



SUARA TEEAM



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MESR 12/2022 page 73



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

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(PK...PB5 125A)

Interlocked Switched Socket-Outlets



TM...SP

Plugs - Low voltage from 50V to 690V

IP44



PE...PP 16A-32A

IP67



Couplers 16A-32A



PE...PQ 16A-32A



SIPW...SV



PE...SV 16A-32A



PEW...PP 16A-32A



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C-Type



IP Enclosure C-Type



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Hoods with 1 level

CNE-CSE 16 Poles



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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



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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



Happy Chinese New Year of the Rabbit! The sign of the Rabbit is an auspicious symbol of longevity, peace, and prosperity in Chinese culture. 2023 is predicted to be a year of hope!

Considering external headwinds and tightening monetary policy in many economies worldwide, MIDF (Malaysian Industrial Development Finance Berhad) said that it foresees the Malaysian GDP growth to moderate to +4.2% for 2023. The softening growth, it added, will be mainly due to a deceleration in external trade performances as a result of slower global demand.

"The Government will be focusing on the Services Sector including Green Technology, Digital Economy and Small and Medium Enterprises (SMEs) in the upcoming 2023 Budget", said The Right Honourable (Yang Amat Berhormat) Prime Minister, Datuk Seri Anwar Ibrahim.

Energy efficiency and low carbon initiatives will never go out of fashion. IR 4.0 will continue to drive digitalisation in many areas of developments. We are indeed glad to see financing options being made available by the banking sector.

Congratulations to the Organising Committee on the success of The Electrical and Electronics Association of Malaysia's (TEEAM's) 70th Platinum Anniversary Dinner which will be held on 18 February 2023 at One World Hotel, Petaling Jaya. We wholeheartedly welcome all guests from near and far, and especially those from overseas. Come joyously celebrate our success with us!

Here's to a year of magnificent hope and abundant prosperity for one and all!

Regards,

Ir Chew Shee Fuee, KMN
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MITI Stands Ready to Help Malaysian Industries and Exporters Reap the Numerous Benefits of the CPTPP

MITI Media Release
22 December 2022

The Ministry of International Trade and Industry (MITI) is prepared to assist and support Malaysian industries, exporters and the Rakyat (i.e., Citizens), to reap the numerous benefits of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), which had come into effect on 29 November 2022 for Malaysia. The CPTPP's comprehensive scope includes traditional market access areas as well as factors such as Labour, Environment, State-Owned Enterprise, Government Procurement, Intellectual Property, Electronic Commerce, and Small and Medium Enterprises (SMEs).

Malaysia will benefit from preferential duty rates for goods that are exported to and imported from the eight (8) CPTPP member countries that have implemented this Agreement, i.e., Australia, Canada, Japan, Mexico, New Zealand, Peru, Singapore and Vietnam. Preferential duty rates that take effect immediately include:

- a) Full duty-free treatment to all Malaysian exports entering Singapore and Australia.
- b) Duty-free treatment on 96% of our exports and tariff lines to New Zealand presently, which is set to increase to 100% by 2024. Notably, Malaysian products across all sectors can enter the New Zealand market at zero duty, except for products such as textiles and processed wood which will become duty-free by 2024.
- c) Malaysian exports to Japan are subject to duty-free treatment for 86% of tariff lines, which will increase to 100% by 2038.
- d) Duty-free treatment for 88% of Malaysian tariff lines to Vietnam, set to be at 100% by 2033.

With the implementation of the CPTPP, Malaysian exporters will also benefit from duty-free treatment for the majority of tariff lines, to three new markets, i.e., Canada, Mexico and Peru, with whom Malaysia did not have any prior FTA. Canada will progressively eliminate duties on the remaining tariff lines by 2029 while Mexico and Peru by 2033. Notably, samples of Malaysian exports that clearly stand to benefit from zero duty include:

- a) Automotive parts and components, textiles, and footwear for the Mexican market.

- b) Cocoa-based products, rubber products, palm oil, and plastics for the Peruvian market.

To enjoy the CPTPP preferential tariffs, Malaysian exporters and producers must obtain the Certificate Of Origin (COO) issued by MITI. To qualify for the COO, Malaysian exporters to CPTPP countries are required to comply with the corresponding Rules Of Origin (ROO) requirements. Inputs and raw materials sourced from all CPTPP countries are recognised as originating content, thereby enabling companies to tap into diverse, more efficient and cost-effective regional supply chains. In facilitating ROO compliance, the Agreement also presents exporters with multiple choices of Regional Value Content (RVC) calculation methods. Information on electronic applications is available through a dedicated link on MITI's website: <https://fta.miti.gov.my/index.php/pages/view/71>

As for benefits for importers, industries and Malaysians in general, the key benefits include:

- a) Improved access to a wider range of competitively-priced raw materials and intermediate goods from CPTPP countries, which feed into finished products that are either exported, or sold domestically. As such, the Rakyat, as consumers, will also be able to enjoy quality products at competitive prices.
- b) Facilitation of capital flows into the country, which in turn will create quality and high-skilled jobs as well as economic opportunities for Malaysians.
- c) Better investment eco-system through capacity-building which will enhance Malaysia's attractiveness as an investment destination.
- d) Improved protection, predictability and transparency for Malaysians to invest in CPTPP countries.
- e) Malaysian professionals' ability to export their services through mutual recognition of professional qualifications, licensing or registration, through the Guidelines for Mutual Recognition Agreements (MRAs) or Arrangement for Professional Services.
- f) Better facilitation of cross-border movement of appropriately qualified professionals in several service-based sectors that are of key interest to Malaysia, such as accounting, engineering, architectural, legal, medical and dental services. In particular, the facilitation

mechanisms offered by the CPTPP will effectively reduce barriers encountered by business professionals at the borders of CPTPP countries. This will facilitate business travel or re-location on a temporary basis for specific categories of professionals involved in trade and investment activities.

Equally important are the technical assistance and capacity-building programmes incorporated in the Agreement, which will help develop local capabilities in sectors such as automotive, E&E, chemicals, optical and scientific equipment as well as medical devices.

As a full Party to the Agreement, Malaysia is now able to participate effectively in the on-going accession negotiations with the United Kingdom. In addition, given the imminent accession by China, Chinese Taipei, Ecuador, Costa Rica and Uruguay, Malaysia has the right to participate in the accession talks with these countries to obtain maximum benefits for the country.

All agencies within MITI's eco-system are also ready and well-equipped to assist Malaysian exporters and producers; investors and services' suppliers; business communities and professionals; as well as SMEs, to harness the full potential and benefits of the CPTPP.

About MITI

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 to help achieve the country's stated goal of becoming a developed nation.

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The United States National Committee (USNC) of the IEC (International Electrotechnical Commission) hosted the 86th General Meeting of IEC, and also the Meetings of Technical Committee (TC) and Standard Committee (SC) from 31 October to 4 November 2022 in San Francisco, USA. Business and industry leaders from around the world joined technology experts at the IEC General Meeting, which focused on the importance of standardisation for supporting global commerce and removing barriers to trade. International standards and conformity assessment enable businesses to access new markets and to innovate on products that can be consumed around the world. The standardisation work of the IEC also helps to protect both people and the environment. In this context, delegates learnt more about the IEC Global Impact Fund, launched earlier in February 2022, and how it helps to solve specific Environmental, Societal and Governance (ESG) challenges using international standards and conformity assessment.

One of the highlights of the 2022 IEC General Meeting was an interactive International Roundtable on the United Nations (UN) Sustainable Development Goals (SDGs). Distinguished speakers representing a broad range of stakeholders looked at how IEC standards and conformity assessment systems helped to meet the SDGs. They also examined the role and responsibility of corporations in addressing those goals. All SDGs are impacted in some way by standards, which in turn offer tools to help achieve those SDGs. Understanding how IEC standards and conformity assessment help to achieve the SDGs allows all stakeholders to leverage technologies and build a better world.

A whopping 2,000 participants from more than 90 countries attended these important meetings. Experts from around the world discussed recent technology updates, current challenges and arising vital issues. Ts. Lim

Sai Seong (TEEAM Honorary Treasurer), who represented both Malaysia CIE (MyCIE) and TEEAM, was a member of the Malaysian delegation, which was led by Dato' Ir. Ts. Abdul Razib Dawood (CEO of Energy Commission Malaysia – Suruhanjaya Tenaga), Chairman of IEC National Committee of Malaysia. The objectives of participation from the Malaysian delegation were to understand the latest developments of the electrical and lighting related standards in order to bring up the quality of Malaysian products, and also

to learn the future directions and strategies of IEC, as well as strengthening the relationships with the IEC's TC and SC members.

It was truly enlightening for all the delegates. The discussion and sharing sessions brought immense benefits to all in attendance. MyCIE and TEEAM wish to record our sincerely thanks and gratitude to IEC for organising such a meaningful and beneficial event. Thumbs-up to USNC of IEC for the warm hospitality and excellent arrangements, thank you indeed!



Malaysian delegation at the IEC Technical Committee Meeting.



Ts. Lim Sai Seong (MyCIE & TEEAM Honorary Treasurer) posing with Dato' Ir. Ts. Abdul Razib Dawood (CEO of Energy Commission Malaysia – Suruhanjaya Tenaga), Chairman of IEC National Committee of Malaysia.



Ts. Lim Sai Seong (MyCIE & TEEAM Honorary Treasurer), who represented both Malaysia CIE (MyCIE) and TEEAM, was a member of the Malaysian delegation.



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LED Expo Thailand 2022

LED Expo Thailand 2022 was successfully held from 21 to 23 September 2022 at the IMPACT Exhibition Centre in Bangkok, Thailand. Held alongside the Expo was the Smartech ASEAN 2022. The Expo showcased innovations and advanced digitalisation in the lighting, LED, energy-efficiency and smart technology industries. It was a great platform to reach out to the ASEAN market.

Organised by MEX Exhibitions Pvt. Ltd. and IMPACT Exhibition Management Co. Ltd., and hosted by the Electricity Generating Authority of Thailand (EGAT), this LED Expo drew a whopping 110 exhibitors --

whereat 350 business-matching meetings were also successfully held. TEEAM was honoured to be one of the Supporting Organisations. TEEAM Honorary Treasurer, Ts. Lim Sai Seong, visited the Expo as one of the VIP guests.

Thailand has successfully emerged as a key player in the global LED-lighting market and is home to South-east Asia's largest LED-lighting exhibition, attracting worldwide manufacturers and suppliers. The LED market is expected to grow at a CAGR (Compound Annual Growth Rate) of 23.38% from 2022 to 2027. The Thai economy is expected to grow at 4.3% in 2023 whereby its

GDP (Gross Domestic Product) is ranked 8th in Asia and 2nd in Southeast Asia. The Thai Government strongly supports the adoption of LEDs, with key Government agencies such as EGAT and the Provincial Electricity Authority (PEA), pro-actively promoting the use of LED-lighting in Thailand. The LED Expo Thailand strategically taps into this growing market and simultaneously serves as the industry-gathering platform not just for Thailand, but also for the surrounding ASEAN region. Set your calendar! The forthcoming LED Expo Thailand 2023 will be held at the IMPACT Exhibition Centre in Bangkok, Thailand, from 20 to 22 September 2023. See you there!

Snapshots at the LED Expo Thailand 2022



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Seminar on Compliance Requirements of Communication & Hybrid Electrical Equipment

SIRIM QAS International, in collaboration with the Malaysian Communications & Multimedia Commission (MCMC), successfully organised a Seminar on Compliance Requirements for Communication & Hybrid Electrical Equipment, on 30 August 2022 at Hotel Armada, Petaling Jaya. The Seminar aimed to enhance community awareness on regulatory requirements for communication and hybrid electrical equipment, certification, labelling and importation of these equipment. Investigation on the use of non-standard products was also highlighted to caution users.

The Seminar was supported by TEEAM, MACRA (Malaysian Air-Conditioning & Refrigeration Association) and MEADA (Malaysian Electrical Appliances Distributors' Association). Mr. Abdul Karim Abdul Razak, Head of the Technology and Standard Division of MCMC, commenced the session with a warm Welcome Remark. Amongst the esteemed panellists and their topic presentation were:



1. Regulatory Requirements for Communication & Hybrid Electrical Equipment, by Ts. Ahmad Zulhelmi Ab Hamid, MCMC.

2. Investigation on the Use of Non-Standard Communication & Hybrid Electrical Equipment, by Mr. Azli Azizi Abu Bakar, MCMC.

3. Certification Programme for Communications & Multimedia and Hybrid Products, by Mr. Ahmad Faizan Bin Hj. Pardi, SIRIM QAS International Sdn Bhd.

The Seminar was bursting at the seams with over 100 participants. An interactive Q&A Session capped off the highly-informative Seminar.

Snapshots of the Seminar on Compliance Requirements of Communication & Hybrid Electrical Equipment



3E XPO 2022 Philippines

TEEAM is extremely delighted to be entrusted by the Malaysia External Trade Development Corporation (MATRADE) with an Empowering Trade Association (ETA) Grant to host the Malaysia Pavilion at 3E XPO 2022 Philippines -- to offer Malaysian products and engineering services to our ASEAN neighbours and beyond. The Expo was successfully staged by the Institute of Integrated Electrical Engineers of the Philippines (IIEE) from 10 to 12 November 2022 at the SMX Convention Centre, Pasay City, Manila, Philippines.

The Malaysia Pavilion offered a wide range of products and services ranging from Busduct Solutions; Trunking Systems; Wires & Cables; LED Lightings; Lighting Poles; Earthings, Lightning & Surge Protection Systems; Testing & Inspection Services; Fittings & Accessories; Electric Instant

Water Heaters; Capacitors; Copper Products; Wiring Accessories; Electrical Conduits & Fittings; Switchgears; Transformers; and Arc Flash Protective Apparel.

The exhibiting members were Furutec Electrical, QAV Technologies, Pekat Engineering, Insteel Malaysia, Electrical Components, Multi-B, Gruppe Marketing, Showertec Industries, RIBE Power, Toshiba Transmission, Power Plug, Mestron Engineering and Sherwood.

It was a very good platform for the local E&E industry peers to meet face-to-face, pro-actively communicate, and enhance interaction with our Malaysian exhibitors, and also thereafter create valuable win-win business opportunities. It was certainly a highly-rewarding return-on-investment for the enthusiastic Malaysian exhibitors.

TEEAM was honoured to have the Trade Commissioner of MATRADE & Embassy of Malaysia, Manila, Ms. Intan Jalani and also Ms. Farhana Kamaruddin of MATRADE HQ KL to officiate the TEEAM Pavilion.

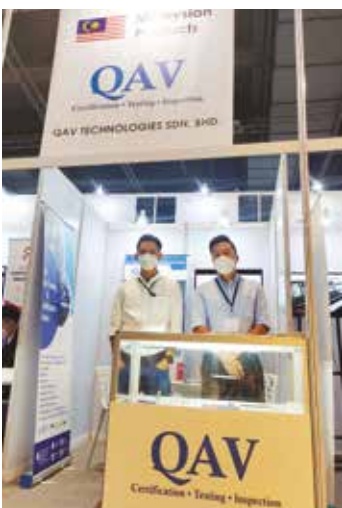
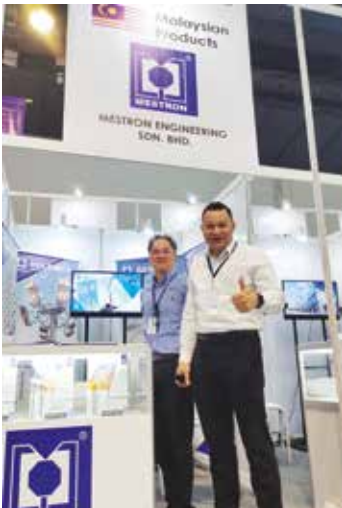
The Society of Philippine Electrical Constructors & Suppliers, Inc. (SPECS) also hosted a Networking Session for TEEAM's exhibiting members to enhance business networks as well as export opportunities to the Philippines market. A big thank you to SPECS for their warm hospitality!

TEEAM wishes to record its sincere appreciation and heartfelt thanks to MATRADE for the great support extended to the Association and we are fully committed and dedicated to do our very best! The next 3E XPO is scheduled from 27 November to 2 December 2023 in Manila, Philippines.

