaysia also provided a wide range of tax incentives for new investments, such as Promotion of Investments Act 1986, Income Tax Act 1967, Customs Act 1967, Excise Act 1976 and Free Zones Act 1990, as listed in an official website of MIDA. Subsequently, several incentives were introduced, especially for the Manufacturing sector such as Pioneer Status, Investment Tax Allowance, Incentives for High Technology Companies and Incentives for Strategic Projects.

The Malaysia Government perceives the Manufacturing sector as a key driver of economic growth and catalyst for uplifting GDP. The majority of the projects concentrate on high-value and high-growth industries. This is evident through the number of manufacturing projects approved by MIDA in 2020 which rose by 6.2 per cent to record 1,049 projects from 988 projects in the previous year. The approved projects are worth RM91.3 billion, of which RM56.6 billion or 62.0 per cent was contributed by foreign investment in Manufacturing sector, while the remaining was from domestic investment. According to DOSM, the total employed persons engaged in the Manufacturing sector as at end of 2020 were 2.22 million persons, representing 14.7 per cent of the total employed in Malaysia with an average monthly salary & wages of RM3,521 was paid per employee.

Looking into the time series statistics on FDI performance from 2001 to 2020 that was released by DOSM, FDI flows in Malaysia have been in an upward trend, as depicted in Chart 1b. The lowest FDI flows since

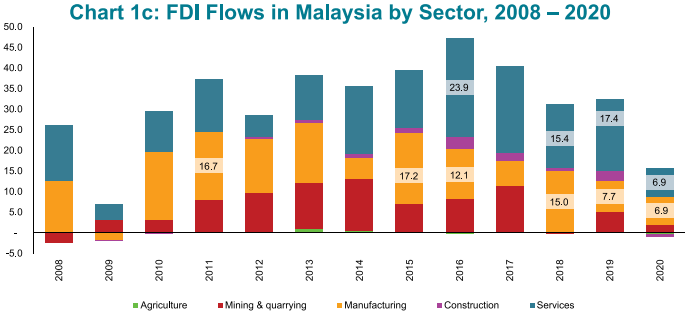
Chart 1b: Performance of FDI in Malaysia, 2001 – 2020



Source: Department of Statistics, Malaysia

2001 (RM2.1 billion) were recorded in 2009, which dropped to a net inflow of RM5.1 billion. This was a repercussion of the Great Recession effects, which began at the end of 2007 and ended in mid-2009. In contrast, FDI registered the highest investment in 2016 with a value of RM47.0 billion, driven by higher investment precisely in Financial activities. In 2020, FDI flows into Malaysia registered a lower value at RM14.6 billion as against RM32.4 billion in the previous year due to the faltering global economy following the health crisis. Despite the value of FDI inflows declining by 54.8 per cent, the accumulated FDI in Malaysia as at the end of 2020 has increased to RM698.8 billion (end of 2019: RM687.8 billion), mainly contributed by the Manufacturing sector primarily in Electrical & electronics products, followed by Financial activities and Mining sector.

Chart 1c: FDI Flows in Malaysia by Sector, 2008 – 2020



Source: Department of Statistics, Malaysia

Economic activities in Malaysia has shifted from Manufacturing sector to Services-based sector in the 2000s. Referring to the FDI flows in Malaysia by sector in Chart 1c, the Services sector in Malaysia continued to expand peculiarly in 2016 with RM23.9 billion or 50.9 per cent share of total FDI flows (RM47.0 billion), particularly in Financial activities. The Manufacturing sector was the second-largest contributor after Services sector. Manufacturing sector recorded a paramount performance in 2015 with a value of RM17.2 billion mainly resulted from higher investment in equity & investment fund shares from subsector of Electrical & electronics and Petroleum & chemical products. However, FDI in Manufacturing sector decreased slightly in 2020, from RM7.7 billion in the last year to RM6.9 billion partly attributed to the health crisis which hit the country during the period. Although the Services sector has been a major contributor to the FDI flows in recent years, the Manufacturing sector remained the main attraction for foreign investors. The total foreign investments approved by MIDA where the Manufacturing sector continues to increase almost every year. In addition, the statistics also showed that in 2020, Manufacturing sector constituted the largest portion with a value of RM91.3 billion (55.7%), while the Services sector was RM66.7 billion (40.7%). From this, 62.0 per cent of the total Manufacturing sector was contributed by foreign investors. According to the DOSM's International Investment Position (IIP) statistics, as of the end of 2020, the Manufacturing sector registered a higher investment of RM274.2 billion as against RM271.4 billion in the preceding year, primarily in E&E products.

Malaysia experienced volatile FDI flows in recent years that seem to impact the Manufacturing sector inflows, but the performance of E&E exports has shown a consistent improvement. This study aims to identify the short and long-run relationship between exports of E&E and FDI flows in the Manufacturing sector and evaluate the impact of the Manufacturing sector on the performance of E&E exports in Malaysia.

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1.3 Literature Review

wide range of literature concentrated on the impact of FDI on economic or GDP growth and the determinants of FDI in the Manufacturing sector. The available empirical literature on the impact of the Manufacturing sector on exports, precisely in E&E products, are very limited, especially in the case of Malaysia. According to Yee et al. (2016), when cited in a study by Joshi and Rakesh in 2005, export is defined as selling goods and services produced in the home country to other markets in International Trade.

FDI influences economic growth by raising the factor productivity and the efficiency of resources used by recipient countries. According to OECD (2002), FDI contributed to boosting exports in the short and medium terms, depending on the context. For example, inward FDI supports the host country through resource endowment and geographical location.

A study from Banga (2007) showed that FDI could increase exports in a home country, reassure existing markets, and reduce the risks attached to the investments. According to Yee et al. (2016), the effective and useful policies and activities can be applied to increase exports. Increased trading activities will significantly affect the country's trade increase when more opportunities are opened to new markets. Moreover, FDI screening will be used to maintain the quality of FDI inflows. This method is also important to guarantee that the investments can stimulate and increase export competitiveness. In Malaysia, Fook (2011) identified the short-run and longrun relationship that exists among FDI and world GDP towards exports of E&E in Malaysia, whereas the real effective exchange rate had an inverse correlation with exports of E&E.

Several studies showed the role of FDI inflows in increasing Malaysia's E&E exports. According to Yong and Yeoh (2020), FDI inflows from PR China and the United State exchange rate significantly impact E&E exports in Malaysia. Indeed, this was supported by stability in the country and government policies. In the view of Wong and Tang (2007), there was no existence in the long-run relationship between FDI inflows and the top five of electronics exports by Standard International Trade Classification (SITC) product groups, which are (i) semiconductor devices, (ii) automatic data processing equipment, (iii) telecommunication equipment, parts and accessories, (iv) sound recorders or reproducers, television image and sound recorders or reproducers; and (v) radio-broadcast receivers with sound recorders or reproducers. However, this study also revealed a bi-directional causality between FDI and semiconductor exports via Granger-causation tests. This is strongly supported by several studies stating that FDI promotes exports and stimulates FDI. Additionally, the high demand for semiconductor devices is also translated in FDI inflows where this sub-sector be the major recipient in the Manufacturing sector.

2. Methodology

This paper aims to examine further and identify the short and long-run relationship and to evaluate the impact of FDI flows, specifically in the Manufacturing sector, towards E&E exports in Malaysia. How far does the Manufacturing sector from FDI influence the performance of E&E exports in Malaysia? Quarterly time series data from 2008 to 2020 are utilised in this study. The variables used are the Manufacturing sector from FDI and exports of E&E published by DOSM. The detail of the variables and sources were shown in Table 1a. In this study, the dependent variable was exports of E&E, while the Manufacturing sector constitutes the independent variable.

