

KEMENTERIAN TENAGA, SAINS, TEKNOLOGI, ALAM SEKITAR DAN PERUBAHAN IKLIM

Bil	Berita	Media	Capaian Berita Penuh
22 OKTOBER 2018 (ISNIN)			
1.	<u>Driving towards sustainable business</u> This goal was in line with the Energy, Science, Technology, Environment and Climate Change Ministry's initiative to harness energy produced from waste through waste-to-energy (WTE) technology.	The Star	Rujuk lampiran 1
2.	<u>Post of building surveyor needed</u> I believe the recent scenario necessitates reinstating the post of building surveyor (but placed under the Ministry of Energy, Science, Technology, Environment and Climate Change, or Mestecc) to check on developments in critical areas such as hillslopes and land reclamation projects.	The Star	Rujuk lampiran 2
3.	<u>Pelajar cipta pengecas angin bantu jimat elektrik</u> "Saya yakin ia mampu dikembangkan ke peringkat antarabangsa sekiranya dihasilkan secara komersial",katanya.	Berita Harian	Rujuk lampiran 3
4.	<u>Powering up with the sun</u> Chow, who is also a registered Environment Impact Assessment subject consultant with the Department of Environment (DOE), said they had done a few projects where the developments sits on a contaminated site.	The Star	Rujuk lampiran 4
5.	<u>GSPARX tawar kemudahan pemasangan panel PV</u> GSPARX dan penyelesaian capex sifar itu telah dilancarkan pada Persidangan dan Pameran Antrabangsa Teknologi Hijau dan Produk Eko 2018 yang diadakan disini baru-baru ini.	Kosmo	Rujuk lampiran 5

6.	<p><u>Jangan anggap sampah tidak bernilai</u></p> <p>Menteri Tenaga, Teknologi, Sains, Perubahan Iklim dan Alam Sekitar, Yeo Bee Yin berkata, sudah sampai masanya untuk bertindak berikutan pelaksanaan kitar semula menggunakan kompos sisa dapur telah lama diperkenal.</p>	Sinar Harian	Rujuk lampiran 6
7.	<p><u>IGEM ends with partnerships to grow green economy</u></p> <p>The 9th International Greentech & Eco Products Exhibition & Conference Malaysia (IGEM 2018) organised by the Ministry of Energy, Science, Technology, Environment & Climate Change (MESTECC) ended on a celebratory note as several partnerships were forged in terms of business leads, technology transfer and innovation, reinforcing IGEM's position as the regional hub for green technology.</p>	The Borneo Post	Klik pada tajuk berita
8.	<p><u>Global warming: Malaysia needs a strategy</u></p> <p>There's some light at the end of the tunnel. The new minister of Energy, Green Technology, Science and Climate Change, Yeo Bee Yin, is surely on the right track when in a recent interview she expressed concern on the severe understaffing of the climate change unit in her ministry, and how "two years after the country signed the Paris Agreement, nothing much has been done".</p>	New Straits Times	Rujuk lampiran 7 atau klik pada tajuk berita
9.	<p><u>YB Yeo Bee Yin (Picture)</u></p>	Nanyang Siang Pau	Rujuk lampiran 8
10.	<p><u>UK household plastics found in illegal dumps in Malaysia</u></p> <p>The environment ministry did not respond to questions from Unearthed, but minister Yeo Bee Yin said in a press conference last week that imports would be tightened further, and the crackdown on illegal operators would continue.</p>	Unearthed	Klik pada tajuk berita

21 OKTOBER 2018 (AHAD)

11.	<p><u>Produk teknologi pintar, tenaga hijau pilihan premis komersial</u></p> <p>Beliau berkata demikian selepas menerima kunjungan daripada Menteri Tenaga, Sains, Teknologi, Alam Sekitar dan Perubahan Iklim (MESTECC), Yeo Bee Yin dan melancarkan GSPARX di ruang pameran pada Persidangan Produk Eco dan Teknologi Hijau Antarabangsa (IGEM) 2018, disini.</p>	Berita Harian	Rujuk lampiran 9
12.	<p><u>The dawn of a new revolution</u></p> <p>To prepare for what lies ahead, new standards are being drafted by the Department of Standards Malaysia (Standards Malaysia).</p>	The Star	Rujuk lampiran 10 atau klik pada tajuk berita
13.	<p><u>Plastic waste recycling can pay</u></p> <p>They are the Housing and Local Government Ministry; Water, Land and Natural Resources Ministry; International Trade and Industry Ministry; and the Energy, Technology, Science, Climate Change and Environment Ministry.</p>	The Star	Rujuk lampiran 11 atau klik pada tajuk berita
14.	<p><u>SPAN: Our tap water is clean, safe and free of E-Coli bacteria</u></p> <p>"No less than 38 types of physical, chemical and microbiological parameters are analysed, starting from the water treatment plant intake until the distribution system with cooperation from the Chemistry Department.</p>	The Star	Rujuk lampiran 12 atau klik pada tajuk berita
15.	<p><u>Malaysia bans waste imports as Australia battles recycling crisis</u></p> <p>Science, Technology and Environment and Climate Change minister Yeo Bee Yin said her country "will do our very best to ensure that Malaysia not be the plastic rubbish bin of developed countries".</p>	The Sydney Herald	Klik pada tajuk berita