Snapshots of the 3E XPO 2022 Philippines



Snapshots of the 3E XPO 2022 Philippines



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MACEOS' Exclusive Interview with Dr. C.T. Siew, TEEAM President

Can Business Events Power Industry Growth? MACEOS Speaks to TEEAM to Find Out

Trade Associations are formed to not only represent their respective industries, but also carry out activities that are conducive to the growth of its members. The Electrical and Electronics Association of Malaysia (TEEAM) has chosen to be active in business events, specifically trade fairs, for the greater benefit of its members. In this exclusive interview on 19 January 2023 with Dr. C.T. Siew, the President of TEEAM, the Team from the Malaysian Association of Convention and Exhibition Organisers and Suppliers (MACEOS), finds out how exactly business events benefitted them, and how other industries can take advantage of this opportunity.



Dr. C.T. Siew, TEEAM President.

Q: The Association has actively participated in trade exhibitions lately, including your recent participation at international trade fairs such as the Electric & Power Vietnam 2022 in Ho Chi Minh City and Electric & Power Indonesia 2022 in Jakarta in September, as well as the 3E XPO 2022 in Manila in November. Why has the Association chosen to establish a pavilion at trade fairs?

A: TEEAM has always supported trade exhibitions locally in the past. It is an important platform for the industry players to network and get connected. In 2022, TEEAM chose 3 international trade exhibitions in the Asia region, and bringing our members to explore and export to new markets. Exhibiting under a pavilion will bring a bigger impact on our members and TEEAM being the Trade Association for E&E industry, also invited our partner industry Associations in the respective countries to visit our members at the Pavilions – thus attracting more opportunities and potential leads for our members. We believe having a pavilion will definitely provide a good platform and impact for the local E&E industry peers to meet face-to-face, pro-actively communicate with our Malaysian exhibitors, and also thereafter create highly valuable win-win business opportunities.

Q: But with digital marketing and virtual events prevalent these days, why have you opted for a physical event?

A: Digital Marketing has been very important for the past 2 years during the pandemic era. However, it remains important in the post-pandemic era too, where we will still use it to generate leads and create brand exposure to potential markets and clients. Nevertheless, physical events create a better environment and a good platform to meet potential clients personally by being physically face-

to-face and better close the deals, and also to build up stronger rapport and closer relationship.

Q: The Government provides various forms of Grants to support export activities. What form of support has the Association received from the Government?

A: As a Trade Association, TEEAM has applied for and successfully received the ETA (Empowering Trade Association) Grant from MATRADE, which allows us to organise trade promotion activities such as participating in overseas trade shows for our members' benefit.

Q: Prior to this, what business events have you participated in?

A: We have actually participated in many business events on an on-going basis. These include the most recent ASEAN M & E Show 2022 organised by Informa Markets, ENGINEER and MARVEX Exhibition 2022 by CIS Network, and the Malaysia-China Trade Expo 2022 organised by the Guangzhou Convention Service, to name a few.

Q: Overall, how confident are you in business events to deliver the results that you are looking for?

A: From our long and vast industry experience, business events have consistently provided a very reliable networking platform to readily communicate and build potential leads for our members.

Q: What do you think was the most valuable outcome that the Association and its members have gained from participating in trade fairs?

A: Our Association and members were able to successfully position Malaysia in a positive spotlight in overseas trade shows, showcasing high-quality and performance-centric Malaysian products and services to the region. Further to that, through our pro-active participation in overseas Trade Shows, we have also gained a significant number of new members from the local SMEs.

Q: Would you recommend your members and other industries to be more involved in business events, and what other advice do you have for them?

A: We strongly recommend our members and other industries to be more involved in business events, and pro-actively start making plans and preparations to include Trade Fairs into their 2023 marketing strategies, moving forward. Success will definitely occur, when opportunity meets preparation!

Acknowledgement

TEEAM hereby wishes to extend sincere thanks to MACEOS for the featured interview, which was published in MACEOS Headlines, January 2023. <https://maceos.org.my/category/newsline/>

Electric & Power Indonesia 2022

With another Empowering Trade Association (ETA) Grant from MATRADE, TEEAM hosted a Malaysia Pavilion at the Electric & Power Indonesia 2022 Exhibition in Jakarta International Expo (JIExpo) at Kemayoran, Jakarta, Indonesia, from 14 to 17 September 2022. The main objective of the ETA programme is to assist members to expand their overseas market, particularly into ASEAN.

The Malaysia Pavilion exhibited Malaysian E&E products and services ranging from Busduct Solutions; Trunking Systems; Wires & Cables; LED Lightings; Earthings System, Lightning & Surge Protection Systems; Testing & Inspection Services; Fittings & Accessories; Capacitors; Copper Products; Wiring Accessories; and Electrical Conduits & Fittings.

The exhibiting members were DNF Cable, EITA Power System, Furutec Electrical, QAV

Technologies, Pekat Engineering, Insteel Malaysia, Electrical Components, Multi-B, Gruppe Marketing, Dynamic Electrical, Linkk Busway, Luvata Malaysia and United MS Electrical Mfg.

Indonesia has a huge population and we anticipate interesting growth in the Indonesia E&E demand whereby Malaysian companies stand a good chance to capitalise on the growth -- more so with the on-going re-location of the Indonesian capital from Jakarta to Nusantara in East Kalimantan (Borneo). The Pavilion was a good platform for Malaysian exporters to go all out and promote "Buatan Malaysia" (Made in Malaysia) offers, which have better quality and at affordable prices.

The Official Launch was by Mr. Adlan Mohd Shaffieq, Charge d'affaires, Embassy of Malaysia, Jakarta, and Ms. Anisah Ali, MATRADE's Trade Commissioner in

Jakarta, who is also the Trade Counsellor of the Embassy of Malaysia, Jakarta. Mr. Hafidz Shukri Junit, MATRADE's Assistant Trade Commissioner, and Ms. Nena Namira Amedyan, MATRADE's Development Manager, were also present.

A delegation from the Association of Indonesian Electrical & Mechanical Contractors (AKLI) headed by Mr. Puji Muhandi (AKLI President) visited the TEEAM Malaysia Pavilion to network and explore business opportunities.

TEEAM wishes to record its sincere appreciation and heartfelt thanks to MATRADE for the great support extended to the Association and we are fully committed and dedicated to do our very best! The next edition of Electric & Power Indonesia 2023 is scheduled from 13 to 16 September 2023 at the JIExpo in Kemayoran, Jakarta, Indonesia.

Snapshots of the Electric & Power Indonesia 2022



Snapshots of the Electric & Power Indonesia 2022



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UOB Networking Luncheon

The United Overseas Bank (UOB) hosted a sumptuous Networking Luncheon for TEEAM members on 16 December 2022 at Restaurant F1 in Puchong, Selangor.

Members had the opportunity to explore how to leverage banking products and services for their business growths.

“TEEAM and UOB have had embarked on a long-term partnership before the pandemic itself, which we at the Association see as a great opportunity to work towards a better

synergy in business and events. As we move into new horizons and policies, opportunities are ample, especially in the E&E sector, which would benefit from the various facilities and backing from strong financial institutions such as UOB”, said Ir. Dr. Ng Kok Chiang, TEEAM Honorary Secretary, in his opening address.

Besides the common products such as account opening, loans, overdrafts and working capitals, UOB also highlighted their Low Carbon Transition Facility and U-Solar & U-Energy financings. UOB also has

partnership with external companies to offer Autocount and Exabyte for the much-needed digitalisation in our SMEs. UOB’s U@Work benefits members’ employees, and their advanced UOB apps can manage employees’ expenditures and salary.

It was certainly a great networking event for TEEAM members, with the robust team from UOB led by Mr. Oh Seng Hu, Senior Vice President & Branch Manager of UOB, Jalan Othman, Petaling Jaya. A big thank you to UOB for hosting a wonderful luncheon!

Snapshots of the UOB Networking Luncheon



Electric & Power Vietnam 2022

TEEAM was privileged to obtain yet another Empowering Trade Association (ETA) Grant from MATRADE to host another Malaysia Pavilion at the Electric & Power Vietnam 2022 Exhibition at the Saigon Exhibition & Convention Centre (SECC) in Ho Chi Minh City, Vietnam, from 7 to 9 September 2022. It was a good opportunity for members to promote their products and services to the overseas market, particularly into Vietnam.

The Malaysia Pavilion exhibited Malaysian E&E products and services ranging from Busduct Solutions; Trunking Systems; Wires & Cables; LED Lightings; Earthings Systems, Lightning & Surge Protection Systems; Testing & Inspection Services; Fittings & Accessories; and Electric Instant Water Heaters. The exhibiting members were

DNF Cable, EITA Power System, Furutec Electrical, QAV Technologies, Pekat Engineering, Multi-B, Gruppe Marketing, Showertec and RIBE Power.

TEEAM was honoured to have Ms. Rosmizah Mat Jusoh, the Trade Commissioner of MATRADE Ho Chi Minh City, to officiate the TEEAM Pavilion.

TEEAM wishes to record its sincere appreciation and heartfelt thanks to MATRADE for the great support extended to the Association and we are fully committed

and dedicated to do our very best! The next edition of Electric & Power Vietnam 2024 is scheduled from 4 to 6 September 2024 at SECC, Ho Chi Minh City, Vietnam.



TEEAM's Malaysia Pavilion.

Snapshots of the Electric & Power Vietnam 2022



Snapshots of the Electric & Power Vietnam 2022





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Retrofitting Your Building For A Low-Carbon Future

Nowadays, many new state-of-the-art buildings do not just boast about their aesthetic features, but also their green credentials. Energy-efficient systems are installed to reduce energy wastage and solar power systems are used to generate renewable energy, amongst other things.

What about older buildings? Owners of such buildings can jump on the sustainability bandwagon without expending too much of their budgets as well. There are various financing programmes in place from banks and incentives by the Government to help make their buildings greener.



“Lower energy cost also means a bigger maintenance budget that can be better utilised for other important maintenance needs.”

Dr. Siew Choon Thye, President of The Electrical and Electronics Association of Malaysia (TEEAM)

“By retrofitting their buildings, businesses can reduce energy costs and remain competitive by using the savings to invest in research and development, increase productivity and expand their market share. Procuring financing to retrofit buildings and improve energy efficiency has now become more accessible. There are also more industry players offering services to convert buildings into energy-efficient ones,” says UOB Malaysia CEO, Ms. Ng Wei Wei.

This is an important task. Globally, the buildings and construction sector contributes around 39% of carbon emissions, according to the 2020 Global Status Report for Buildings and Construction. Most of this carbon footprint is due to energy consumption, followed by embodied carbon emissions from materials and the construction processes.

By installing energy-efficient features and solar power systems, building owners can help reduce carbon emissions for the sector while saving on their own electricity bills. This is in line with the Malaysian Government’s direction. Sustainability is one of the key drivers under the 12th Malaysia Plan, and the

Government has announced its intention to achieve carbon neutrality as early as 2050.

Amongst the incentives that the Government has introduced are the Green Investment Tax Allowance for the purchase of green technology services. Both are available until 2023.

“If businesses do not consider doing this now, they may lose out on the opportunities to save cost in the long term. Moreover, they may also be left behind in the race to raise their ESG (environmental, social and governance) profile among key stakeholders like shareholders, potential investors and customers, and in doing their part to fight climate change. This is especially important to global stakeholders’ demand for such things,” says Ms. Ng.



“Typically, business owners can generate monthly savings ranging from 30% to 50% of the electricity cost. This depends on various factors such as electricity consumption and roof space.”

Mr. Davis Chong, President of the Malaysian Photovoltaic Industry Association (MPIA)



“If businesses do not consider doing this now, they may lose out on the opportunities to save cost in the long term.”

Ms. Ng Wei Wei, CEO of UOB Malaysia

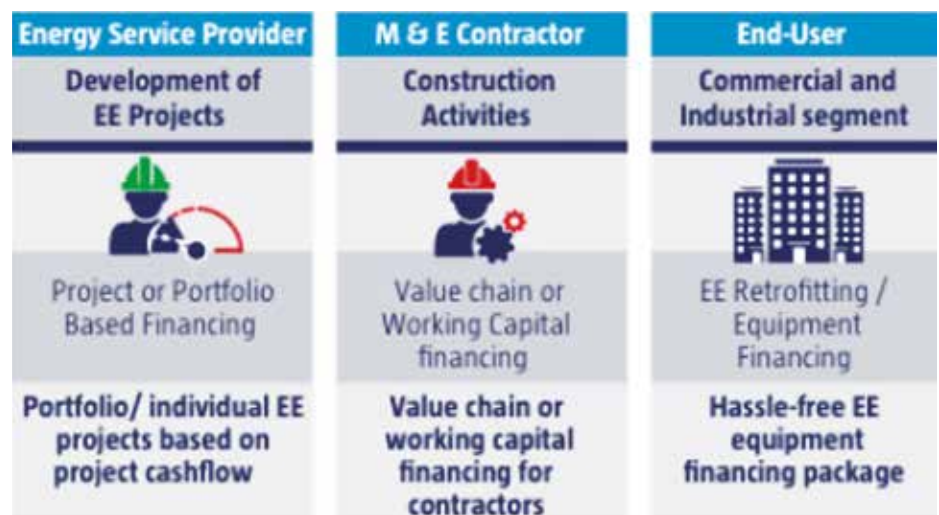
Many Financing Options for Businesses

Understandably, businesses may be put off by the initial costs of renovating and retrofitting their buildings. However, financing options from banks are now widely available.

Last year, UOB Malaysia launched U-Energy, an innovative sustainable financing solution, to address misconceptions and cost concerns that businesses have. It is the region’s first integrated financing platform for energy efficiency projects.

“Integrating sustainability into business processes can be complex. At UOB, we recognise our role as a financial institution to simplify sustainable financing for our customers and act as an enabler to support their sustainability-related aspirations,” says Ms. Ng.

Financing solutions for the ecosystem at a glance



KYODO PIPE Standard Galvanised Steel Conduit

BS 31 CLASS B (SCREWED) / MANUFACTURER'S STANDARD

NOMINAL SIZE	OUTSIDE DIAMETER				WALL THICKNESS				CALCULATED WEIGHT WITH COUPLER			NUMBERS OF THREADS	LENGTH OF THREADS			
	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
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

MS 275 / BS 4568 CLASS 3 (SCREWED) / MANUFACTURER'S STANDARD

NOMINAL 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

NOMINAL SIZE	OUTSIDE DIAMETER		INSIDE DIAMETER	EXTERNAL THREAD LENGTHS
	MINIMUM	MAXIMUM		
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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RND Department : Mr. Tan S.M (012-538 7746)
Website: www.kyodopipe.com

The bank actively develops new financing solutions like U-Energy and aligns itself to the Government's sustainability plans and the United Nations' Sustainable Development Goals, she adds. "As the world confronts climate change, U-Energy is UOB's way of doing our part as a responsible intermediary to help reduce carbon emissions and drive the adoption of energy-efficiency projects."

Through U-Energy, commercial and industrial building owners can purchase energy-efficient equipment or systems directly with UOB's financing. This includes installing energy-efficient air conditioners and chillers, elevators, LED lighting, solar panels, building facades and power management systems.

Under this direct purchase scheme, building owners can obtain a loan of up to RM25 million with a maximum seven year loan facility.

Alternatively, building owners can opt for the energy-as-a-service model that requires zero upfront payment. UOB will extend direct support to the energy service company on the financing requirement for the energy-efficient equipment or system.

"With our deep understanding of the sector, we simplify access to sustainable financing and address the pain points of businesses and homeowners by connecting them with our trusted panel of Energy Service Companies (ESCO)," says Ng.

On average, U-Energy's ESCOs can help consumers cut at least 20% of energy consumption. Energy efficiency projects across ASEAN financed through U-Energy have resulted in an estimated annual energy savings of 22.5GWh thus far, which is equivalent to greenhouse gas (GHG) emissions reductions from taking 1,923 cars off the road for one year.