Table 1a: List of Variables for the Period Q1 2008 – Q4 2020

Variable	Explanation	Sources
Export E&E	Export of E&E, (RM)	DOSM
Mfg FDI	Manufacturing sector of FDI, (RM)	DOSM

Time series analysis is a statistical technique related to time-series data or trend data. The important assumption required for time series analysis is that the data needs to be stationary to avoid spurious causality (Pesaran and Shin, 1999; Baumöhl and Lyócsa, 2009). To fulfill the main assumption of time series analysis, the Augmented Dickey-Fuller (ADF) test was used to determine the stationary of the variables, while an Autoregressive Distributed Lag (ARDL) test and Granger causality test were adopted to identify the existence of cointegration relationship between the Manufacturing sector and E&E export performance.

The structure of the estimation model equation is explained as below;

$$\Delta y_t = \beta_0 + \beta_1 x_t + \varepsilon_t$$

Where Y is the dependent variables while X is a vector of independent variable. The coefficients is the constant term and is the error term.

3. Empirical Result

3.1 Unit root tests

The Unit root test is used to detect whether the time series data is unit root or stationary. If the unit root exists, it shows that the time series is non-stationary. The Augmented Dickey-Fuller (ADF) is a common statistical test used to identify the existence of unit root (Chaudhary, 2020).

Table 1b: ADF Results of Unit Root Test

Variables	Probability Value	
	Level	First Difference
Export E&E	0.9501	0.0000
Mfg FDI	0.0000	0.0000

The results of ADF test are reported in Table 1b which showed that the variables of E&E exports are stationary at the first difference I(1) while the FDI in Manufacturing sector is stationary at level I(0). In other words, the data series are stationary in a different order. Thus, the next step is to examine the cointegration between the variables.

3.2 Autoregressive Distributed Lag (ARDL)

Based on the previous results of stationary analysis, Autoregressive Distributed Lag or ARDL is the most appropriate model to check the existence of a relationship and this model is applicable for non-stationary time series and time series with mixed order on integration (Pesaran and Shin, 1999; Shrestha and Bhatta, 2018). In this study, the ARDL test is used to examine the short- and long-run relationship between exports of E&E and Manufacturing sector.

For the estimation of the ARDL model, the optimal lag lengths were determined using the consideration of Akaike Information Criterion (AIC), as proposed by Pesaran et al., 2001; Narayan and Narayan, 2005. In this study, the better model used is ARDL (4,4), the smallest value defined by AIC.

The result showed a short-run relationship between exports of E&E and Manufacturing sector at 0.05 level. Next, the long run form and Boundary test was applied to identify the long-run cointegration between variables.

Table 1c: Boundary Test Statistics

Test Statistics	Value	Significant value	I(0)	I(1)
F-statistic	2.162531	10%	3.02	3.51
		5%	3.62	4.16
		1%	4.94	5.58

Null Hypothesis: A long-run relationship does not exist

The analysis from Boundary test statistics found that the results were not statistically significant at all levels (1%, 5% or 10%) when compared with the lower and upper bound value whereby the value of F-statistic was lower than below bound (Table 1c).

This can be concluded that there was no existence in the long-run cointegration relationship between variables. Thus, this showed no relationship between E&E exports and the Manufacturing sector in the long-run.

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3.3 Granger causality test

The Granger-causality test was performed to investigate the causal relationship between the variables and this test requires both series to be stationary (Granger, 1969). According to the estimation results as shown in Table 1d, the Granger causality runs one-way from exports of E&E to FDI in Manufacturing sector. In other words, for Malaysia's case, it is statistically significant to conclude that exports of E&E do does Granger caused to FDI in the Manufacturing sector at a 5 per cent significance level.

Table 1d: Granger-causality Test

Null Hypothesis:	F-statistic	Prob. Value
FDI in Manufacturing does not Granger Cause exports E&E	0.52648	0.5944
Exports E&E does not Granger Cause FDI in Manufacturing	4.83026	0.0127

4. Conclusion

This study provides new empirical evidence on the causality relation between Malaysia's FDI in the Manufacturing sector and exports of E&E from 2008 until 2020. However, the finding shows that the exports of E&E was stationary at the first difference whereas the FDI in Manufacturing sector was stationary at level. Results from the ARDL model suggested a short-run relationship between exports of E&E and FDI in the Manufacturing sector. Concurrently, the study found no long-run cointegration between the variables. The Granger causality shows the unidirectional causality from exports of E&E to FDI in the Manufacturing sector in the case of Malaysia's economy. It can be explained as Malaysia is one of the major players in the worldwide semiconductor trade which has attracted more foreign investor in Malaysia's Manufacturing sector.

This study focused on FDI in the Manufacturing sector as the only determinant of E&E exports performance in Malaysia. Therefore, the results indicate that other factors may precisely influence the export's growth in E&E products. Thus, this study should explore further by incorporating other variables such as Gross Fixed Capital Formation (GFCF), imports of intermediate goods, exchange rate and services engaged in E&E products, and other related factors most likely to contribute to E&E exports in Malaysia.

With the increase of global and domestic demand, it will undoubtedly take a lot of effort to stay on track with commercial collaborations between local and international businesses. Furthermore, direct assistance such as tax reductions for hard-hit sectors like tourism, transportation, and construction are expected to positively impact Malaysia's FDI in 2021 recovers to the highest level in Southeast Asia whilst boosting economic growth. These measures need to be implemented immediately to attract more foreign companies and sustain the existing foreign investment from terminating their business in Malaysia.

References

Akaike, H. (1974) "A new look at statistical model identification" IEEE Transactions on Automatic Control, 9, 716-723.

Banga R. (2007). Explaining Asian Outward FDI. Paper presented in ARTNeT Consultative Meeting on Trade and Investment Policy Coordination, 16 –17 July, Bangkok (https://scholar.google.com.tw/scholar?hl=en&as_ ARTNeTConsultative+-Meeting+on+Trade+and+Investment+Policy+Coordination%2C&btnG=)

Baumohl, Eduard and Lyocsa, Stefan (2009). Stationarity of Time Series and the Problem of Spurious Regression, September 30, 2009). Available at SSRN: https:// ssrn.com/abstract=1480682 or http://dx.doi. org/10.2139/ssrn.1480682

Chaudhary, M., (2020). Why is Augmented Dickey–Fuller test (ADF Test) so important in Time Series Analysis. Retrieved September 11, 2021 from https://medium.com/@cmukesh8688/why-is-augmented-dickey-fuller-testadf- test-so-important-in-time-series-analysis-6fc97c6be2f0

Double Taxation Agreement Status (2019). Inland Revenue Board of Malaysia (Lembaga Hasil Dalam Negeri Malaysia, LHDN). Retrieved September 2, 2021 from http://www.hasil.gov.my/bt_goindex.php?bt_kump=5&bt_skum=5&bt_posi=4&bt_unit=1&bt_sequ=1&bt_lgv=2

Department of Statistics Malaysia, (2021). International Investment Position Q1 2021. Retrieved September 3,2021 from https://newss.statistics.gov.my/newss-portalx/ep/epProductCatalogForm.seam?cid=259158

Department of Statistics Malaysia (DOSM), (2021). Statistics of Foreign Direct Investment in Malaysia 2020. Retrieved September 3, 2021 from https://newss.statistics.gov.my/newssportalx/ep/epProductCatalogForm.seam?cid=259167

Department of Statistics Malaysia (DOSM), (2021). Monthly Manufacturing Statistics July 2021. Retrieved September 15, 2021 from https://newss.statistics.gov.my/newss-portalx/ep/epProductCatalogForm.seam?cid=259192

Department of Statistics Malaysia (DOSM), (2021). Monthly Principal Statitics of Labour Force, Malaysia, July 2021. Retrieved September 15, 2021 from https://newss.statistics.gov.my/newss-portalx/ep/epFreeDownloadContentSearch.seam?cid=389266

Economic Outlook (2021). Retrieved September 5, 2021 from https://belanjawan2021.treasury.gov.my/pdf/economy/2021/economic-outlook-2021.pdf

Fook, C. C., (2011). The Factors Influencing Malaysia's Electrical & Electronics (E&E) Exports 1970 – 2010. Master of Business Administration, Universiti Sains Malaysia. Retrieved from http://eprints.usm.my/26984/1/THE_FACTORS_INFLUENCING_MALAYSIA%E2%80%99S_ELECTRICAL_%26_ELECTRONICS.pdf

Granger, C.W.J. (1969). Investigating causal relations by econometric models and cross-spectral models. Econometrica, August 1969. Vol. 37, No. 3, pp. 424 – 438.