The U-Energy programme is part of UOB's Smart City Sustainable Finance Framework, which guides the bank's financing efforts to encourage the development of smart and sustainable cities across the region. Under the same framework, UOB introduced U-Solar to

Malaysia in 2019, ahead of other countries in ASEAN.

U-Solar was Asia's first marketplace that finances the entire renewable energy ecosystem. As at 31 December 2021, it had generated 90.1GWh in solar power in the country alone, which is equivalent to GHG emissions reductions of over 12,791 cars taken off the road, according to UOB.

Gain Access to Ecosystem Partners and Experts

Other than financing, building owners may be worried about finding the right energy services provider to work with. After all, they would require customised solutions and a long-term relationship since these systems require maintenance and upkeep.

Through U-Energy, UOB aims to address this problem by working with reputable ESCOs in the ASEAN region. The ESCOs will advise building owners on the design, sizing and project models that can fit their objectives, among other things.

For instance, Mr. Davis Chong, President of the Malaysian Photovoltaic Industry Association (MPIA), suggests that building owners first understand their energy consumption and determine how much energy they want to save with their solar system. The Net Energy Metering (NEM) scheme, which allows consumers to sell excess renewable energy generated back to the grid, could be considered.

"Typically, business owners can generate monthly savings ranging from 30% to 50% of the electricity cost. This depends on various factors such as electricity consumption and roof space," he says.

Before installation, the service provider will inspect the condition of the roof. If it is not fit for installation, building owners can seek advice on whether there are alternative set-ups they can consider.

Getting expert advice would be crucial for older buildings that do not have energy

consumption data or documentation of existing installations. For such buildings, it is best to establish the building's energy baseline and Key Energy Users (KEU) before retrofitting work is done, says Dr. Siew Choon Thye, President of The Electrical and Electronics Association of Malaysia (TEEAM).

"If KEUs are identified and strategies formulated accordingly to tackle these energy consuming systems, the cost of retrofitting such systems shall be offset by the long-term savings generated by the retrofitted systems, along with well-structured, continuous operating maintenance," he says.

"It is important for businesses to do this as a way of future-proofing their assets", Dr. Siew adds. There can be cost savings and businesses can meet their ESG goals, and contribute to GHG emissions reduction.

"Lower energy cost also means a bigger maintenance budget that can be better utilised for other important maintenance needs. Studies have shown that energy-efficient buildings potentially generate better rental yields," he adds.

Evidently, going green is not out of reach for building owners. Many incentives, support and financing programmes such as U-Energy are available. Businesses just have to take the first step and play their part in making the world a better place.

Acknowledgement

Credit to The EDGE Malaysia. This meaningful article was published by The EDGE Malaysia on 22 August 2022. It is reproduced with the kind permission from UOB for TEEAM members' information and reference.

For more information on UOB's financial solutions, please log on to www.UOBSustainability.com



Membership Recruitment Campaign

TEEAM appeals to members to help in recruiting companies and individuals to join the association to strengthen TEEAM's membership base. Incentives are offered by the Membership Recruitment Committee. Members introducing a new company member will be entitled to two points, whilst introducing an individual member will be entitled to one point. The points can be accumulated and used to redeem free advertisements in Suara TEEAM or redeem membership subscription.

For details, please contact the TEEAM Secretariat at Tel: +603-9221 4417.

The membership application form can be downloaded from the TEEAM website at www.teeam.org.my



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MITI Townhall Session on Nusantara

On 30 November 2022, the Ministry of International Trade & Industry (MITI) hosted a Townhall Session on the Development of Indonesia's New Capital City, Nusantara (located in the heritage island of Borneo, now-named Kalimantan). Attendees from the local business community and industry stakeholders received updates on the status and development progress of Nusantara, particularly projects in the different phases and the various types of collaboration opportunities with local Indonesian players. Highly informative and interesting presentations were delivered by the Indonesian Delegation from the Public Works and Public Housing Ministry. President, Dr. Siew Choon Thye, officially represented TEEAM at the packed-to-the-brim Townhall Session at MITI's HQ.

It is hereby hoped that TEEAM members will also be able to pioneer and capitalise on this golden opportunity, by being pro-actively



involved in this New-Capital-Building collaborative opportunity of a lifetime – and thus indelibly mark TEEAM members' value-added contributions towards this gigantic Government-To-Government (G2G) multi-

developmental-phases of undertakings! The presentation materials shared by the Indonesian Delegation can be downloaded from TEEAM website (www.teeam.org.my) for members' information and reference.

Snapshots of the MITI Townhall Session on Nusantara



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IEC Global Impact Fund



The Global Impact Fund of IEC (International Electrotechnical Commission), which was launched in early 2022, provides grants for projects that address specific global Environmental, Societal and Governance (ESG) challenges through the application of IEC International Standards and Conformity Assessment Systems.

The United Nations (UN) has recognised electricity as the cornerstone for economic development. Electrical, electronic and information technologies, which are core to IEC work, have the potential to positively impact ESG challenges. When countries adopt IEC work in standardisation and conformity assessment, they are better able to build up national-quality infrastructure, thus achieving greater efficiencies while improving the safety of products, workers, people, and the environment.

Companies that use IEC work can access global best-practices to build quality devices and systems that are valued beyond national borders. The IEC Global Fund aims to bring the benefits of IEC International Standards and the IEC Conformity Assessment Systems to find solutions to some of the most pressing challenges facing the world.

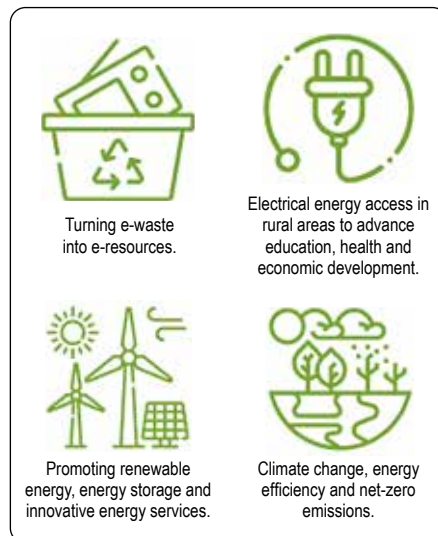
IEC Global Impact Fund projects target specific countries where effective, safe, and efficient solutions based on IEC technical know-how can be implemented by Small and Medium Enterprises (SMEs). Through the IEC national contact, the SME can also garner broad support among national stakeholders. While projects generally target one specific country, they are also so



designed so that they can be replicated in other countries or scaled up regionally to maximise impact.

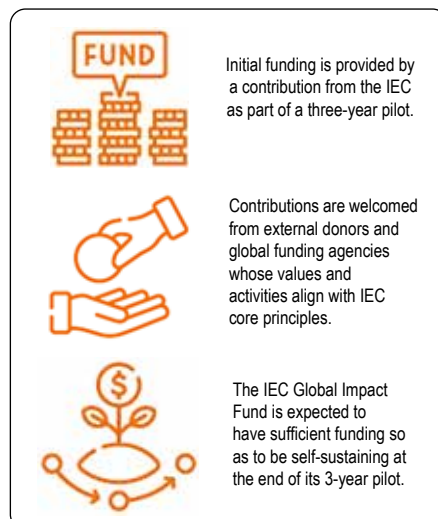
Project Areas

Four project areas have been identified where IEC International Standards and IEC Conformity Assessment Systems can have a significant impact. They are:



Each year, through a formal call for proposals, projects are selected in accordance with clearly-defined, objective and transparent rules. Once selected, Key Performance Indicators (KPIs) and other metrics are employed to monitor and evaluate the project finances plus integrity and impact throughout the funding period. Achieving key milestones is a pre-requisite for funding distribution.

SMEs that have obtained a grant from the IEC Global Impact Fund will undertake their specific project by applying IEC International Standards and/or IEC Conformity Assessment services to address a defined ESG challenge.



By the close of the grant phase, SMEs are expected to deliver a working prototype and a business plan for scaling up their solution across a specific country or region in the following three to five-year period. The aim is to extend the impact of the work without need for further grants.

Funding

The IEC Global Impact Fund focuses on SMEs because of their well-recognised role as innovators in technology. IEC Member Countries and Affiliates in the country where the project is implemented serve as focal points to help the SME further engage with national stakeholders and leverage their project. A firm commitment from IEC national representatives to collaborate with the SME is one of the key elements for the successful implementation of the project and an opportunity for the country to further strengthen its national standardisation and conformity assessment infrastructure.



How Can I Contribute

The IEC Global Impact Fund is funded through donations (please refer to IEC's Donation Policy at www.iec.ch) from the public and private sector in addition to the contributions from IEC. By donating to the IEC Global Impact Fund, you will contribute to tangible and actionable projects that make a real difference on the ground. Projects address issues such as e-waste, electricity access, climate change and more, using IEC International Standards and IEC Conformity Assessment services. This helps ensure that projects are safe, efficient, effective, and affordable and that they can be replicated and scaled up to maximise impact.





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Email: wetsel@wetpj.com.my



New Members

The following new members have been approved and accepted by the TEEAM Council from December 2022 – January 2023. 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!

Olympic Cable Company Sdn Bhd Lot PT 2126-2131, Jalan PK 1, Taman Perindustrian Krubong, 75250 Melaka. Tel: +606-337 3088, +6012-316 6310 Fax: +606-337 3099 E-mail: enquiry.sales@olympic-cable.com.my Website: www.olympic-cable.com.my Contact Person: Mr Edmund Chong Cheong Leong <i>Business: Manufacturer of power cables.</i>	Ablecon Power System Sdn Bhd No. 5, Jalan Pemberita U1/49, Temasya Industrial Park Glenmarie, 40150 Shah Alam, Selangor Darul Ehsan. Tel: +603-5569 4990 Fax: +603-5569 4090 E-mail: sales.ablecon@gmail.com Website: www.ablecon.my Contact Person: Mr Lee Chee How <i>Business: MV distributor.</i>
Radius Business Solutions (Malaysia) Sdn Bhd Suite 22.01&22.05, Level 22 Centrepont North, Mid Valley City, Lingkaran Syed Putra, 59200 Kuala Lumpur. Tel: +603-9212 6655 E-mail: Carol.Tan@radiusfuelcards.com Website: https://www.radiusfuelcards.com.my/ Contact Person: Ms Carol Tan <i>Business: Distribution of fuel cards and telematic devices and all related products via issuance of fuel cards and to provide a web based solution for efficient fleet management.</i>	Join us now if you are not a TEEAM member yet! Contact: +603-9221 4417 E-mail: philia@teeam.org.my  www.teeam.org.my  @teeam_my  teeam.org.my/  @teeam_my  teeam my



..... Continue IEC Global Impact Fund

Preparations Underway for Launch of First IEC Global Impact Fund Project

Batteries are ubiquitous. Used to power a wide range of applications, from electric vehicles and trains to electronic devices used daily by people across the globe, demand for batteries is expected to increase. According to Statista [1], global demand is expected to increase from 185 GWh in 2020 to over 2,000 GWh by 2030.

However, batteries can have a negative impact on the environment and contribute to the problem of e-waste, particularly in countries lacking infrastructure and resources to address the issue. If not safely disposed at the end of their lifecycle, batteries can release toxic pollutants into the environment with harmful consequences to human health. Proper disposal, re-use, re-purposing and recycling are solutions to preserve the natural



resources used in batteries and prevent their negative impact.

The IEC Global Impact Fund has announced that its first project will focus on promoting sustainable battery e-waste management in Africa. It has now issued the first formal documents as part of the project entitled *Catalysing innovation for circular models in Africa - turning battery e-waste into e-resources.*

“We are really excited to be able to move forward with the first project of the IEC Global Impact Fund”, stated IEC President, Dr. Yinbiao Shu. “With this project, we will bring the benefits of

IEC International Standards and the IEC Conformity Assessment Systems to help solve the challenge of e-waste and its harmful impact on human health and the environment.”

The first project will support an SME-led project in Africa. Interested parties are invited to respond to the Call for Expressions of Interest (CEI) [2]. Feedback to the CEI will be incorporated into the Request for Proposals (RFPs) which is expected to be issued in early 2023. Further information is available from the Project Concept document [3].

References

- [1] <https://www.statista.com/statistics/1103218/global-battery-demand-forecast/>
- [2] <https://www.iec.ch/basecamp/call-expressions-interest>
- [3] <https://www.iec.ch/basecamp/gif-project-concept>

Acknowledgement

Source: IEC Global Impact Fund c/o IEC – International Electrotechnical Commission
3, Rue de Varembe, PO Box 131, CH-1211 Geneva 20, Switzerland
Tel: +41 22 919 0211 E-mail: info@iec.ch
<https://www.iec.ch/global-impact-fund>



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Invest Selangor FGD in Electrical & Electronics Sector

Invest Selangor Berhad organised a Focus Group Discussion (FGD) in the Electrical & Electronics (E&E) Sector with industry stakeholders on 28 June 2022, at the Concorde Hotel in Shah Alam, Selangor. The FGD objective was to understand the latest updates and trends, challenges, as well as the future outlook for the E&E sector. It was also aimed at ensuring that Selangor continues to offer an adequate E&E ecosystem and attract more investors in this sector. The discussion was also held to know what are the main issues affecting investments in Selangor and to brainstorm ideas on how Invest Selangor can provide a more conducive investment-friendly environment.



Focus Group Discussion in progress.

From TEEAM, Mr Lee Peng Sian (Vice President & Chairman of Manufacturing Group) and Ir. Dr. Ng Kok Chiang (Honorary Secretary), attended the Discussion to give their inputs. TEEAM pointed out that the approvals and licensing under the Selangor Government should be simplified to ease doing business and also requested to provide more incentives to the E&E industry to attract more investors. It was a very fruitful brainstorming Discussion.

Invest Selangor Berhad is a one-stop agency that provides information, advisory services, as well as start-up expansion assistance to potential and existing investors.



Group photo for the album.



SKLPA 63rd Anniversary Celebrations Dinner 2022

18 November 2022 - Heartiest congratulations to the Selangor & Kuala Lumpur Plumbing Association (SKLPA) on its 63rd Anniversary Celebration at Wisma Hua Zong, Seri Kembangan, Selangor. TEEAM was represented by Council Member Mr Chong Yoon Koon. It was a good networking night to renew acquaintances and also to catch up with industry peers.





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SME100 Gala Dinner & Awards 2022

The SME100 Gala Dinner & Awards Ceremony 2022 was successfully held on 9 December 2022 at One World Hotel, Petaling Jaya. The event was graced by the Guest-of-Honour, Dato' Sri Lokman Hakim Ali, the then Secretary-General of the Ministry of International Trade & Industry (MITI). SME100 is an annual recognition Award Programme organised by SME Magazine to honour successful SMEs. The awards promote excellence, best practice and innovation

amongst SMEs. Congratulations to Datuk William Ng and his esteemed team from Business Media International (BMI) for another year of resounding success in awarding the fastest-moving businesses of the vital SME sector.

Our heartiest congratulations to the 138 SMEs on their stellar achievements in emerging as Winners of the SME100 Fast Moving Companies' Awards 2022.

Amongst the winners who are TEEAM members are DNF Cable Sdn Bhd, JET Engineering Solutions Sdn Bhd and Magnum Cable Sdn Bhd (Magnum Pro Marketing's Group). Syabas and well done!

The Gala Dinner Celebration was attended by leaders of Business and Trade Associations as well as Senior Government Officials. TEEAM President, Dr. Siew Choon Thye, was one of the VIP Guests to extend TEEAM's unflinching support to this SME100 event. Kudos to BMI!

SME100 Fast Moving Companies' Awards 2022 Successful Recipients from TEEAM



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2023 Budget Dialogue

The 2023 Budget Dialogue was held on 17 January 2023 at the Ministry of Finance (MOF) HQ in Putrajaya. Chaired by the Finance Minister, The Right Honourable, Yang Amat Berhormat Prime Minister of Malaysia, Dato' Seri Anwar Ibrahim, the 2023 Budget Dialogue aimed to obtain views from various stakeholders including private organisations and associations, NGOs, and Government departments/agencies, as inputs for the preparation of the 2023 Budget, which will be more comprehensive and inclusive. Amongst the sectors that will be focused are Green Technology, Digital Economy, Education, Health and SMEs. The overwhelmingly-packed dialogue session was graced by TEEAM President, Dr. Siew Choon Thye. This timely Dialogue augurs well for the future. Syabas!