Global chip demand remains high. Retrieved September 13, 2021 from https://www.mida.gov.my/mida-news/global-chip-demand-remains-high/

H. N. Au Yong and Bryan Yeoh (2020). Exchange Rate, Foreign Direct Investment, Inflation and Export Performance in Malaysia. Proceedings of the 2nd Africa-Asia Dialogue Network (AADN), International Conference on Advances in Business Management and Electronic Commerce Research. November 2020, No. 4, pp. 1-5 (https://doi.org/10.1145/3440094.3440382)

Incentives for new investments, Malaysia Investment Development Authority (MIDA). Retrieved September 2,2021 from https://www.mida.gov.my/setting-up-content/incentives/

LS. Yee, H. WaiMun, T. Zhengyi, LJ. Ying, and Xin KK., (2016). Determinants of Export: Empirical Study in Malaysia. Journal of International Business and Economics, June 2016, Vol. 4, No. 1, pp. 61-75. http://jibe-net.com/vol-4-no-1-june-2016-abstract-6-jibe

Malaysian Investment Development Authority (MIDA). Retrieved September 3, 2021 from https://www.mida.gov.my/why-malaysia/investment-statistics/

Maximilian Philip Eltgen, Yan Liu, and Yew Keat Chong (2021). Malaysia - Attracting superstar firms in the electrical and electronics industry through investment promotion.

Mustafa Tahir Demirsel, Adem Ögüt and Mehmet Mucuk (2014). "The Effect Of Foreign Direct Investment On Economic Growth: The Case Of Turkey", Proceedings of International Academic Conferences 0702081, International Institute of Social and Economic Sciences.

Narayan, S. and Narayan, P.K. (2005), An empirical analysis of Fiji's import demand function. Journal of Economic Studies, Vol. 32 No. 2, pp. 158-168. https://doirg/10.1108/01443580510600931

Pesaran M.H. and Shin, Y. (1999). An Autoregressive Distributed Lag Modelling Approach to Cointegration Analysis. Econometrics and Economic Theory in the 20th Century: The Ranger Frisch Centennial Symposium.Cambridge: Cambridge University Press; 1999.

Pesaran, M.H., Shin, Y. and Smith, R.J. (2001). Bounds testing approaches to the analysis of level relationships.Journal of Applied Economics, Vol. 16, pp. 289-326. Retrieved from https://onlinelibrary.wiley.com/doi/10.1002/jae.616

S. Thomsen and F. Nicolas (1999). Foreign Direct Investment and Recovery in Southeast Asia: OECD Proceedings Paperback, July 1999. Retrieved from https://www.oecd.org/investment/investmentfordevelopment/40818364.pdf

Shrestha, M. B. and Bhatta, G. R., (2018). Selecting Appropriate Methodological Framework for Time Series Data Analysis. The Journal of Finance and Data Science 4 (2018) 71 – 89. Retrieved from https://doi.org/10.1016/j.jfds.2017.11.001

World Semiconductor Trade Statistics (2021), The Worldwide Semiconductor Market was up 6.8 percent in 2020 and is expected to show a double-digit growth of 10.9 percent in 2021. Retrieved September 3, 2021 from https://www.wsts.org/76/103/WSTS-has-published-the-Q4-2020-market-figures

Wong, K. N., and Tang T. C., (2007). Foreign Direct Investment and Electronics Exports: Exploratory Empirical Evidence from Malaysia's Top Five Electronics Exports. Monash University Malaysia. Article published in Economic Bulletin in May 2007. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?-doi=10.1.1.486.3882&rep=rep1&type=pdf

World Bank Group (2019). Doing Business 2020. Washington, D.C. https://www.doingbusiness.org/en/reports/global-reports/doing-business-2020

World Bank Group (2017). Global Investment Competitiveness Report 2017/2018. Doing Business 2020.Washington, D.C. http://hdl.handle.net/10986/28493

Source: Department of Statistics, Malaysia

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Continuous Versus Discrete Calibration Sources: Considerations For Use

A White Paper by Optronic Laboratories, LLC
October 2021

1.0 Introduction

Radiometric and photometric calibrations have relied on lamp-based sources of radiant flux for decades. Lamps that produce a broad continuum of radiation serve as spectral calibration sources for systems measuring a myriad of radiometric or photometric quantities, while spectral line lamps that have intrinsically sharp spectral features can be used as a wavelength calibration source. Since the mid-20th century, lamp-based calibration standards have proven themselves as dependable tools for calibrating light sensors, imaging cameras, solar cell or detector characterisation, and more.

Recently, rapid advancements in the field of solid-state lighting have presented opportunities for the use of LED-based systems for calibrations typically performed with lamp-based sources. Their highly efficient and long-lived performance, rapid power up to stable output, and compact size have made LED-based sources an attractive alternative for lamp-based calibration systems. However, replicating the smooth and broadband emission of lamps poses a challenge for LED-based calibration systems.

The purpose of this information sheet is to explore the feasibility of using LED based sources of radiant flux for calibrations that have been ubiquitously performed by lamp-based standards. A comparison of the two methods will be discussed, as well as the recent offerings by Optronic Laboratories, LLC utilising LEDs in lieu of lamp-based systems.

2.0 Lamp-Based Calibration Systems

The light that is emitted from incandescent lamps (such as tungsten-halogen lamps) is produced when the thermal energy of a substance at a temperature above absolutely zero is released in the form of photons. While this means that everything is constantly emitting light,that light only falls into the visible region of the electromagnetic spectrum when materials reach hundreds of degrees Centigrade. This emission process is very well understood, and the emission from these lamps is considered to be absolute.

In applications involving full radiometric or photometric system calibration, lamp-based components are often bundled together to obtain the performance and versatility required. An example would be using a tungsten-halogen lamp that is powered by a precision current source to produce a broad spectral profile whose absolute intensities are known to within a couple percent. Fig.1 shows the relative output achieved for the OL 455 quartz tungsten-halogen based calibration standard. Bundling an atomic emission lamp such as Hg, Kr, Ar, etc. with it allows calibration of the wavelength scale, as well as a spectral response calibration of the system as a whole. Furthermore, including optical filters, gratings, or other optical components allow spectral shaping or spectral selection within the emitted spectrum.