2023 Budget Dialogue VIP Panellists.



(left) Datuk Ir. Ahmad 'Asri Abdul Hamid (CIDB Chief Executive) with Dr. Siew Choon Thye (TEEAM President).



(from left) Dr. Siew Choon Thye (TEEAM President), Ms. Teh Sook Ling (SHRDC COO), Ms. Carol Ong (MEIF Secretary) and Mr. John Loh (MASSCI Vice President).



(from left) Associate Professor Elajsolan VM Mohan (NAPEI), Mr. Mac Ngan (MEIF President) and Dr. Siew Choon Thye (TEEAM President).



..... Continue SME 100 Gala Dinner & Awards 2022

Snapshots of the SME 100 Gala Dinner & Awards 2022



Hager Malaysia's First Female MD Eyes 10% Growth Y-O-Y in Second Term Role



Recently appointed Hager Malaysia's first female Managing Director, Joyce Yee, achieved over 10% year-over-year (Y-O-Y) growth in her first year. This success is followed by a further 10% growth expected in 2023 as the market continues to flourish between 8% to 10% this year.

Knowingly a male-dominated industry, Yee has shown that women could thrive in electrical engineering, not to mention to lead the company with a string of successes. Yee is a part of 35% of the female executive share in the Southeast Asian region, according to UN Women. Being an assertive leader, not only is Yee breaking the stereotype but also revamping traditional workflow to improve productivity and supply chain relationships. After being hit by the uncertainty brought on by the pandemic, Hager Malaysia, under the wing of Yee, has seen a growth of more than 10% since assuming her role in November 2021.

The electrical and energy industry is projected to slow down in early 2023 amid the continued sluggish economy, however, Malaysia would remain a key player in the global supply chain as 7% of total global semiconductor trade flows through Malaysia and commands 13% of global chip-testing and packaging market share, according to Malaysia Semiconductor Industry Association (MSIA).

Hager Malaysia recognises the challenges and has been implementing strategic geographical expansion into tier two and three cities in East Malaysia including Kuching and Kota Kinabalu followed by the appointment of new distributors for local proximity. In addition, the company revamped the go-to-market strategy with enhanced partner programmes to build and strengthen supplier and distributor relationships while providing added benefits for stakeholders. "At Hager Malaysia, we embrace challenges, use feedback and learn from experiences. The outbreak of COVID-19 in 2020 resulted in the decline of market revenues, yet, we can recover stronger since then and will continue to persist and be driven to achieve our 2023 target and forward," said Yee, MD of Hager Malaysia. Hager Malaysia understands the need to evolve with the times and industry with new strategies and solutions to future-proof the business. As part of the Hager Group, Hager Malaysia is determined to implement Project 2030 and Blue Planet Commitment to keep the company customer-centric, independent, strong, and sustainable.

To achieve the Project 2030 target that is in line with Hager's vision for shaping the future of the electrical world, Hager Group initiated Blue Planet Commitment to measure its carbon footprint throughout its supply chain from the upstream activities and company activities to downstream activities including the end-life of sold products and wastes produced. Geared by Project 2030 and Blue Planet Commitment, Hager Malaysia has been able to offer some of the leading electrical components including energy-saving and smart solutions to contribute to the building of green and smart buildings locally. All products are developed with a principal mindset of sustainable consumption and production to protect the environment. Part of this is putting the entire process, from sourcing materials to end-of-product-life, under intense scrutiny to analyse its environmental impact, one of which is by measuring CO2 emissions.

For detailed products and information, visit www.hager.my.

About Hager Malaysia

Hager Malaysia is part of the Hager Group, founded in Germany in 1955, and now has become a leading supplier of solutions and services for electrical installations in residential, commercial, and industrial buildings.

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Launching of EV Charging Station at Bangi Golf Resort by ST

The Official Launching of the EV Charging Station at Bangi Golf Resort and the hand-over of the Distribution License for Public EV Charging System by the Energy Commission (Suruhanjaya Tenaga, ST) to EV Connection Sdn Bhd, in collaboration with Gentari Sdn Bhd, was successfully held on 14 December 2022.

The auspicious event was officiated by The Honourable (Yang Berhormat, YB) Nik Nazmi bin Nik Ahmad, Minister of Natural Resources, Environment and Climate Change, Malaysia. TEEAM was present at the Launching Ceremony and was represented by our Honorary Secretary, Ir. Dr. Ng Kok Chiang.

In order to ensure that the electricity supply infrastructure including EV charging developed in this country, is safe and complies with the highest safety standards, ST has published the “Guide on Electric



EV Charging Station.

Vehicle Charging System (EVCS)” as a reference document for all interested parties regarding the technical requirements and regulatory requirements for EV infrastructure

development in Malaysia. The “Guide on Electric Vehicle Charging System (EVCS)” published by ST can be accessed through ST’s website at www.st.gov.my

Snapshots at the Launching of the EV Charging Station at Bangi Golf Resort by ST





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Platinum Business Awards 2022 Night

The SME Association of Malaysia successfully hosted their Platinum Business Awards (PBA) 2022 Night on 9 November 2022 at the Sunway Pyramid Convention Centre in Petaling Jaya. Themed as Resilience, Globalisation and Digitalisation, this Platinum Business Awards honoured SMEs and individuals for their outstanding performances under the 21 Awards Categories. This prestigious event was graced by FMM President, Tan Sri Dato' Soh Thian Lai, as the distinguished Guest-of-Honour.

TEEAM was honoured to be invited as one of their VIP guests. TEEAM President, Dr. Siew Choon Thye, attended the meaningful event. TEEAM is one of the Supporting Organisations. The Awards Night was a win-win, value-adding networking event for all industry people in attendance. Congratulations to all the 93 Winners! TEEAM is proud to highlight that our member, Dpstar

Thermo Control Electric Sdn Bhd, was one of the Award Recipients. Our heartiest congratulations!



Congratulations! - Dpstar Thermo Control Electric Sdn Bhd receiving the PBA 2022 for SME Product Excellence Award Category.

Snapshots of the Platinum Business Awards 2022 Night





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ST's Seminar on Energy Efficiency and Conservation

The Energy Commission (Suruhanjaya Tenaga, ST) organised a Seminar on Energy Efficiency and Conservation (EE&C) on 7 December 2022 at the Lee Meridien Hotel in Putrajaya. The Seminar aimed to promote energy-efficiency policies, regulations and initiatives to the industrial, commercial and domestic building sectors. It was a good session for stakeholders, energy professionals and premises' owners to express and discuss the issues faced in the implementation of energy-efficiency practices.

TEEAM was present at the Seminar and was represented by Ir. Chang Yew Cheong

(Deputy President), Ir. Dr. Ng Kok Chiang (Honorary Secretary), Ts. Lim Sai Seong (Honorary Treasurer), and Mr How Chee

Seng (Council Member). Overall, the Seminar was very informative and it was a constructive sharing session.



Official Opening by Dato' Ir. Ts. Abdul Razib Bin Dawood, CEO of ST.

Snapshots of the ST's Seminar on Energy Efficiency and Conservation





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State Associations News



Sabah Electrical Association

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Website: www.pes-sabah.org

Courtesy visit to Suruhanjaya Tenaga

The Sabah Electrical Association (PES) paid a Courtesy Visit to the Regional Director of the Energy Commission, West Coast (Suruhanjaya Tenaga, ST Pantai Barat), Mr. Jefrey Nuri on 24 July 2022. The Courtesy Visit was attended by President, Mr. Lawrence Yapp; Secretary, Mr. Ho Shi Yin, and Committee Member, Mr. Yong Yee Sun. The following matters were discussed:

- Briefing on PES and PES's New Office Bearers.
- PES plans ahead under the New Presidency.
- Collaboration with ST in accord to ST's guidelines and PES's objectives in all aspects.
- Promotion of PES as a platform for ST and partnership with ST in CSR programmes.
- Jointly mitigating problems arising in the Electrical Industry.



Opening Ceremony of Bulan Keselamatan IKMCK 2022

PES attended the Opening Ceremony of Institut Kemahiran MARA's (MARA Skills Institute), Kota Kinabalu (IKMCK's) Safety Month (Bulan Keselamatan) IKMCK 2022, on 27 July 2022. The Ceremony was attended by PES President, Mr. Lawrence Yapp, and Committee Member, Mr. Shah Fareed. Mr. Shah Fareed presented a talk on:

- Expectation and the needs of students before going to industrial training and the working environment,
- Industrial training of IKMCK students, and
- Recruitment.



Courtesy Visit to KKIP

A delegation from PES led by its President, Mr. Lawrence Yapp, together with Vice President I, Mr. Aldrin Wong; Assistant Secretary, Mr. Roslan Bin Serin; Senior Advisor, Mr. Woo Soo Poo, and Committee Members; Mr. Fo Ying Foh, Ir. Albert Chia, Mr. Foong June Choy and Mr. Yong Yee Sun, paid a Courtesy Visit to KKIP Power Sdn Bhd on 18 October 2022.

The objective of the Courtesy Visit was to promote closer collaboration between PES and KKIP Power Sdn Bhd. PES's delegation was received by the Chairman of Kota Kinabalu Power Co. Ltd., Datuk Li Hengjun, together with their Senior Management Officials. The Courtesy Visit began with a Welcome Address by Datuk Dr. Joseph Lee, KKIP Board Chairman, followed by a briefing before proceeding with the visit to KKIP's main intake sub-station.

The Courtesy Visit was very informative as both parties had the opportunity to discuss concerns of the electrical industry challenges as well as exchange ideas on how to tackle arising problems, especially on how to improve the professional ability and efficiency of the power industry plus the transformation of power supply equipment. Both parties strongly believe that the relevant Authorities should take the initiative to provide more easy access on Certificate Training Courses for electricians as this, to some extent, will open more employment opportunities for local youths of all ethnic groups as well as upgrading their skills.



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Hiking at Bukit Kopungit

On Sunday morning 30 October 2022, PES's Sports Committee organised a leisure outdoor activity at Bukit Kopungit (Kopungit Hill), Kota Kinabalu. This was a relaxing way to experience the great outdoor and nature with friends and family, which was participated by some 20 PES members and friends. Not only being just beneficial to health as the participants got down to do some exercise and explore nature, this activity was also a good source for bonding as it allowed PES's participants to positively connect in a different setting.

Started with a light breakfast at a Restaurant near the Kepayan Low-Cost Housing Scheme, it took about two hours of walking to reach the top of the hill! Despite the drizzling weather, all were very motivated to complete the hiking and it was indeed a worthwhile and wonderful moment. PES is looking forward to organising more outdoor activities and to make them as its monthly affair. For the sake of fellowship, PES hopes that more members will join the next activity and re-connect. It was also a beautiful Sunday truly well spent!



Courtesy Visit to Yayasan Sabah College of Technology

A Courtesy Visit was organised by PES to Yayasan Sabah College of Technology (YSCT), i.e., the Sabah College of Technology Foundation, on 2 November 2022. The delegation comprised PES President, Mr. Lawrence Yapp; Vice President 1, Mr. Aldrin Wong, and Committee Member, Mr. William Hew. On hand to receive PES's delegation were Mr. Hj Samin Bin Hj Ongki, YSCT Chief Executive, and his Officers. PES had signed a Memorandum of Understanding (MOU) to establish basic co-operation and collaboration between both parties, in 2018. Hence, the Courtesy Visit was to discuss the renewal of the MOU. It was a fruitful Courtesy Visit.



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SESB's HSE Symposium Opening Ceremony 2022

PES was invited by the Sabah Electricity Sdn Bhd (SESB) to attend SESB's HSE Symposium 2022 Opening Ceremony on 7 November 2022 at the Sabah International Convention Centre (SICC). The Opening Ceremony was officiated by Datuk Mohd Hanafiah Bin Mohd Kassim, Secretary-General of the Ministry of Works, Sabah. The programme included safety briefing, presentation of awards to SESB contractors and staffs, and a tour of all the exhibition booths, which were participated by various departments and organisations. PES was represented by its President, Mr. Lawrence Yapp; Vice President 1, Mr. Aldrin Wong, and Secretary, Mr. Ho Shi Yin.



Leisure Outdoor Activity

A fun-filled morning hike with friends and family, as a leisure outdoor activity, organised by PES Sports Chairman, Mr. Foong June Choy, was held on Sunday, 11 December 2022. This is now one of PES's monthly activities with the main purpose of getting members to bond up and re-connect after three years' of break caused by the global pandemic. More wholesome leisure-centric outdoor activities will be hosted by PES in the near future.



Penang Electrical Merchants' Association

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Tel: +604 - 229 0195 Fax: +604 - 228 4233

E-mail: pema_pg@yahoo.com Website: www.pema.org.my

PEMA 74th Anniversary Dinner Celebration-Cum-Education Awards 2022

The Penang Electrical Merchants' Association (PEMA) celebrated its 74th Anniversary Dinner Celebration-cum-Education Awards 2022 on 30 October 2022 at the Noble Season Chinese Restaurant in Penang. There was a grand total of 45 tables – kudos to PEMA and its hard-working Organising Committee for their valiant efforts. The event was graced by The Honourable (Yang Berhormat, YB) Teh Lai Heng, State Assemblyman of Komtar, Penang. Lucky draws, karaoke session, entertainment and presentation of new membership certificates were amongst the highlights of the highly successful PEMA Dinner.

During the Dinner, PEMA Education Awards 2022 were presented to children of PEMA members and children of PEMA's employees who had achieved outstanding results in the PT3, SPM and STPM Examinations. A total of 25 recipients were presented with certificates



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and cash totalling RM4,000. PEMA Education Committee Chairman, Dato' Ooi Kok Kee, thanked all PEMA members, organisations and individuals for their continuous support which had made the PEMA Education Fund possible.

PEMA President, Ir. Lee Weng Keen, presented a souvenir to The Honourable (YB) Teh Lai Heng in appreciation of his time and effort in gracing the occasion. It had been a challenging year for PEMA and what a better way to start afresh the occasion with members and guests inter-mingling and enjoying the dinner in the true spirit of PEMA's noble vision.



PEMA President, Ir. Lee Weng Keen (left), and Education Committee Chairman, Dato' Ooi Kok Kee, presenting a souvenir to The Honourable (YB) Teh Lai Heng (right).



PEMA Committee Members on stage to cut a cake to mark the 74th Anniversary of PEMA.

PEMA Walkathon 2022

Last year's PEMA Walkathon had been an amazing success! After two years of pandemic, PEMA finally held a Walkathon 2022, at the Air Itam Dam in Penang, with a high turnout number of 150 participants. Food and drinks were graciously served and there were attractive prizes for the winners, including lucky draws, which were presented by PEMA President, Ir. Lee Weng Keen, and the Committee Members. It was a jovial and meaningful Walk for all.



Group photo of PEMA Committee Members with the participants.



All participants enjoying their breakfast.

Other State Association Members' contacts:



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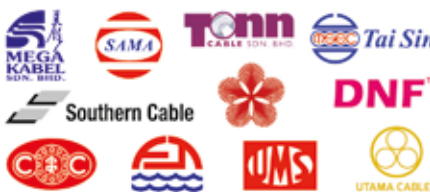


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Challenges and Opportunities in the Electrical Industry – Part 42

Ir Chew Shee Fuee KMN, TEEAM Past President

Co-Generation – An Energy-Efficient Technology A Guide from the Energy Commission of Malaysia (Suruhanjaya Tenaga-ST)

Co-generation is an energy-efficient technology which enables the simultaneous production of two different forms of useful energy, typically electricity and thermal energy, from a single primary energy source. The electricity generated is normally for on-site use and any excess may be exported to the local utility network. Thermal energy produced may be used for industry processes or to produce steam, hot water or hot air for drying or warming, or chilled water for cooling purposes.

The overall efficiency of energy use in a co-generation system can be up to 75% and more.

The benefits of co-generation can be briefly summarised as follows:

- Improve efficiency in the use of energy resources.
- Saving in operation costs with reduced energy costs.
- Improve profitability and competitiveness of the business.
- Reduce peak system demand and operation of less efficient peaking plants.
- Reduce demand and energy losses in transmission and distribution of electricity.

In the past, a Co-generator cannot export and sell the excess energy generated in the facility through the electricity supply network unless there is a Power Purchase Agreement (PPA) with the electricity supply company. This is one of the reasons affecting the wider use of co-generation, particularly in the small and medium-size industry and commercial sectors, as the sale of excess energy may be a factor affecting the consideration in investment in co-generation. The New Enhanced Dispatch Arrangement (NEDA) introduced since 2017 has overcome such shortcoming by providing a platform for Co-generators which do not have PPA with the electricity supply company to export and sell energy generated to the Single Buyer market. This will enhance financial viability

with additional return to the investment in co-generation. Single Buyer (SB) is the person authorised by the Commission to be responsible for the management of procurement for electricity and related services, which includes scheduling, procuring and settlement under Single Buyer Guidelines.

Under NEDA, depending on the capacity of the co-generation facility, a Co-generator without a PPA with the electricity supply company can participate in NEDA under one (1) of the following categories:

Large Merchant Generator

A large Co-generator with generation facility of not less than 30 MW which is connected to the Grid System and subject to central dispatch by the Grid System Operator (GSO) can participate as Large Merchant Generator.

Price Taker

A small or medium size Co-generator with generation facility from 100 kW up to below 30 MW (herein after referred to as “SPP-Cogen”), which are not subject to central dispatch by the GSO, can participate as Price Taker.

A large Co-generator with generation facility of not less than 30 MW can participate in the

daily bidding system to sell excess energy to the SB market by offering half-hourly Price Quantity Pair [(x) RM/kWh for (y) kW] to the SB similar to other Large Merchant Generators. If its offer is lower or equal to the System Marginal Price and is accepted and scheduled by the SB and the energy dispatched by the Grid System, the energy delivered to the Grid System will be paid at the actual System Marginal Price.

As a Price Taker, an SPP-Cogen with generation facility of 100 kW to less than 30 MW can sell excess energy generated to the SB through the electricity supply company without having to participate in the daily bidding process. The energy delivered to electricity supply networks will be paid the actual half-hourly System Marginal Price which depends on market fuel prices, system demand and availability of system generation.

More information regarding inter-connection requirements and tariff can be obtained from ST.

Co-generation should be encouraged in view of energy-efficiency.

Credit: The above information has been extracted from ST’s Publication: Co-Generation - An Efficient Technology (2022 Edition), which can be downloaded from ST’s website: www.st.gov.my

Ir. Chew Shee Fuee KMN B Sc (Hons) (Strathclyde), PEng, CEng, FIEM, MIEE Member, IEEE Member, 1st Grade Electrical Engineer (Competent up to 500 kV).

Ir. Chew was President of The Electrical and Electronics Association of Malaysia (TEEAM) from 2001-2005 and 2013-2017. He was the President of the ASEAN Federation of Electrical Engineering Contractors (AFEEC) for 2016-2018. He is a Past Chairman of The Institution of Engineering & Technology (IET) Malaysia Local Network. Ir. Chew is currently 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 (Suruhanjaya Tenaga, ST) 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 40 years of industry experience in electrical control and relay protection. He is also specialised in electrical site tests on power equipment, electrical fault investigation, plus 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 can be reached at e-mail: sfchew@ghliew1990.com



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Digitalisation & Computational Intelligence Revolutionise Power Transformer Maintenance

Associate Professor Ir. Ts. Dr. Wong Shen Yuong

The Malaysian Government aspires to transform Malaysia into a digitally-enabled and technology-driven high-income nation, and a regional leader in the digital economy. The fourth industrial revolution (IR4.0) and digitalisation technology are the keys to thriving in the digital economy. IR4.0 is a phenomenon that has emerged from several technological initiatives, and it is normally used to represent an era of digitalisation in which data is collected, processed, and analysed automatically so that various components of a system can collaborate digitally. Among all the technological possibilities and tools, the four main drivers for digitalisation and intelligent networking of machines and processes are Big Data, Cloud, Internet of Things (IoT), and Computational Intelligence, as shown in Figure 1. Big Data represents an enormous quantity and variety of collected data that provides crucial insights when processed. Cloud technology inter-connects software and data with web-hosted servers, and it has the characteristics of higher data storage and calculation capacities. IoT is a combination of various information sensors, devices and technologies, providing real-time collection of any object or process that needs to be monitored, connected, and interacted whereas Computational Intelligence (CI) is always applied to processing and analysing big data, leading to better decision-making.

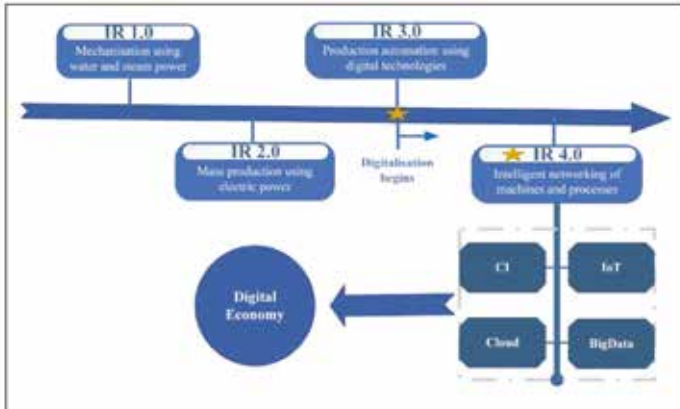


Figure 1: Evolution of Industries.

Digitalisation's Impact on the Power Sector and Economy

A revolution via digitalisation is currently underway in the electrical power system, which has remained largely unchanged for more than 100 years. Stunning advances in digitalisation can cut down electrical power system costs in at least five ways: by reducing maintenance and operating costs; improving power quality; increasing power station and network efficiency; diminishing the electrical power system's downtime and unplanned outages; and extending the operational lifetime of assets. Network failures are expensive, both for the utility and for the economy.

Figure 2 shows the overall worldwide savings from digital-enabled approaches that could be in the order of USD80 billion per year over the period of 2016-2040, or approximately 5% of total annual power generation costs based on the enhanced global deployment of existing digital technologies to all power stations and network infrastructures [1].

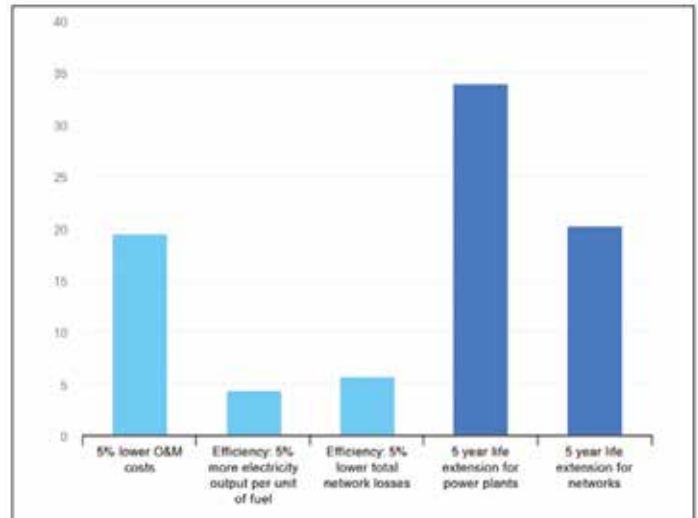


Figure 2: Cost-savings from digitalisation in power station over 2016-2040.

The ultimate goal and potential benefit reaped from digitalisation in the electrical power system is likely to be the possibility of extending the operational lifetime of power station equipment, through better monitoring and improved maintenance. Given that lifetime of all the power equipment in the world could be extended by five years, then, close to USD1.3 trillion of cumulative investment could be deferred over the period of 2016-40. In other words, investment in power stations would be reduced by USD34 billion per year and that in networks by USD20 billion per year [1].

Revolutionise Power Transformer Maintenance

One of the single highest value components in the electrical power system is power transformers, or simply transformers, comprising up to 60% of the total investment [2]. Power transformers are at the heart of the power station. The flow of power and electricity into our homes and other locations would not be possible without the availability of power transformers. Power transformers, which enable the transmission of electricity to any location, are indispensable in power transmission and distribution systems. Any failure or hidden defects in transformers can cause operational problems in the system, resulting in economic and resource losses. Early detection of abnormal conditions and fault-diagnosis reduces productivity loss and avoids abnormal event management while the power station is still in a controllable operating condition. A lot of attention has been given to this topic because it is the central component of abnormal event management. Power transformers, being the core of the power system, play both technical and economic functions in a power system.

As transformers begin to age due to a high workload, several internal faults occur. The failure occurrence rate of a transformer can be described by the well-known "bathtub curve" in three stages: Infant, Normal Operating and Wear-Out, as depicted in Figure 3. In the Infant stage, the failures are mainly caused by design and assembly errors. In the Normal Operating Stage, the transformer operates smoothly with a low failure risk. In the Wear-Out stage, the failures are mainly caused by ageing insulation and degeneration [3]. The functional lifespan of a transformer is approximately 40 to 50 years.



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Digitalisation in IR4.0 presents abnormal event management strategies in three ways;

- (1) online monitoring of the transformer's condition which is now possible, thanks to the digital technologies such as IoT, Big Data, and Cloud Services
- (2) use of Computational Intelligence (CI) to detect and diagnose transformer faults, and
- (3) the integration of online monitoring and CI in transformer asset management.

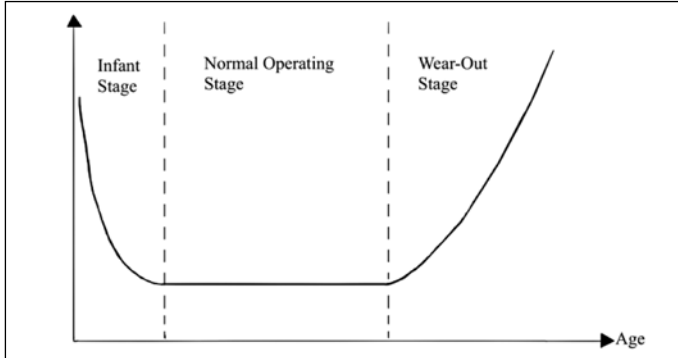


Figure 3: The Bathtub curve of faults.

The asset management strategy of power transformers has been considered as one of the most essential power system equipment asset management processes because of the substantial investments in power transformers and the effect they have on the operational reliability of power transmission systems. Generally, transformers' asset management can be classified into the following three main activities:

- (1) Condition monitoring techniques,
- (2) Performing maintenance plans, and
- (3) Ageing, health, and end-of-life assessments.

Another significant application of asset management strategy of a power transformer is reducing the influence of carbonisation from the current power energy system [4].

Under such circumstances, a single IT platform, linked to a data acquisition system comprising the necessary hardware such as sensors and communication peripherals for transmitting and receiving signals, is required to facilitate the integration of data coming from different sources. Further data processing steps are conducted using a suite of signal processing algorithms to analyse, transform and extract useful information from the collected sensing data. Various measurement data can be stored in a database hosted on the IT platform or in the Cloud. A variety of online and offline measurement data and methods can be used for further analysis, e.g., current and voltage measurements, temperature, furan content, water content in oil measurement, partial discharge detection, acoustic and vibration monitoring measurements, polarisation-based measurements, frequency response-based winding deformation and displacement detection. An illustration on the possible digitalisation usage is shown in Figure 4.

With the advent of digital disruption, CI methodologies continue to evolve in many forms and have demonstrated their importance in preventative maintenance by their ability to assess and monitor the operational status of transformers [5]. CI opens up a new avenue to address complex real-world problems using nature-inspired computational methodologies.

CI defines the theory, design, application and development of biologically and linguistically motivated computational paradigms. These advanced approaches offer a useful means for transformer fault detection and diagnosis, as compared to conventional techniques. Nonetheless, this does not mean that conventional methods are ineffective. However, in many aspects, the conventional methods incur higher operating and management costs [6], along with some other deficiencies. On the other hand, CI-based measures aid the conventional methods by providing more precise and accurate detection and diagnosis results, leading to convenient and effective solutions.

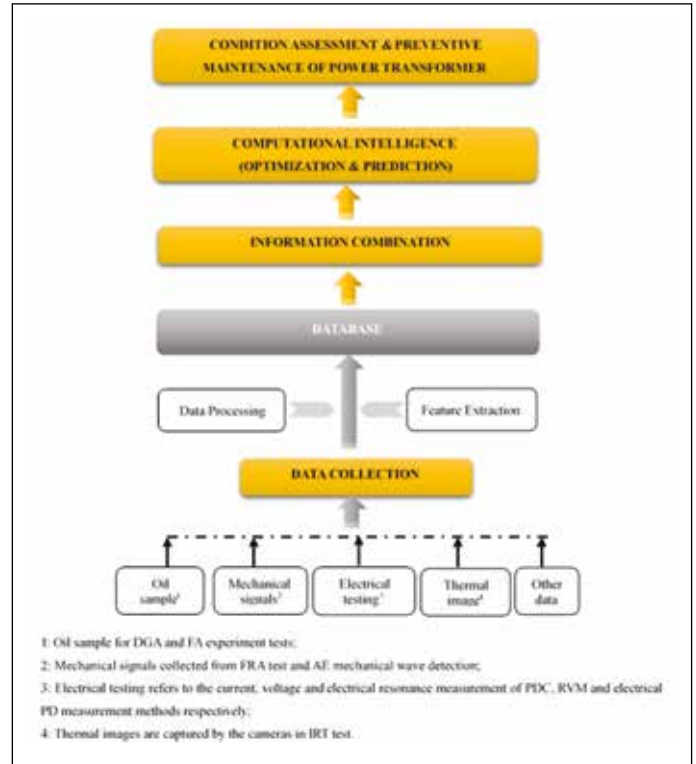


Figure 4 : How data can be used in CI research studies.

Computational Intelligence: The Way Forward

There are three main pillars of CI, viz., data-based, knowledge-based, and search-based methods. Data-based methods such as Artificial Neural Network (ANN), Support Vector Machines (SVM), Wavelet Neural Network (WNN), and Deep Learning (DL) make use of the data collected from the power transformer monitoring processes, to learn from the data, to identify and analyse the patterns, to make effective decisions in the pursuit of less preventive maintenance and efficiency.

Knowledge-based methods reason and make decisions based on the heuristic knowledge derived from data (or provided by humans) to solve complex problems, such as the Expert System (ES), Fuzzy Logic (FL), and Adaptive Neural Fuzzy Inference System (ANFIS).

Search-based methods exhibit powerful search capability in solving complex optimisation problems that often involve multiple conflicting objectives, such as the Genetic Algorithm (GA), Particle Swarm Optimisation (PSO), Gene Expression Programming (GEP) and Artificial Immune System (AIS).

When choosing the appropriate CI algorithm for a real-world power transformer diagnosis, one must consider several factors: (1) the model, (2) the category of the model (3) the strength and limitation of the model, (4) the tools used, (5) whether similar research has been carried out before, and if yes, when? (6) the corresponding applications with respect to the model - the what? (7) the motivation of the research implementation - the why?

These factors have been considered and explained in "Computational Intelligence for Preventive Maintenance of Power Transformers", Applied Soft Computing, 2021 (S.Y. Wong and others) [7].

An analysis has been published depicting the distribution of CI-based methods pertaining to the condition assessment of transformers from 2010-2021, as presented in Figure 5. It shows that the Artificial Neural Network (ANN) is the most widely used model, in the literature. This is followed by DL, FL, and PSO. Moving forward, there are clearly many exciting areas for CI researchers to drive innovation in the context of preventive maintenance for transformers.