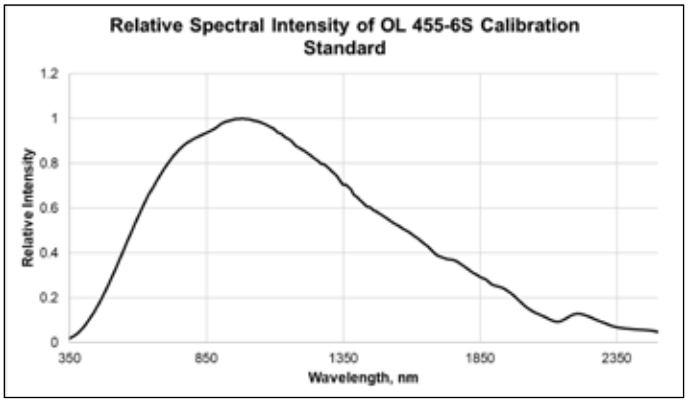
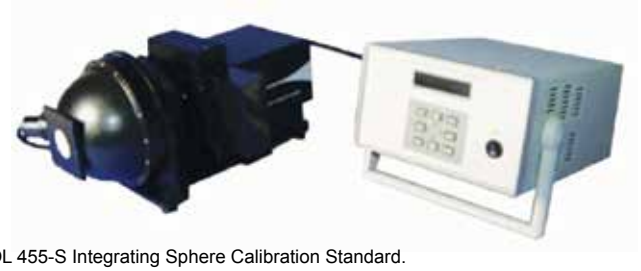


Figure 1: Relative optical output of OL 455-6S Calibration Standard.



OL 455-S Integrating Sphere Calibration Standard.

The use of lamps for calibration offers several advantages. The broad spectral output of a tungsten-halogen lamp facilitates the calibration of a spectral system starting as low as 300nm in the UV all the way out into the MWIR region. Adjusting the operating current and/or the use of spectral filters allows a range of colour temperatures to be achieved.

The upfront cost of a lamp-based calibration standard can vary greatly from the low thousands up to the low tens of thousands of dollars, depending on the performance required; however, replacement lamps are relatively inexpensive and available from a large supply base. In addition, there exists a large number of suppliers fluent in the installation, calibration, and service of lamp-based calibration standards.

The greatest drawback of most lamp-based calibration systems is the short lifetime of the lamps themselves. Supply and calibration companies typically express these operating lifetimes on the order of tens of hours which are highly dependent on the current used to drive the lamps. And while the spectral output and stability of these lamps

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	MINIMUM		MAXIMUM		MINIMUM		MAXIMUM						MINIMUM		MAXIMUM	
in	mm	in	mm	in	mm	in	mm	in	kg/m	kg/ft	lb/ft	PER INCH	mm	in	mm	in
¾	18.76	0.7387	19.05	0.7500	1.52	0.060	1.63	0.064	0.713	0.217	0.479	16	12.70	0.5000	14.29	0.5625
1	25.11	0.9887	25.40	1.0000	1.52	0.060	1.63	0.064	0.972	0.296	0.653	16	15.88	0.6250	17.46	0.6875
1 ¼	31.46	1.2387	31.75	1.2500	1.52	0.060	1.63	0.064	1.240	0.376	0.830	16	17.46	0.6875	19.05	0.7500
1 ½	37.80	1.4880	38.10	1.5000	1.73	0.068	1.83	0.072	1.680	0.511	1.130	14	19.05	0.7500	20.64	0.8125
2	50.50	1.9880	50.80	2.0000	1.93	0.076	2.03	0.080	2.510	0.765	1.690	14	22.23	0.8750	23.81	0.9375

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NORMINAL SIZE	OUTSIDE DIAMETER		WALL THICKNESS	CALCULATED WEIGHT WITH COUPLER		PITCH	LENGTH OF THREADS	
	MINIMUM	MAXIMUM		MINIMUM	MAXIMUM		MINIMUM	MAXIMUM
mm	mm	mm	mm	kg/m	kg/ft	mm	mm	mm
20	19.7	20.0	1.6 ± 0.15	0.643	0.783	1.5	13	15
25	24.6	25.0	1.6 ± 0.15	0.811	0.995	1.5	16	18
32	31.6	32.0	1.6 ± 0.15	1.069	1.301	1.5	18	20

MS IEC 61386-1 / MS 61386-21 CONDUIT SYSTEMS FOR CABLE MANAGEMENT

NORMINAL SIZE	OUTSIDE DIAMETER		INSIDE DIAMETER	EXTERNAL THREAD LENGTHS
	MINIMUM	MAXIMUM	MINIMUM	MINIMUM
mm	mm	mm	mm	mm
20	19.7	20.0	16.2	14.0
25	24.6	25.0	21.1	17.0

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are well known, minute changes in these operating conditions result in large deviations in the spectral output. These operating conditions extend beyond the operating current to the environmental conditions in which the lamp is being used. As previously mentioned, the spectral performance of a lamp at a given set of operating conditions are only valid for a finite period of time, after which it can no longer be guaranteed.

Another disadvantage of lamp-based systems is the relatively long warm-up times required to achieve the prescribed optical performance. Most lamps operate at relatively high temperatures, and therefore require a substantial warm-up period (typically at least 15 minutes) to achieve thermal equilibrium with the environment. After this initial cold start-up time, it is often required to change the calibration system by adding/removing optical filters or switching to a different driving current, either of which require the system to re-establish thermal equilibrium prior to use. Furthermore, if switching from one lamp-based standard to another is needed, additional components may be required that introduce more points for the system as a whole to deviate from the prescribed behaviour or even fail altogether.

Lamp-based systems are also sensitive to mechanical shock. The physical positioning of the lamp and the alignment of any associated optical components are highly critical to the optical performance. A change to either results in substantial deviations to the optical performance and, as a result, require extreme caution when handling, moving, and operating lamp-based systems.

While it has been discussed that lamp-based systems are widely established and understood, there is little work being done to further develop lamp-based systems. The resources that are required to produce these lamps are also limited, meaning that obsolescence is inevitable.

3.0 Led-Based Calibration Systems

Light-emitting diodes (LEDs) are comprised of a p-n junction diode that emits light when a current is applied. At this p-n junction, electrons re-combine with electron-deficient areas referred to as 'holes' and release energy in the form of photons. The spectral emission from diodes is a function of the electronic structure of the materials making up the diode as well as the dopant levels present.

Unlike lamp-based systems whose technologies are destined for obsolescence, solid-state technology has rapidly evolved. According to Haitz's Law, the optical output of LEDs has doubled every 36 months since the mid-20th century and will continue to do so. The result will be increased performance and affordability for many years to come.

The spectral output of LEDs is particularly narrow, such that UV or blue LEDs can be used to excite phosphors, which in turn emit a broad continuum similar to that of lamp-based systems, albeit over a much more limited spectral range. Figure 2 shows the spectral output of the OL 458 Calibration Standard that utilises blue LEDs to excite a phosphor that emits a broad continuum over the visible spectrum.

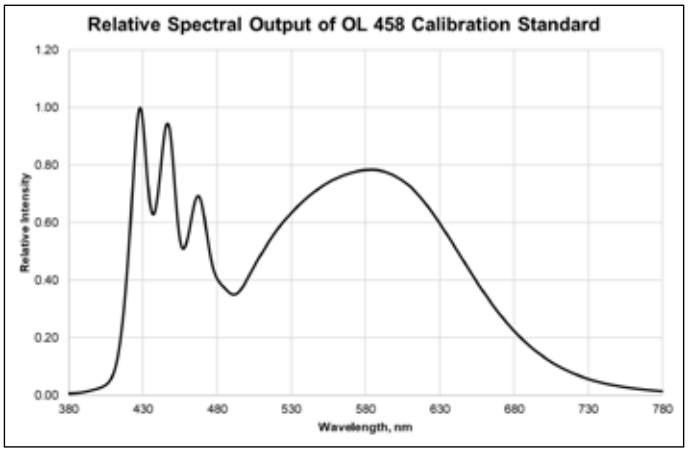
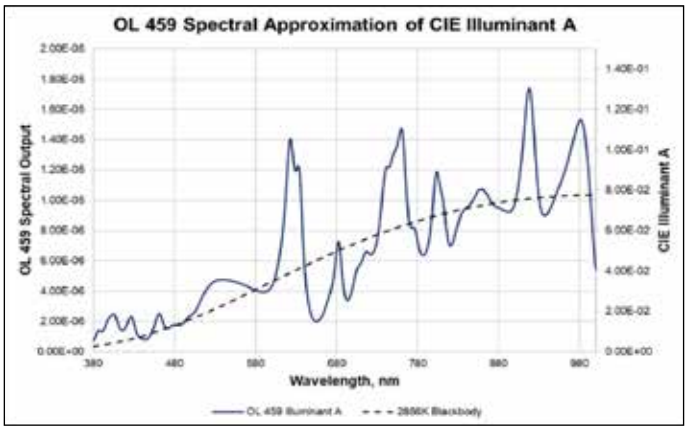


Figure 2: Relative optical output of OL 458 Calibration Standard.