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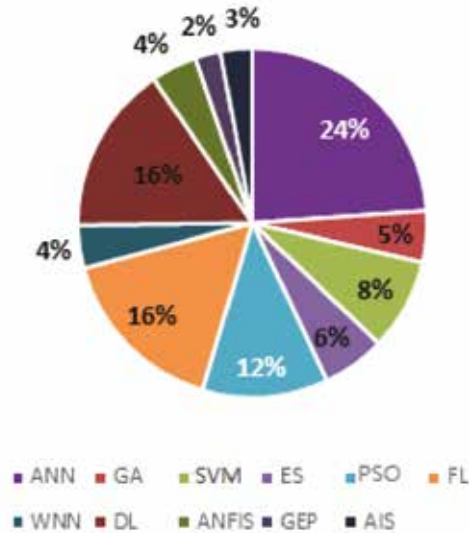


Figure 5: Publications of different CI methods for power transformer fault detection and diagnosis from 2010-2021

Safe Operation

One of the main factors affecting the safe operation of transformers is internal short-circuit faults. Some transformers experience winding deformation and even insulation breakdown when hit by short-circuit currents below the specified strength. The cumulative effect of winding deformation can cause serious malfunctions. Transformer short-circuit accidents do great harm to the operation of the power grid system. Another safety hazard is the overload operation of the transformers. To avoid the occurrence of accidents, effective control measures must be taken from various aspects to ensure the safe and stable operation of the transformer and the power grid system. Therefore, applying CI methods to perform online or offline control measurements of power transformer faults, especially internal faults, is a powerful tool to provide predictive maintenance actions for engineers. The CI algorithms can protect the power transformer and improve the security of the working environment for both the power grid, and engineers.

Power Quality

Power quality includes four related terms: Voltage Quality, Current Quality, Supply Quality, Consumption Quality. Poor power quality has a significant negative impact on industrial processes and the commercial sector. From the perspective of power quality, the needs of industrial processes are different, and each approach has specific weaknesses in terms of power quality attributes. Important power quality considerations for industrial end-user centres are costs associated with machine downtime, clean-up costs, product quality, and equipment failures.

The primary method of recognising and identifying power quality is based on visual inspection of the disturbance waveform, which may depend on the power monitoring instruments to continuously monitor power delivered to customer sites and record the disturbance waveforms. The consequence of this method is that large data files are produced for power quality engineers to inspect in the disturbance waveforms. Therefore, the development of CI methods in signal analysis for automatically characterising and identifying various power quality disturbances reduces the data workload of engineers [8]. The application of CI-based methods mainly performs pattern recognition or signal processing to detect, localise, estimate, and classify disturbances in the supply lines.

Power System

Reliability -- Power system reliability will improve when transformer incipient faults are detected and eliminated before they deteriorate to a severe state. Therefore, the search for a reliable method for incipient fault detection in power transformers is still a topic of interest in many utilities.

Reliable and stable flow of energy is essential for all electrical utility companies, making power transformer one of the most important assets and largest investments. For these reasons, the condition assessment and incipient fault analysis of transformer are high priorities.

Energy Security

With the rapid rate of population growth, urbanisation, and economic growth, the demand of electricity continues to grow. Hence, the first thing to take into consideration is the condition assessment of the electrical equipment. It is of utmost importance to make sure that the equipment (especially the transformer) is operating at its planned working condition to deliver the optimum efficiency.

Energy security can be improved by ensuring the availability and continual un-interrupted flow of energy supply to meet the demand of the nation, which impacts national security. The security of energy supply becomes a risk management strategy with strong references to cost-effectiveness associated with both energy supply and energy demand. The question is how to interpret a situation in which the imbalance between the supply and the demand for electricity is so big that it leads to a loss much larger than it would have been if the condition assessment and incipient fault analysis of the transformer had been taken care of in advance. Energy security concerns the ability to satisfy energy needs by the energy systems. This stems above all from the risk of interruptions of electricity delivery at determined times.

Does this mean that a stick-to-the-bone Dissolved Gas in Oil (DGA) expert need to abandon his classical arsenal?

No, of course not! Digitalisation and CI technologies do not replace conventional methods, but with the availability of digitalisation and CI analyses, better plans can be made with regard to fault diagnosis of power transformers. As such, the necessary decision-making processes can be accelerated, avoiding power disruption due to downtime of the transformers. In other words, these models complement the conventional methods by providing learning capabilities to maximise reliability, optimise operations, and minimise maintenance costs. CI-based models can help revolutionise the current diagnostic practices, allowing industry practitioners to reap the benefits of CI in the maintenance of power transformers in the long run.

Conclusion

As a key-enabler in IR4.0, considerable advancement in digitalisation and CI is expected to take place, resulting in new preventive maintenance regimes for power transformers that are more critical than ever in creating a sustainable future. Through better monitoring and improved maintenance, CI methods can reduce the frequency of unplanned outages, as well as limit the duration of downtime by quickly detecting the point of failure and recognising the cause of failure. This enhances the productivity, safety, accessibility, and sustainability of electrical power system, and improves the resilience and reliability of supply. Information and communication technologies are also changing markets, businesses and employment. New business models are emerging.

“Digitalisation and CI technologies do not replace conventional methods, but with the availability of digitalisation and CI analyses, better plans can be made with regard to fault diagnosis of power transformers”

Policy-makers, business executives and other stakeholders are encouraged to embrace digitalisation and CI methods in their business operations to promote the digital economy and transformation, in line with the long-term goals as outlined in Wawasan Kemakmuran Bersama 2030 (WKB 2030), i.e., Shared Prosperity Vision 2030, and the Malaysia Digital Economy Blueprint, at the same time realising the aspirations of International Sustainable Development



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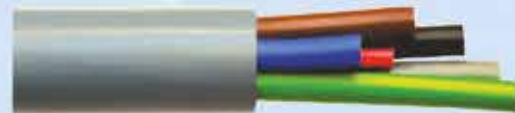
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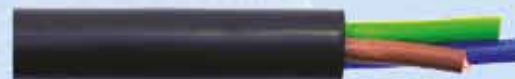
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Meeting with AFME, Spain



A delegation from the Spanish Association of Electrical Equipment Manufacturers (AFME) visited Kuala Lumpur, and TEEAM was invited by the Economic & Commercial Office of the Embassy of Spain, Kuala Lumpur, to meet the Spanish delegation on 28 November 2022. At the meeting, which was held at the Spanish Economic & Commercial Office at Menara Boustead, Kuala Lumpur, the delegates and TEEAM explored business opportunities and exchanged views on the electrical equipment markets of Spain and Malaysia. TEEAM was represented by its Honorary Secretary, Ir. Dr. Ng Kok Chiang, and Past President, Mr Suresh Kumar Gorasia. It was a very fruitful meeting and both countries look forward to business and technical collaborations plus exporting opportunities.



A group photo concluded the very fruitful meeting.



..... Continue Digitalisation & Computational Intelligence Revolutionise Power Transformer Maintenance

Goals (SDGs) advocated by the United Nations, primarily SDG7: Clean and Affordable Energy and SDG9: Industry, Innovation and Infrastructure.

This article seeks to provide greater clarity to industry stakeholders and decision-makers in Government on how digitalisation revolutionises the way maintenance can be carried out for equipment in the electrical power system using digital tools and technology in the decades to come, besides offering insights into the transformational potential of CI that can help drive strategic initiatives for smart condition monitoring and fault diagnosis to propel the country towards a more sustainable, secure and smarter energy future.

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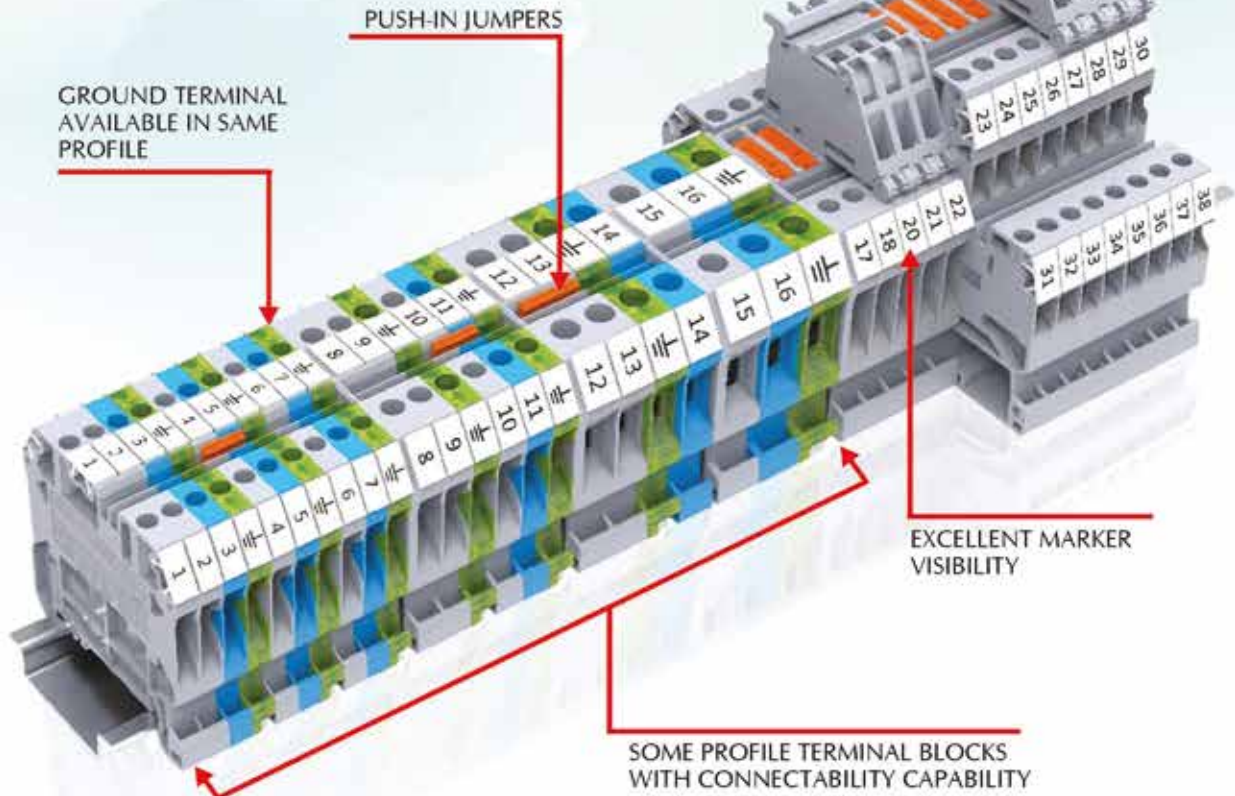
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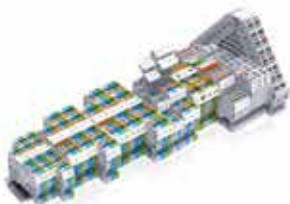
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Modular Wiring System

The Late, Dato' Ir. Dr. Abu Hashim Abd Ghani

Electrical installations have remained relatively unchanged for decades, relying on traditional hard-wired systems which are labour intensive, offer little in flexibility, and are not cost-effective or time efficient.

The concept of using pre-fabricated components in the construction industry is certainly not new and continues to be cost-effective and efficient. While great strides have been made in fast-tracking many building construction tasks, simplifying electricity installations remains slow and engineers have been reluctant to uptake modern trends such as modular wiring systems. Buildings can go up in double-quick time, but fitting-out the electrical installation takes just as long as a traditional hard-wired electrical installation.

Modular wiring systems have been in existence for more than two decades in the UK, Europe and North America, leading the way to modular wiring installations. The Petronas Twin Towers in KLCC, the ERICSSON Head Office in Cyberjaya, the Securities Commission HQ in Damansara, Bank Negara Financial & Resource Centre in Bank Negara and the NUCLEUS Tower in Mutiara Damansara are amongst the first few projects here in Malaysia where modular wiring systems have been used.

Nevertheless, today many practising engineers and contractors still resist using modular wiring systems. This usually stems from a lack of knowledge and familiarity with the design and installation of pre-fabricated wiring systems. The biggest impediment to adopting modular wiring systems is the reluctance to change and try something new. They see any change in approach as a potential risk.

Given only a promise of increased efficiency and better use of resources, most engineers are reluctant to try something new and comfortably fall back on the same old traditional method of hard-wired installations due to familiarity and a proven track record. In Malaysia, the construction industry is experiencing a labour shortage because it is very much dependent on cheap foreign labour. In the current COVID-19 situation, these resources are being repatriated to their respective home countries and have created a huge vacuum that local resources are just not available to fill.

With the COVID-19 situation remaining for some time, our industries should reflect on the future, and not rely on the traditional hard-wired system and cheap foreign labour. The industry should move forward and embrace available new technologies. Given the inevitable shortage of labour and semi-skilled workers, local industry players should resort to pre-fabricated components and not rely on traditional hard-wired systems.

What is Modular Wiring System?

Modular wiring systems are the perfect solution to avoid intensive labour usage and they offer flexibility and cost-savings. The modular system is designed and pre-fabricated off-site in a manufacturing facility that ensures quality control. They are functionally tested, and clinically assembled according to design requirements. This eliminates the need for on-site electrical connections, reduces the number of qualified on-site electricians and other workers needed to carry out the installation work.

The modular wiring system has many indisputable advantages compared with the conventional wiring system, such as:

- Minimum installation time;
- Minimum site labour required;
- Factory pre-assembled and pre-tested;
- Utilising Plug and Play components;
- Less containment required by using a cable basket;
- Quality assurance as the system is manufactured in a factory;
- Safe installation as the system is colour-coded and has polarised connections;
- Zero wastage as the system is pre-assembled in a factory; and
- Cost savings.

Modular Wiring System Components (I-MOS SYSTEM)

Modular Terminal Box



The Terminal Box (TB) is placed or mounted next to the incoming cable management trunking or cable basket. It is installed using a metal clamping base plate accessory.

It provides easy electrical installation for the lighting and power sub-circuits. The sub-circuit wiring is installed using trunking or cable basket from the Distribution Board to the TB. This is the first operation on-site by the installer.

The TB provides connectivity via a length of Modular Fly Cord lighting or power (3-Cores 1.5 mm² PVC/Copper Wire) lighting or power connected to the lighting or the power sub-circuit supply to a Modular Ceiling Distribution Box.

Modular Ceiling Distribution Box



The modular Ceiling Distribution Box (CDB) is for the lighting or power distribution sub-circuit connections. It provides two-way connections for the lighting and power sub-circuits using plug and play modular components.

This CDB provides connectivity via a length of Modular Fly Cord lighting or power (3-Cores 1.5 or 2.5 mm² PVC/Copper Wire) connected to the Luminaire Box (LB) or Power Box (PB).

Modular System Switch Box



This Switch Box (SB) is for the sub-circuit light switch connections. It provides switched and un-switched (bypass) connections from the light switch to the CDB and the LB using plug and play modular components.



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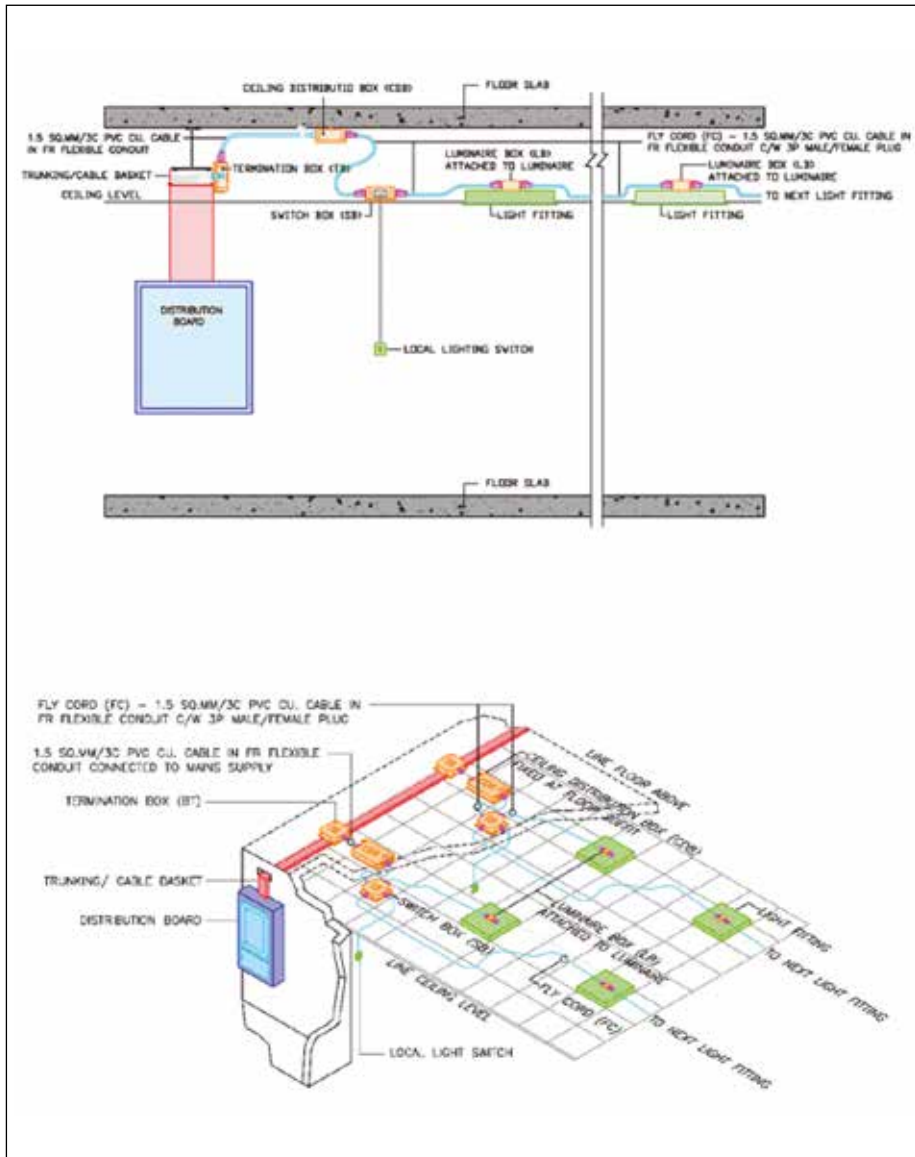
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Modular Wiring System Installation Illustration



The SB provides connectivity via a length of Modular Fly Cord lighting (3-Cores 1.5 or 2.5 mm² PVC/Copper Wire) connected to the CDB or the LB.

Modular Splitter (T) with Dropper (ST-LD)



The Splitter T Light (S-LD) is for the sub-circuit tapping-off connections. It provides a branch connection from the sub-circuit to the luminaire.

This SB-LD provides connectivity via a length of lighting wire dropper (3-Cores 1.5

mm² PVC/ Copper Wire) connected to the luminaire.

Modular Luminaire Box (LB)



This Luminaire Box (LB) is for the luminaire sub-circuit connections. It provides the sub-circuit connection to the luminaire using plug and play modular components. The LB is installed and assembled to the luminaire at the factory.

This LB provides connectivity via a length of Modular Fly Cord lighting (3-Cores 1.5 or 2.5 mm² PVC/Copper Wire) connected to the CDB or the LB.

Modular Fly Cord



This Fly Cord (FC) is the lighting and power sub-circuit wire connector for the modular wiring system. It provides interlink connections for the TB, CDB, SB, ST-LD and LB using plug and play modular components.

This FC is custom-fabricated into a designated length of between 1.5m to 15m using 3-Cores 1.5 or 2.5 mm² PVC/Copper wire and jacket with Fire-Retardant (FR) flexible conduit with rated 3-pole polarised male/female plug and socket at both ends.

Conclusion

It takes the disastrous COVID-19 pandemic to change the business world, the way people live and work, and the emergence of new technologies connecting people. It has completely altered the landscape of industries and ushered in a New Normal. Construction industries in Malaysia must welcome the changes, embrace new technologies and move forward.

For the Construction Industry to make the bold move forward, it needs recognition and a leading push from the custodians of the Malaysia Regulatory Authorities, mainly The Jabatan Kerja Raya (JKR – Public Works Department) and the Construction Industry Development Board (CIDB), to step up and take the lead in embracing new technologies, such as the Modular Wiring System.

Once the authorities encourage the use of this new technology, market forces will drive industry with advanced technologies to reduce the dependence on unsecured cheap foreign labour, improve construction time, increase construction-efficiency, saving both direct and indirect costs.

Acknowledgement

TEEAM is deeply grateful to the Board of Engineers Malaysia for granting permission to re-publish this article from their publication, THE INGENIEUR Vol. 89 January – March 2022. We are deeply grateful to the esteemed Author, the Late, Dato' Ir. Dr. Abu Hashim Abd Ghani for his most valuable research and insights.

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Malaysian Economic Statistics Review

Volume 12/2022:

Key Reviews & Overviews

The Department of Statistics, Malaysia (DOSM) had recently released the Malaysian Economic Statistics Review (MESR) Volume 12/2022 on 29 December 2022. This publication presents the latest economic scenario based on the official macro-economic statistics released by DOSM. This edition of the publication focuses on the economic scenario for October 2022, with highlights on some forthcoming statistics for November 2022. The MESR will assist users and readers to have the latest information on the economic performance, and in much greater detail.

Key Reviews

- Based on the International Monetary Fund (IMF) World Economic Outlook (October 2022), the global economy is expected to grow by 2.7 per cent in 2023. Meanwhile, advanced economies are anticipated to grow by 1.1 per cent, down from 2.4 per cent in 2022. As for emerging and developing Asia, the economy is projected to grow by 4.9 per cent in 2023, up from 4.4 per cent in 2022. Adding to this, the Economic Outlook 2023 by the Ministry of Finance forecasted Malaysia's economic growth to moderate between 4.0 per cent and 5.0 per cent in 2023, in line with the IMF's global forecast.
- Malaysia's natural rubber production declined by 26.3 per cent to 31,795 tonnes in October 2022, down from 43,127 tonnes in the same month of 2021. On a monthly basis, the natural rubber production fell 10.3 per cent as compared to 35,460 tonnes in September 2022. Meanwhile, the production of fresh fruit bunches increased by 6.2 per cent to 8,619,339 tonnes in November 2022 as opposed to November 2021 (8,114,872 tonnes). However, the month-on-month comparison showed a decrease of 7.2 per cent over October 2022 (9,286,351 tonnes).
- Looking at the performance of industries in Malaysia, the Industrial Production Index (IPI) showed a modest growth of 4.6 per cent in October 2022 as compared to the same month of the previous year. The rise in the IPI for this month was supported by increases in the Mining index (8.6%) and Manufacturing index (4.2%). In the meantime, Manufacturing sales in October 2022 rose 12.9 per cent year-on-year to a record RM158.9 billion. The increase in sales value was impelled by the Petroleum, Chemical, Rubber & Plastic Products, 23.8 per cent, Electrical & Electronics Products, 16.6 per cent and Food, Beverages & Tobacco Products, 4.6 per cent.
- Malaysia's Wholesale & Retail Trade sales recorded a double-digit increase of 15.2 per cent year-on-year, amounting to RM133.9 billion in October 2022. The growth was owing to the lower base effect in 2021 as well as the school holiday and Deepavali celebration. The Retail Trade sub-sector rose RM12.0 billion or 26.0 per cent to a record RM58.3 billion.
- From the price standpoint, Malaysia's inflation rate in October 2022 increased 4.0 per cent year-on-year, lower than the rate recorded in September 2022 (4.5%). On an annual basis, the inflation for Food group remained the main contributor by registering an increase of 7.1 per cent for this month. Besides that, among the subgroups that showed slower growth were Vegetables (4.8%) and Oils & fats (2.6%). In November 2022, Malaysia's inflation increased 4.0 per cent as compared to the same month of the previous year.
- Similarly, the Producer Price Index increased by 4.0 per cent year-on-year in October 2022, lower than the 4.9 per cent rise in the previous month. The moderate rise in the PPI was led by a 7.3 per cent increase in Manufacturing index (September 2022: 8.1%). This

was followed by Water supply and Electricity & gas supply indices, which increased 4.9 per cent and 1.2 per cent respectively. Meanwhile, Agriculture, forestry & fishing index declined to a negative 18.2 per cent and Mining index to negative 0.5 per cent in October 2022. In November 2022, PPI recorded at 3.2 per cent lower than in October 2022.

- As for Malaysia's trade performance, the total trade in October 2022 recorded a double-digit growth of 21.1 per cent year-on-year to RM245.2 billion from RM202.4 billion in the same month last year. Exports edged up by 15.0 per cent to RM131.6 billion, while imports grew 29.2 per cent to RM113.5 billion. As a result, the trade balance posted a surplus of RM18.1 billion. In November 2022, Malaysia's trade remained on a steady trajectory but at a slower pace, inclining 15.6 per cent to RM238.2 billion on a year-on-year basis.
- Pertaining to the labour market scenario, the number of employed persons increased by 526.9 thousand persons or 3.4 per cent as compared with the preceding year to reach 16.08 million persons in October 2022. The employment-to-population ratio was recorded at 67.2 per cent and the unemployment rate was 3.6 per cent in October 2022.
- Overall, the Leading Index (LI) in October 2022 indicates that the Malaysian economy is expected to have moderate growth in the months ahead in 2023, a repercussion of global economic uncertainty. The LI increased 0.4 per cent to 109.6 points in October 2022 (October 2021: 109.2 points), an increase of 0.4 index points.

Overview of the World Economy

The year 2022 has almost reached its end, and the global economy continues to recover from the pandemic despite many headwinds that have slowed overall economic growth. According to the International Monetary Funds (IMF), global output will increase by 3.2 per cent this year, less than 6.0 per cent in 2021. In summary, soaring inflation, the Russia-Ukraine conflict, and frequent lockdowns under China's zero COVID-19 policy were among the challenges and are likely to remain uncertain in the near future. The global economy is expected to grow by 2.7 per cent in 2023, while advanced economies will grow by 1.1

Table 1: IMF's Forecast of Real GDP Growth, 2021 - 2023

Countries	2021	Projections	
		2022	2023
World	6.0	3.2	2.7
Advanced economies	5.2	2.4	1.1
United States of America	5.7	1.6	1.0
Japan	1.7	1.7	1.6
United Kingdom	7.4	3.6	0.3
Singapore	7.6	3.0	2.3
Emerging and developing Asia	7.2	4.4	4.9
China	8.1	3.2	4.4
India	8.7	6.8	6.1
Malaysia	3.1	5.4	4.4
Indonesia	3.7	5.3	5.0
Vietnam	2.6	7.0	6.2

Source: IMF World Economic Outlook, October 2022

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per cent, down from 2.4 per cent in 2022. Meanwhile, emerging and developing Asia is expected to grow by 4.9 per cent, up from 4.4 per cent in 2022.

The National Statistics Office of the United Kingdom (UK) reported that the GDP in October 2022 rebound marginally by 0.5 per cent after contracting by 0.6 per cent in September 2022. The Services sector grew by 0.6 per cent, mainly driven by wholesale and retail trade as well as services-related human health and social work activities. The Manufacturing sector also posted a growth of 0.7 per cent driven by manufacture of pharmaceuticals and transport equipment. Moreover, the Construction sector increased by 0.8 per cent, which is the highest level of construction output since records began in January 2010. The growth was supported by increases in new projects, and repair and maintenance.

Meanwhile, the National Bureau of Statistics of China reported China's economy posted a growth of 3.8 per cent in October 2022. All three main industries showed better performance: Mining was up 7.6 per cent, Manufacturing grew by 3.3 per cent and the production and supply of electricity, thermal power, gas and water were up by 4.8 per cent. Nonetheless, the Index of Services Production contracted marginally by 0.1 per cent this month.

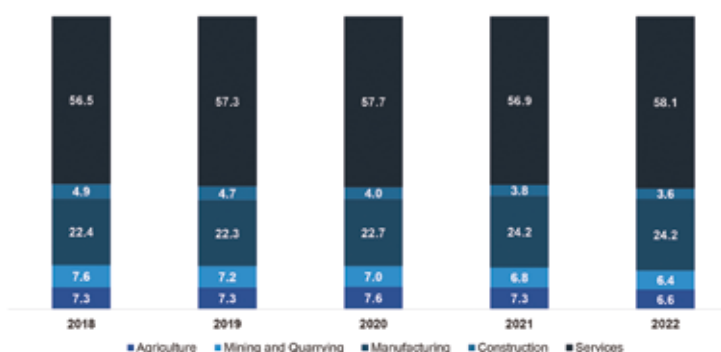
Statistics Canada announced that the GDP in September grew 0.1 per cent on a month-on-month basis as compared to 0.3 per cent in August 2022. The performance was driven by the mining & quarrying sector, which increased by 1.2 per cent, attributed to higher production of crude bitumen. Furthermore, the agriculture sector rose 0.8 per cent, led by better crop production. Meanwhile, the manufacturing sector declined 0.1 per cent, which was influenced by a decrease in non-durable manufactured goods at 0.9 per cent. The contraction was cushioned by the increase in durable manufactured goods at 0.6 per cent.

Overview of Malaysia's Economy

Malaysia's economy shows an encouraging recovery after recording robust growth in three consecutive quarters in 2022. This has led Malaysia's economy to expand by 9.3 per cent in the first nine months (January – September) of 2022, as compared to 2.9 per cent in the same period of 2021.

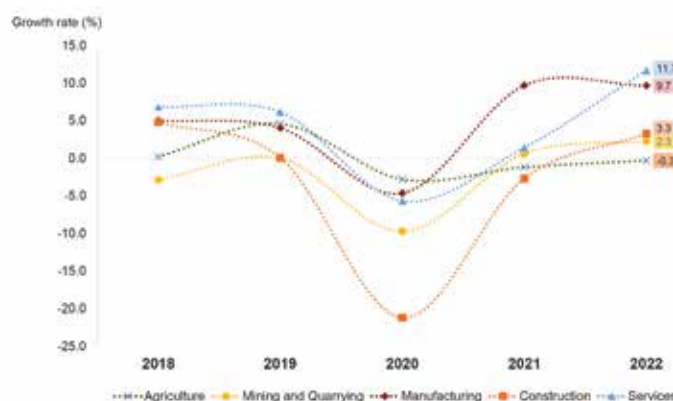
The contribution of the Services sector increased in the first nine months of 2022 to 58.1 per cent (2021: 56.9%), thus maintaining its position as the main contributor to Malaysia's economy. The Manufacturing sector retained its 24.2 per cent share, while the remaining 16.6 per cent was contributed by the Agriculture, Mining & quarrying and Construction sectors (2021: 17.9%) (Chart 1).

Chart 1: Malaysia's Economic Structure for First Nine Months (%), 2018 - 2022



Based on performance of the first nine months in 2022, the Services and Manufacturing sectors have been the anchor on the production side, with all sectors recording positive growth except the Agriculture sector (Chart 2). During the period, the Services sector surged to 11.7 per cent as against 1.4 per cent in the same period in 2021, primarily driven by the Wholesale & retail trade (15.0%) and the Transportation & storage (34.2%) sub-sectors.

Chart 2: GDP Growth for First Nine Months (%), 2018 - 2022



The Manufacturing sector sustained its growth, posting a 9.7 per cent increase during this period and the expansion of this sector was fuelled by the strong momentum in Electrical, electronic and optical products, which accelerated to 16.0 per cent, followed by Transport equipment, and other manufacturing and repair which surged to 18.8 per cent. Meanwhile, the Mining & quarrying sector rose 2.3 per cent, supported by an increase of 5.4 per cent in Natural gas sub-sector.

In addition, the Construction sector rebounded to 3.3 per cent from a decline of 2.7 per cent in the same period last year. The better performance was underpinned by Non-residential buildings (12.8%) and Specialised construction activities (10.3%). Nevertheless, the Agriculture sector decreased marginally by 0.3 per cent, which was influenced by the contractions in other agriculture (-2.8%) and Rubber (-19.0%) sub-sectors. On the contrary, the Oil palm sub-sector increased 1.7 per cent during the period, in tandem with the higher production of fresh fruit bunches.

Chart 3: Leading Index (2015=100) and Business Cycle (Grey Shaded Areas), January 1991 - October 2022



Malaysia's Leading Index (LI) increased 0.4 per cent to 109.6 points in October 2022 (October 2021: 109.2 points), an increase of 0.4 index points. This increase was supported by the Number of Housing Units Approved and Real Imports of Other Basic Precious & Other Non-ferrous Metals. Based on the monthly performance, LI recorded a negative 0.3 per cent in the reference month compared to a negative 1.3 per cent in September 2022. This trend was driven by the Bursa Malaysia Industrial Index (0.6%), Real Imports of Semi-Conductors (0.3%), Real Money Supply, M1 (0.1%) and Expected Sales Value, Manufacturing (0.1%). Looking at the smoothed long-term trend in October 2022, LI started trending below the 100.0 point trend. Accordingly, the Malaysian economy is expected to start moderating in the months ahead in 2023, due to the impacts of the global economic uncertainty.