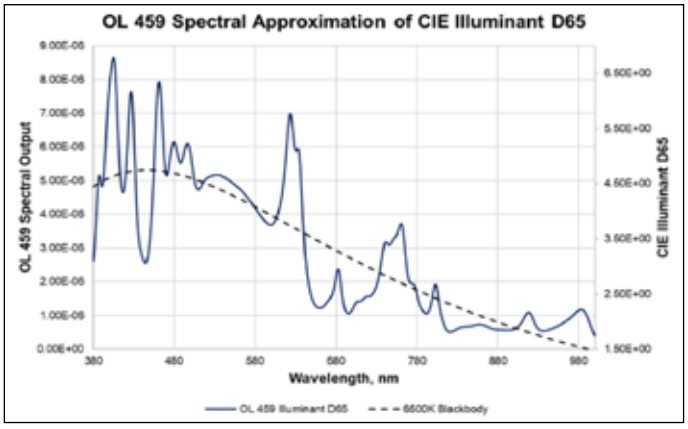
OL 458-4 White LED-Based Calibration Standard.

OL 459 Tunable LED Standard.

The manner in which LEDs are powered offers the possibility of increased versatility over lamp-based systems. Whether controlling individual LEDs or LED channels/groups, spectral shape and control of LED-based systems is achievable without the addition of optical filters, gratings, or changes in driving current required by their lamp-based counterparts. Figs. 3a and 3b show the spectral approximations for CIE illuminants A and D65, respectively, achieved by controlling the 5 independent channels of the OL 459 Tunable LED Standard.



(a)



(b)

Figure 3: (a) OL 459 LED calibration standard approximation of CIE Illuminant A. (b) OL 459 LED calibration standard approximation of CIE Illuminant D65.

One of the most promising advantages of LED-based systems is the significantly increased lifetime of LEDs relative to lamps. Lifetimes of LED (typically measured as the amount of time it takes for half of the devices to drop to 70% output) is on the order of tens of thousands of hours. This alone has major implications on the cost and frequency of maintenance but more importantly on the amount of downtime required for maintenance and calibration. Additionally, the warm-up of LEDs is practically immediate upon start-up relative to lamps. This means the cold start-up time is usually limited by the thermal equilibration of monitoring detector/photometer of the devices. Furthermore, once thermal stability is achieved, switching from one operating condition to another is virtually instantaneous.

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Unlike lamp-based systems, the shock sensitivity of LEDs is vastly superior. LED-based systems are inherently more rugged and less susceptible to costly repairs and re-calibrations.

While the narrow-band emission of LEDs allows for the excitation of phosphors or wavelength calibration capabilities, it poses a problem when performing broadband system calibration. To achieve broadband coverage, several discrete LEDs at various wavelengths are required. This can very quickly result in a substantial upfront cost. Furthermore, the narrow peaks of LEDs, even if super-im

posed on a broadband background, can result in noticeable spectral mismatch when performing spectral calibrations of broadband radiometers/photometers.

The optical output of LEDs can also vary significantly with electrical and environmental changes. As such, extra precautionary measures need to be taken to ensure a stable environment for calibration and measurement. LEDs are also highly directional, so when using several discrete LEDs, often an integrating sphere is needed in order to produce a uniform output.

4.0 Summary

Lamp-based calibration systems have been the method used in industry for many decades. For several applications, lamps still pose a cost-effective means of calibration. The mechanical and thermal characteristics of lamp-based systems carry certain hidden costs for repair, maintenance, and calibration over time. In addition to the monetary cost, lamp-based systems can also impose a massive inconvenience in terms of measurement down-time as lamps get replaced and systems get re-calibrated.

LED-based calibration standards offer noticeable advantages over lamp-based systems when it comes to durability and versatility. And although the upfront cost of an LED-based system can be higher than a lamp-based system, the durability and substantial lifetime of LEDs relative to lamps can offer a significant advantage, particularly when frequent use is required. Continued development and advancements in solid-state lighting technology offer future optimism for the established use of LED-based calibration standards in the field of spectro-radiometry.

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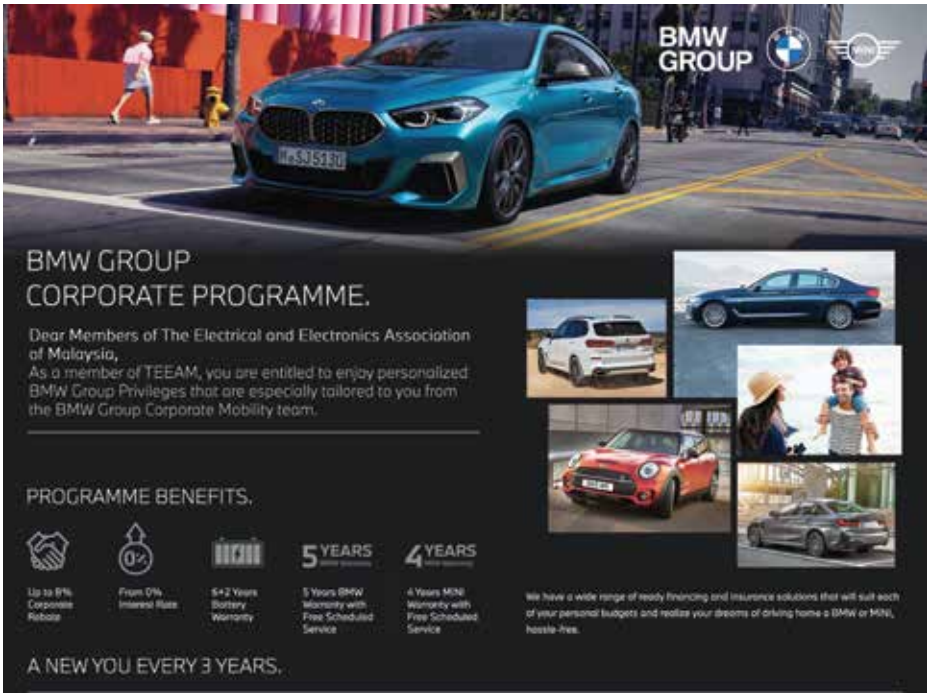

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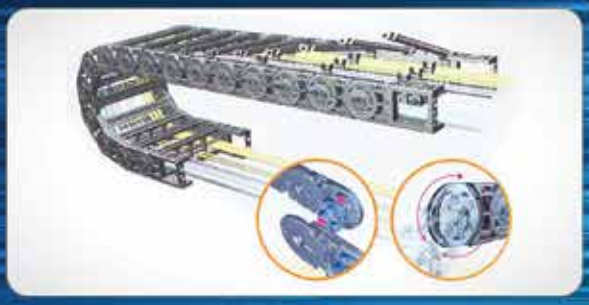