The Way Forward

In October 2022, the global economy continued experiencing several challenges. Higher inflation rates, Russia's invasion of Ukraine and the lingering COVID-19 pandemic brought about the tightening of monetary policy in most regions. Further to this, global economic activity is undergoing a slowdown on a broader basis, in addition to the higher pressure on inflation rates than in the past few decades. However, Malaysia's economy in October 2022 kept up the positive trends as shown by major monthly economic indicators. These signs of progress gave the much-needed impetus for the country's economic growth.

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In the external sector, Malaysia's trade remained steady in October 2022, albeit at a slower pace, posting an increase of 21.1 per cent to RM245.2 billion from RM202.4 billion in October 2021. Exports recorded the slowest annual growth for this year, expanding by 15.0 per cent to RM131.6 billion, while imports surged by 29.2 per cent to RM113.5 billion. The trade balance remained in surplus for the 30th consecutive month with RM18.1 billion, and which fell by 32.0 per cent compared to a year ago. Whereas, Malaysia's trade for November 2022 inclined 15.6 per cent and remained at a slower pace of RM238.2 billion on a year-on-year basis.

Malaysia's Industrial Production Index (IPI) experienced a deceleration in growth in October 2022 due to lacklustre domestic and external demands as well as a low base effect. After four consecutive months of double-digit growth, IPI growth slowed to 4.6 per cent in October 2022. The expansion of IPI during the month was contributed by increases in Mining index (8.6%) and Manufacturing index (4.2%) while Electricity index recorded a decline of 1.9 per cent. Export-oriented and domestic-oriented output recorded a growth of 5.0 per cent and 2.5 per cent respectively as compared to the same period of the previous year. Malaysia's Manufacturing sales in October 2022 stood at RM158.9 billion, up 12.9 per cent as compared to the same month in 2021. The growth in sales value was driven by Petroleum, Chemical, Rubber & Plastic Products, Electrical & Electronics Products and Food, Beverages & Tobacco Products.

In the meantime, the Wholesale & Retail Sales for October 2022 recorded double-digit growth of 15.2 per cent year-on-year. The sturdy growth was partly contributed by the base effect as well as the school holidays and the Deepavali festival celebration. In terms of the sales level, Wholesale & Retail registered a value of RM133.9 billion. The performance was attributed to the Retail Trade sub-sector which rose RM12.0 billion or 26.0 per cent to a record RM58.3 billion. Wholesale Trade and Motor Vehicles also grew 7.3 per cent to RM59.9 billion and 11.2 per cent to RM15.7 billion, respectively.

In terms of prices, the CPI increased 4.0 per cent year-on-year in October 2022 as against the same month of the preceding year. On an annual basis, the inflation for Food group remained the main contributor to this inflation rate. However, the inflation rate in October 2022 was lower than the inflation rate recorded in September 2022 (4.5%). The current statistics released revealed that, in November 2022, Malaysia's inflation rate sustained an increase of 4.0 per cent as compared to the same month of the previous year.

Furthermore, the PPI local production increased 4.0 per cent year-on-year in October 2022 lower than the 4.9 per cent rise in the previous month. The moderate rise in the PPI was led by a 7.3 per cent increase in Manufacturing index. This was followed by Water supply and

Electricity & gas supply indices which increased by 4.9 per cent and 1.2 per cent respectively.

The better economic performance in October 2022 compared to 2021 consequently led to the labour force situation to remaining stable as indicated by the higher number of employments during the month while the unemployment rate eased to the lower rate. Employed persons continued to rise in October 2022, gaining an addition of 29.3 thousand persons or 0.2 per cent from the same month in the preceding year to record 16.08 million persons. The number of employed persons who were temporarily not working declined for five consecutive months, with a reduction of 0.3 thousand persons (-0.4%) to 79.8 thousand persons in October 2022 (September 2022: 80.1 thousand persons). Meanwhile, the unemployment rate remained at 3.6 per cent whereby the number of unemployed persons reduced by 0.5 per cent or 3.0 thousand persons to 605.0 thousand. Despite recording a decline, unemployment rate remained above the pre-pandemic level (February 2020: 3.3%).

The recent Asian Development Outlook (ADO) Supplement for December 2022 highlighted that the recurrent lockdowns in the People's Republic of China (PRC), the Russian invasion of Ukraine and slowing global growth would be the three main headwinds, which will continue to hamper recovery in developing Asia. Thus, the growth forecasts for the region have been revised from 4.3 per cent to 4.2 per cent in 2022 and from 4.9 per cent to 4.6 per cent in 2023. Despite the bleak outlook, it was stated that developing Asia will grow faster than other regions and experience less inflation than most.

Accordingly, the LI for October 2022 posted an annual increase of 0.4 per cent to 109.6 points (October 2021: 109.2 points), an increase of 0.4 index points. Nevertheless, looking at the smoothed long-term trend in October 2022, LI started trending below the 100.0 point trend. Thus, it is anticipated that the Malaysian economy will start to moderate due to the effects of global economic instability in the months ahead in 2023. The full publication of the MESR Volume 12/2022 can be downloaded from the DOSM Website at www.dosm.gov.my

Acknowledgment

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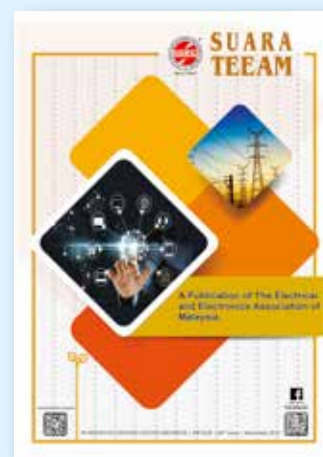
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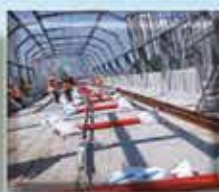
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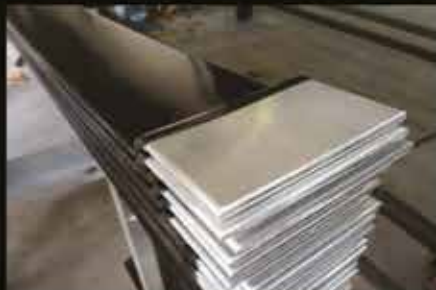


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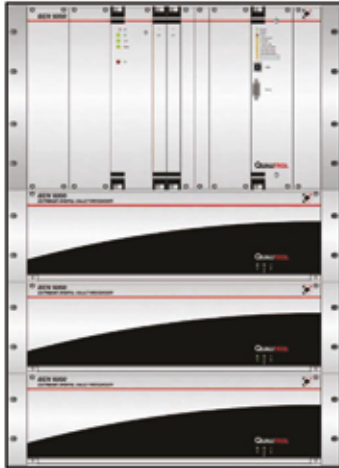
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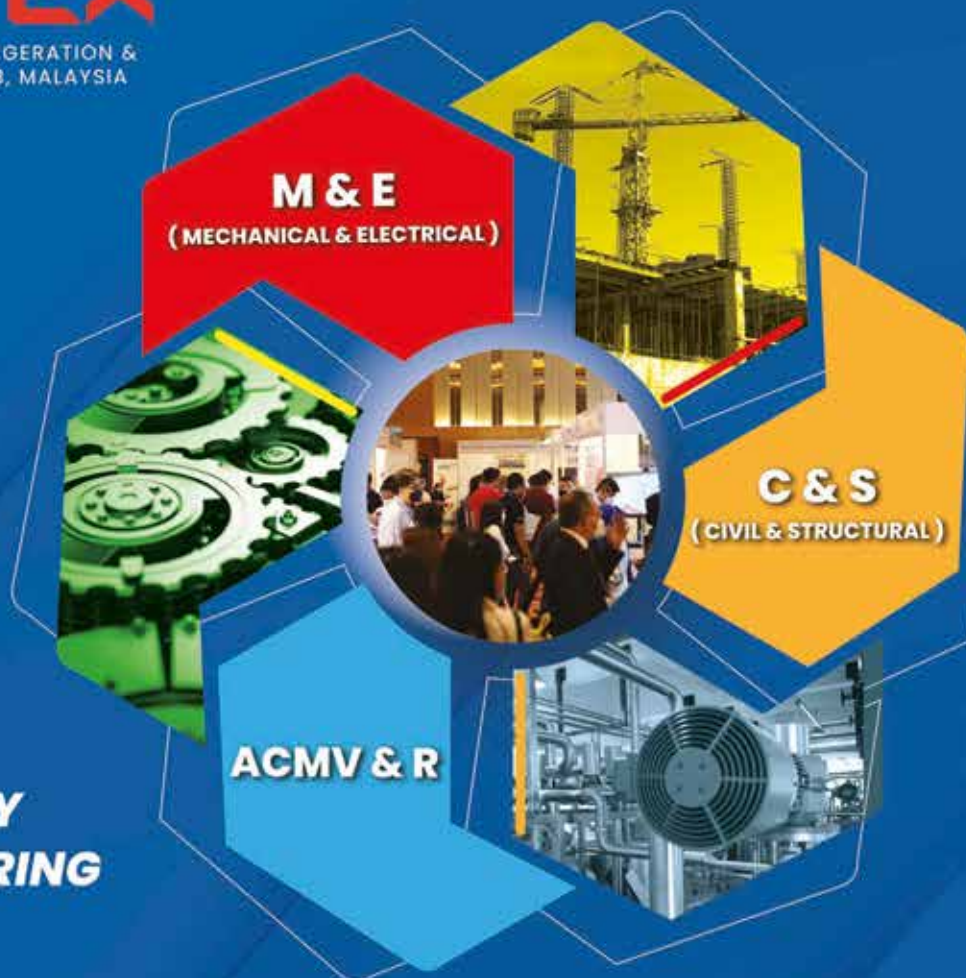
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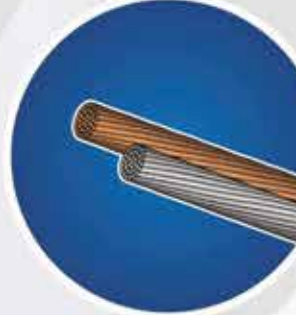
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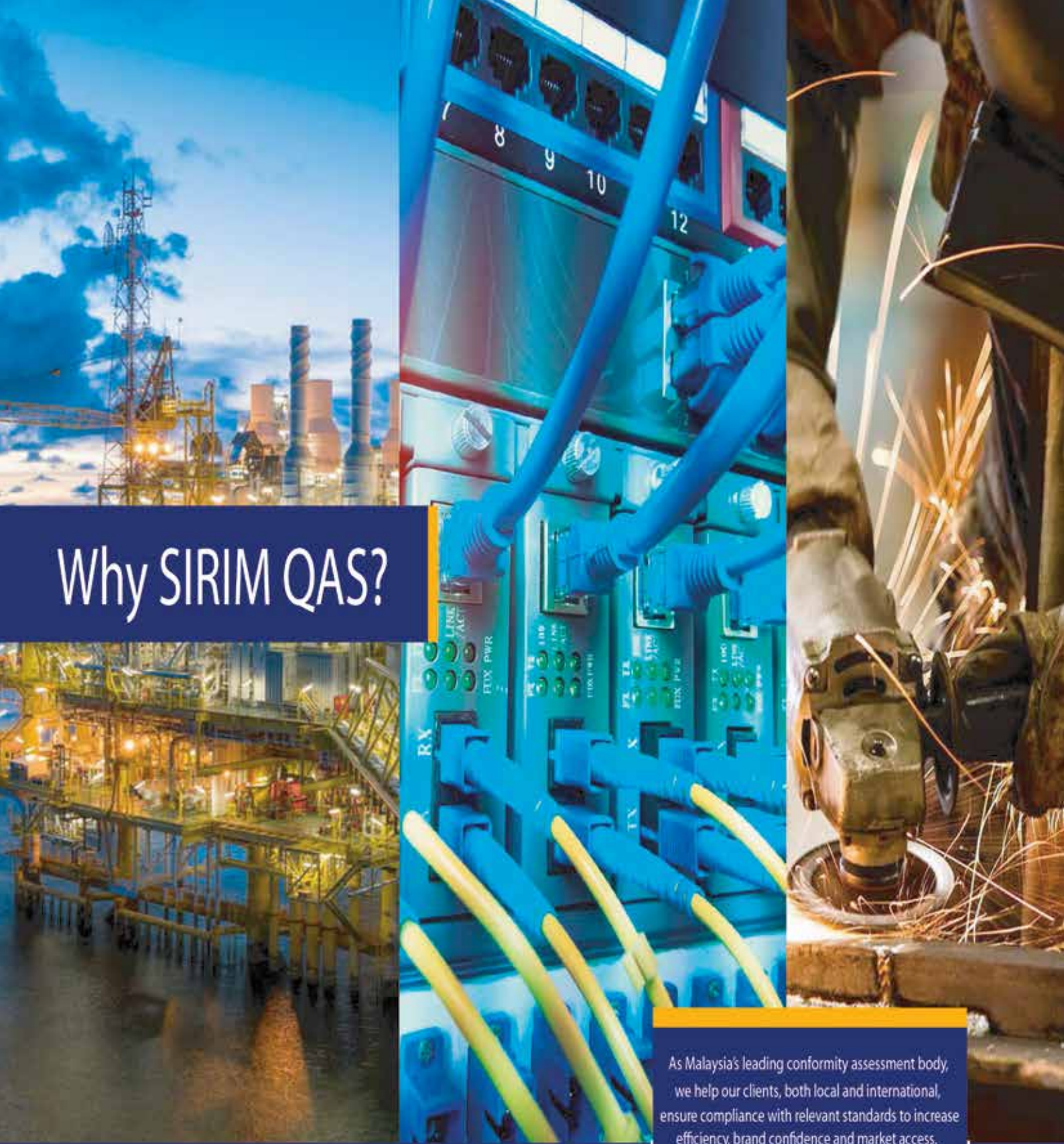
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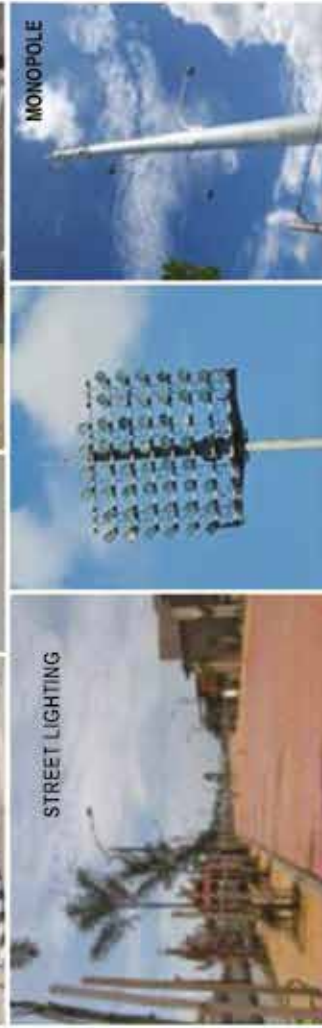
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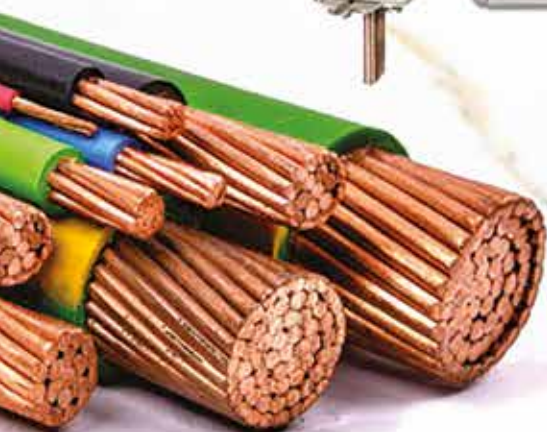
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