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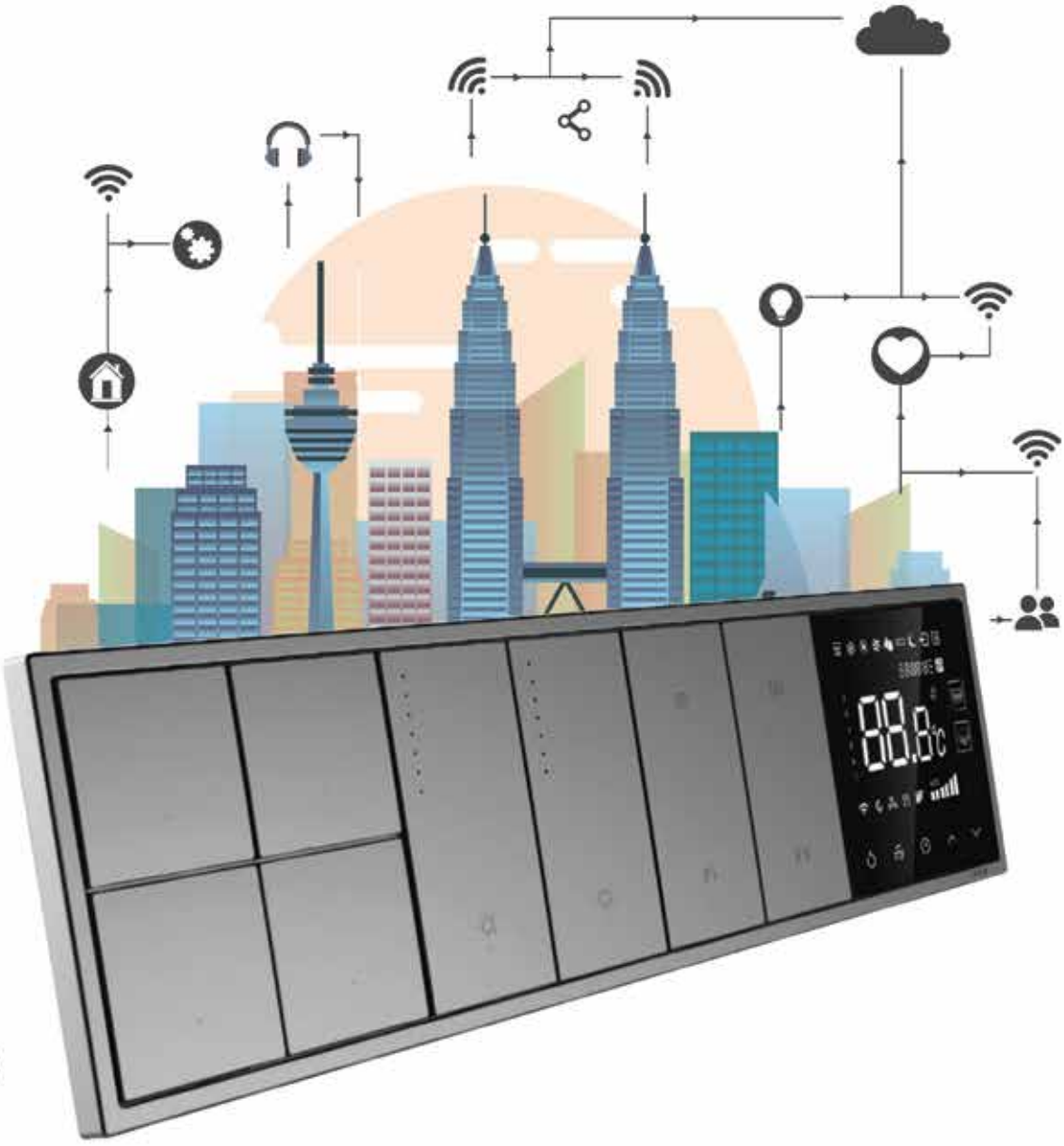

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A New Trend in Energy Storage Systems: Second-Life Lithium-Ion Batteries

Lee Jia Woon, Mohammad Hussein Saleh Mohammed Haram,
Ir. Assoc. Prof. Dr. Gobbi Ramasamy and Ir. Lee Yuen How

1.0 Introduction

Due to environmental concerns, the rising popularity of transport electrification has been significant in the transportation sector [1]. The electrification of transport is widely known as Electric Vehicles (EVs), which run on electric motors instead of the conventional internal combustion engine. It uses a large traction battery pack to power up the electric motor and must be charged when the battery pack is draining. The battery pack, which is one of the essential components of EVs, can no longer provide the driving range and performance required within five to eight years of EVs' usage, depending on driving behaviour, frequency of driving, and many others. For instance, driving behaviour, such as frequent ramping and braking, could degrade the battery faster. However, these batteries still hold up to 70-80% of their initial rated capacity, which might be valuable to serve for less power-hungry second-life applications [2].

2.0 Second-Life Batteries (SLBs)

As these batteries from the EVs reach the end of their useful life, automotive companies will be confronted with the decision to re-cycle or discard them. Conventionally, in the region where there are no market structures or regulations for these EV batteries, they will be discarded and stored in the landfill, without value. Today, with this new concept of re-purposing the discarded EV batteries, as illustrated in Figure 1, these batteries' lifespans can be extended by utilising them for second-life applications. Note that re-used EV batteries is commonly known as Second-Life Batteries (SLBs).

In second-life applications, the SLB is generally charged and discharged at low rates and operates in a controlled environment, and secured working space. In Europe, some automotive manufacturers have installed SLBs primarily in different kinds of Battery Energy Storage Systems (BESSs), ranging from residential systems to grid-scale solutions [3]. Re-purposing these discarded EV batteries as a means of extending the lifespans of these batteries has been seen as the potential to create a new stream of revenue for individuals or businesses, ranging from the battery re-purposing company to the recycler of batteries. EV owners will be the direct individuals who will benefit by obtaining the recovery value of their discarded batteries to subsidise the charges to replace a new battery.

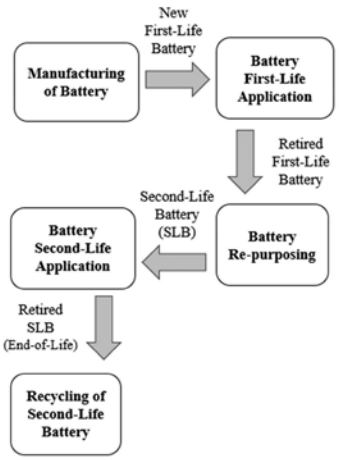

Figure 1: New Concept of Battery Life Cycle

Secondly, re-purposing these discarded batteries could emerge as a new industry and business opportunity. These parties are responsible for adapting the different steps of the EV batteries' value-chain, such as collection, assessing, re-packaging, and waste batteries treatment. These steps are the crucial steps to ensure that the performance, quality, and safety are met before shipping out for second-life applications' use [4]. In fact, collecting and re-cycling discarded batteries from EVs has been practised in the Netherlands since 2016. In 2018, Nissan worked together with Sumitomo, a Japanese conglomerate company, to set up Japan's first Lithium-ion Batteries (LiBs) re-furbishing company, named 4R Energy Corporation, in Namie, Japan [5].

Thirdly, and most importantly, the SLB users would be the largest shareholder. Instead of purchasing new LiBs as an Energy Storage System (ESS), they can choose to purchase SLBs as ESSs at a lower price, which will be performing nearly the same as a new LiB or even better than a new lead-acid battery. However, without the demand from this individual or businesses of SLB users, the EV batteries' value-chain would possibly halt at the end of their first life. Lastly, the batteries re-cycler is one of the businesses that could be benefited from this EV batteries' value-chain. During the re-purposing process of these discarded EV batteries, the unusable batteries will be further re-cycled to yield valuable elements, such as copper and aluminium.

3.0 World's First Manufacturing Standard for Re-Purposed SLBs

A standardised and recognised definition of "second-life application" within the regulatory framework could support future strategies in extending the batteries' lifespan and creating new investments opportunities. The Governments, policy-makers, industries, and researchers should set their attention on establishing the standard and policy to govern such a promising sector. Standardising the assessment of SLBs during the battery re-purposing process is of utmost importance as the accuracy of assessing the discarded EV batteries affects the performance of SLBs in second-life applications.

That being the case, the Underwriters Laboratories (UL) 1974 Standard has been approved in 2018, serving as the first manufacturing standard that evaluates the method used to determine the safety and performance of discarded EV batteries' modules and cells for second-life applications [6]. This manufacturing standard aims to reduce the potential safety risk and provide a uniform set of standards to evaluate the discarded EV batteries intended for second-life stationary storage applications. In fact, 4R Energy Corporation is the first organisation worldwide to be certified by UL 1974 as a third-party testing and certification organisation [6]. Aside from UL 1974, there is a standard under development known as SAE J2997 by SAE International, previously known as the Society of Automotive Engineers. Currently, this standard is under development; however, the content of this standard is to standardise the tests to identify the safe re-use of batteries, which will take account of the transportation, labelling, and State of Health (SoH) for reliable usage of SLBs [7].

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4.0 The Feasibility and Economics of SLBs

Depending on the second-life applications, the lifespan of the SLB may vary. The lifespan and degradation rate of SLBs are affected by many factors, such as the temperature, change in the batteries' internal resistance, the cells' nominal voltage, current transfer rate, and Depth of Discharge (DoD). Unlike the new batteries where the degradation rate is almost steady and easy to predict, in SLBs, due to the battery's internal changes and increased chemical reactions, it becomes challenging to estimate the SLB's remaining lifespan and degradation rate accurately [1], [8]. However, it was found that setting a lower DoD range of the SLB will prolong the lifespan of that SLB in second-life applications. By lowering the DoD from 80% to 50% DoD, the remaining lifespan would double for the SLB in the second-life application before reaching the End of Life (EoL) point [9].

Despite the proven technical feasibility of SLBs, the economic benefits remain in question. If the environmental benefits are overlooked, will consumers consider SLBs over new LiBs from an economic perspective? For the energy consumers to favour SLBs over new LiBs, an economic benefit must be proven. The SLB selling price is dependent on the used battery price, the re-purposing cost, and the profit margin. The used battery price should consider the current selling price of new LiBs, SLB's SoH, the re-purposing cost, and some discount factors. Depending on the condition of the used battery, the discount factor could be a factor given by the EV owner or the EV manufacturer to reduce the cost of the used battery in order to be economically attractive and to therefore encourage the use of SLBs. Thus, the used battery price can be estimated using Equation 1 below.

$$C\_U=(C\_N f\_H-C\_R)(1-f\_D) \quad \text{Eq (1)}$$

Where CU - Cost of the used battery in the nth year, CN - Cost of the new battery, fH - SoH* of the battery in the nth year, CR – Re-purposing Cost and fD - Discount factor

* SoH is determined through assessment and is presented in percentage form. If no assessment is done, it could be assumed as 3-4% degradation per year of EV usage and could be computed using Equation 2, where r is the degradation rate, and n is the number of years of EV usage.

$$f\_H=(1-r)\hat{}n \quad \text{Eq (2)}$$

Therefore, the selling price of an SLB could be computed using Equation (3), where C_O is the overhead cost, and M is the mark-up percentage.

$$C\_SLB=(C\_U+C\_R+C\_O)(1+M) \quad \text{Eq (3)}$$

As indicated in Equation 3, the re-purposing cost, overhead cost, and the desired mark-up percentage will further hike up the SLB selling price range. However, Government initiatives to encourage the use of SLBs by providing incentives could further lower the cost of the used battery, hence, making the selling price of SLBs more economically beneficial. The Government support is driven by the potential environmental damage represented by the Global Warming Potential (GWP) and waste of electricity, water, and ground resources during the manufacturing stage of new LiBs, and the discarding of the used batteries. Considering the complexity of evaluating the economics of SLBs, the authors in [9] proposed a Benefit-Cost Ratio (BCR) which compares new LiBs and SLBs. It was found that SLBs are more economical if the selling price is below 60% of the new LiBs' price.

At present, the selling price of the SLBs is traded between $38/kWh to $175/kWh each, depending on market and application, as compared to a new LiB, which costs around $200/kWh to $1,000/kWh [10]–[12]. The price of new LiBs keep decreasing annually, and, as a result, it is estimated that the selling price of an SLB will reach $43/kWh in 2030 [12]. However, the range is quite broad, causing uncertainties in SLB's economics, and therefore further research and studies are highly recommended.

5.0 Conclusion

In conclusion, the SLB, as an ESS, would provide an efficient replacement for new LiBs both economically and environmentally in the coming years. However, the technology is still under development and requires more research to be enabled to the highest level. Even with the presented studies, it could be noticed that the SLB is already a feasible option compared to systems with new LiBs. With the presence of SLB standards, possible automation of the re-purposing process, and Governmental incentives, the price of SLBs could drop significantly, making it a much more favourable choice, both economically and environmentally.

6.0 SLB Research Activities in Multimedia University, Cyberjaya

At Multimedia University (MMU), the team of PV Energy Storage Lab under the Centre for Electrical Energy and Automation (CEEA), Faculty of Engineering, Cyberjaya, is pro-actively working on the performance analysis of SLBs as ESSs for a PV system and other possible applications such as maximum demand shaving, 4G/5G base stations, and others. This exciting project is funded by the Malaysia Electricity Supply Industry Trust Account, Ministry of Energy and Natural Resources, Malaysia.

Figure 2: EVs and their Discarded Batteries in MMU

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7.0 References

[1] *H. Farzin, M. Fotuhi-Firuzabad, and M. Moeini-Aghtaie, "A Practical Scheme to Involve Degradation Cost of Lithium-Ion Batteries in Vehicle-to-Grid Applications," IEEE Trans. Sustain. Energy, vol. 7, no. 4, pp. 1730–1738, 2016.*

[2] *L. Ahmadi, A. Yip, M. Fowler, S. B. Young, and R. A. Fraser, "Environmental Feasibility of Re-Use of Electric Vehicle Batteries," Sustain. Energy Technol. Assessments, vol. 6, pp. 64–74, 2014.*

[3] *H. E. Melin, "The Lithium-Ion Battery End-of-Life Market-A Baseline Study," 2018.*

[4] *D. Kamath, S. Shukla, R. Arsenault, H. C. Kim, and A. Anctil, "Evaluating the cost and carbon footprint of second-life electric vehicle batteries in residential and utility-level applications," Waste Manag., vol. 113, no. xxxx, pp. 497–507, 2020.*

[5] *S. Bobba et al., "Sustainability Assessment of Second Life Application of Automotive Batteries (SASLAB)," 2018.*

[6] *"J2997 (WIP) Standards for Battery secondary use - SAE International," 2020. [Online]. Available: https://www.sae.org/standards/content/j2997/.*

[7] *Underwriters Laboratories, "UL Issues World's First Certification for Repurposed EV Batteries to 4R Energy," 2019.*

[8] *B. Xu, J. Zhao, T. Zheng, E. Litvinov, and D. S. Kirschen, "Factoring the Cycle Aging Cost of Batteries Participating in Electricity Markets," IEEE Trans. Power Syst., vol. 33, no. 2, pp. 2248–2259, 2018.*

[9] *I. Mathews, B. Xu, W. He, V. Barreto, T. Buonassisi, and I. M. Peters, "Technoeconomic Model of Second-Life Batteries for Utility-Scale Solar Considering Calendar and Cycle Aging," Appl. Energy, vol. 269, no. April, p. 115127, 2020.*

[10] *H. Ambrose, A. Kendall, M. Slattery, and T. Steckel, "Battery Second-Life: Unpacking Opportunities and Barriers for the Reuse of Electric Vehicle Batteries," 2016.*

[11] *G. Reid and J. Julve, "Second Life-Batteries as Flexible Storage for Renewables Energies," Ger. Renew. Energy Fed., 2016.*

[12] *C. E. Storage, "The Lithium-Ion Battery End-Of-Life Market – A Baseline Study," pp. 1–11, 2018.*

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R. Gobbi *received the B.Eng (Electrical), MSc (Tech) and PhD (Eng) degrees in 1998, 2001 and 2008 respectively. He has been associated with technical education for more than twenty years. He is a Consultant providing solutions for many problems associated with electric motors, drives system and energy management for various industries. His research interests are in the reliability of electric motors, motor drives system and second life batteries for energy storage system. Dr Gobbi is a corporate member of the Institution of Engineers Malaysia, a Professional Engineer registered with the Board of Engineers, Malaysia (BEM), Registered Electric Energy Manager, Energy Commission and a Senior Member of IEEE, US.*

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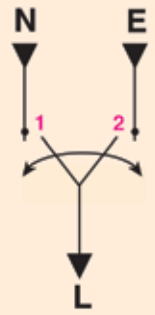
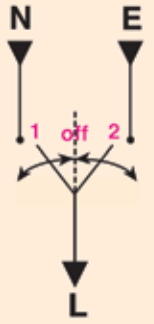
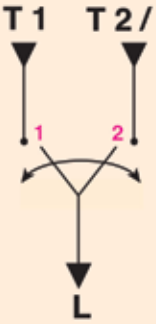
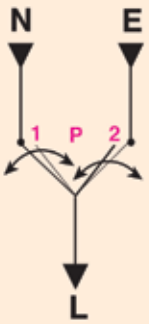
ATS 2 pole, 3 pole, and 4 pole	 Open Transition Without "OFF" position	 Open Transition With or Without "OFF" position	 HIGH SPEED Open Transition With "Sync Check" feature	 Close Transition With "Sync check" feature
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New Members

The following new members have been approved and accepted by the TEEAM Council from September 2021 - January 2022. A warm welcome to all the new members and special appreciation is extended to those who introduced these new members. For those who are not yet members, why wait? Join us and find out how our Association can offer our value-added services to you and your highly esteemed Companies!

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Tel: +603-7954 0355
Email: tvun@sabahoceanic.com
Website: www.sabahoceanic.com
Contact Person: Mr Thomas Vun
Business: Supplier of customised batteries for portable power solutions, battery chargers, battery connectors & battery accessories.

JET Engineering Solutions Sdn Bhd
R-03A-22, Emporis, Persiaran Surian,
Kota Damansara,
47810 Petaling Jaya, Selangor Darul Ehsan.
Tel: +6016-220 9022
Email: info@jetengsolutions.com
Website: //www.linkedin.com/company/jet-engineering-solutions-sdn-bhd/
Contact Person: Mr Justin John Papu
Business: Engineering services, smart grid, SCADA, automation, etc.

Insteel (Malaysia) Sdn Bhd
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Off Persiaran Tengku Ampuan,
40400 Shah Alam, Selangor Darul Ehsan.
Tel: +603-5192 8003 Fax: +603-5192 1023
Email: info@insteelworld.com
Website: www.insteelworld.com
Contact Person: Mr Ashton Lim Chee Yong
Business: Galvanized steel conduit and fittings manufacturing.

Magnum Pro Marketing Sdn Bhd
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75250 Melaka.
Tel: +606-351 3786 Fax: +606-351 3780
Email: magnumpro.marketingsdnbhd@gmail.com
Website: www.magnumcable.com.my
Contact Person: Ms Liow Lih Na
Business: Trading of PVC cable/cable support.

KW Electric & Lighting Sdn Bhd
No. 89, Jalan 20/7, Paramount Garden,
46300 Petaling Jaya, Selangor Darul Ehsan.
Tel: +603-7877 9897
Email: kwelsb91@gmail.com
Contact Person: Mr Chong Kwong Fah
Business: Electrical & lighting trading.

Dahari Bin Mat Siran
No. 34, Jalan Nova U5/75B,
Subang Bestari,
40150 Shah Alam, Selangor Darul Ehsan.
Tel: +6016-227 8080
Email: daharisiran@yahoo.com
Business: Electrical engineering services.

OTT Electrical Engineering (M) Sdn Bhd
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Taman Permai Impian,
70300 Seremban, Negeri Sembilan Darul Khusus.
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Email: inquiry@ottelectrical.com.my
Website: www.ottelectrical.com.my
Contact Person: Mr Ong Jia Le
Business: Electrical engineering – wiring & fittings.

Pawalite Marketing Sdn Bhd
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Tel: +603-5888 9609 Fax: +603-5879 9887
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Website: www.pawalite.com.my
Contact Person: Ms Kerk Pei Nee
Business: Lighting wholesaler & supplier.

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Tel: +603-2300 8010 Fax: +603-7610 1745
Email: clchan@pekatgroup.com
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Contact Person: Mr Chan Chin Loon
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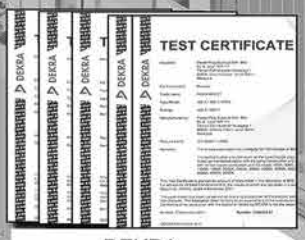

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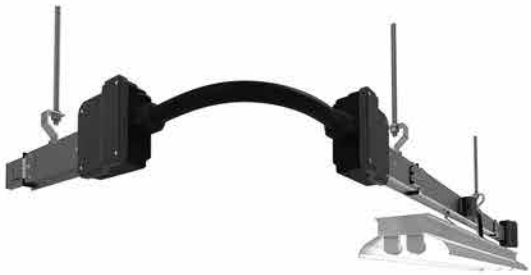

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(TERASAKI ELECTRIC (M) SDN BHD)
Ambition: Accountant
Interest/Hobby: Cycling

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ANDREA LEE HUI WEN
(FURUTEC ELECTRICAL SDN BHD)
Ambition: Mathematician
Interest/Hobby: Drawing & Music

CHIN FUI CHING
(SANDAKAN ELECTRICAL ENGINEERING ASSOCIATION-SABAH ELECTRICAL SERVICES)
Ambition: Doctor
Interest/Hobby: Community Service & Swimming

The 2021 TEEAM Academic Excellence Awards acknowledges the achievements of students in the 2020 academic year. Each year, TEEAM honours members' children and their employees' children for their excellent academic achievements in the public examinations, namely, UPSR, PT3, SPM, UEC Junior Middle Level, IGCSE O-Level, STPM, UEC Senior Middle Level and Cambridge A-Level. The selection is based on criteria determined by TEEAM's Education, Research & Awards Sub-Committee. For this year, TEEAM Academic Excellence Awards were presented to five successful recipients. Each award comprised a Recognition Certificate and Cash value ranging from RM800.00 to RM1,000.00. Usually, the awards were conferred in a special ceremony but due to COVID-19 restrictions, and also for the safety of everyone, TEEAM was not able to celebrate this auspicious event in the usual way. Nevertheless, TEEAM wishes all award recipients to stay focused on their studies and to continue to perform at the absolutely highest level academically. We at TEEAM sincerely extend our warmest congratulations to all the above recipients for their stellar academic achievements. Well done and stay safe everyone!

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