16.	<u>Pembangunan teknologi hijau bukan terletak di bahu kerajaan semata-mata</u> Usaha mengembangkan dan membangunkan industri teknologi hijau bukan terletak pada bahu kerajaan semata-mata sebaliknya ia memerlukan sokongan daripada pelbagai pihak, kata Menteri Tenaga, Teknologi, Sains, Perubahan Iklim dan Alam Sekitar, Yeo Bee Yin.	Kosmo	Klik pada tajuk berita
17.	<u>China Tutup Impor Sampah, Buat Banyak Negara Kebingungan</u> "Kami akan melakukan yang terbaik untuk memastikan bahwa Malaysia tidak menjadi tempat sampah plastik negara-negara maju," kata Menteri Sains, Teknologi dan Lingkungan dan Perubahan Iklim Malaysia Yeo Bee Yin.	Akurat.co	Klik pada tajuk berita
20 OKTOBER 2018 (SABTU)			
18.	<u>Solar coverage</u> Energy, Science, Technology, Environment and Climate Change Minister, Yeo Bee Yin (second from left) which (from left) Malaysian Photovoltaic Industry Association president Chin Soo Mau.	New Straits Times	Rujuk lampiran 13
19.	<u>TNB perkenal GSPARX</u> GSPARX telah dilancarkan sempena Persidangan dan Pameran Antarabangsa Teknologi Hijau dan Produk Eko (IGEM) 2018 oleh Menteri Tenaga, Sains, Teknologi, Alam Sekitar & Perubahan Iklim, Yeo Bee Yin.	Utusan Malaysia	Rujuk lampiran 14
20.	<u>TNB komited jayakan pembangunan lestari</u> Ia disaksikan Menteri Tenaga, Sains, Teknologi, Alam Sekitar dan Perubahan Iklim (MESTECC), Yeo Bee Yin dan Ketua Pegawai Eksekutif TNB, Datuk Seri Ir Azman Mohd.	Berita Harian	Rujuk lampiran 15
21.	<u>Sirim-Fraunhofer salur dana RM35 juta</u> Sirim Berhad (SIRIM) menyalurkan dana hampir RM35 juta kepada usahawan perusahaan kecil	Utusan Malaysia	Rujuk lampiran 16

	dan sederhana (PKS) di bawah program Sirim-Fraunhofer.		
22.	<p><u>No electricity tariff increase for energy efficiency agenda – Yeo</u></p> <p>The government is not in favour of calls to increase the electricity tariff as part of a plan to drive the energy efficiency agenda, says Energy, Science, Technology, Environment, and Climate Change Minister Yeo Bee Yin.</p>	New Straits Times	Klik pada tajuk berita
23.	<p><u>Helpless in bid to save farmlands</u></p> <p>“We would like to invite Energy, Science, Technology and Climate Change Minister Yeo Bee Yin to visit our village and look at our situation,” said a farmer.</p>	The Star	Klik pada tajuk berita
24.	<p><u>No electricity tariff increase for energy efficiency agenda, says Yeo</u></p> <p>The Energy, Science, Technology, Environment, and Climate Change Minister said the suggestion to increase the tariff so that people use less electricity thus increase energy efficiency is not applicable.</p>	The Star	Klik pada tajuk berita
25.	<p><u>Energy efficiency agenda doesn't mean electricity tariff hike, says minister</u></p> <p>The government is not in favour of calls to increase the electricity tariff as part of a plan to drive the energy efficiency agenda, says Energy, Science, Technology, Environment, and Climate Change Minister Yeo Bee Yin.</p>	Malay Mail	Klik pada tajuk berita
26.	<p><u>Tiada kenaikan tarif elektrik bagi agenda kecekapan tenaga</u></p> <p>Menteri Tenaga, Sains, Teknologi, Alam Sekitar dan Perubahan Iklim Yeo Bee Yin berkata kerajaan tidak akan menaikkan tarif elektrik dalam usahanya memacu agenda kecekapan tenaga.</p>	Sinar Harian	Klik pada tajuk berita

27.	<p><u>No electricity tariff increase for energy efficiency agenda – Yeo</u></p> <p>The government is not in favour of calls to increase the electricity tariff as part of a plan to drive the energy efficiency agenda, says Energy, Science, Technology, Environment, and Climate Change Minister Yeo Bee Yin.</p>	BERNAMA	Klik pada tajuk berita
28.	<p><u>Intense Competition At Inaugural NEA</u></p> <p>Amid intense competition, 10 organisations emerged as the winners in the inaugural National Energy Awards (NEA) organised by the Ministry of Energy, Science, Technology, Environment and Climate Change at the Kuala Lumpur Convention Centre (KLCC) last night</p>	BERNAMA	Klik pada tajuk berita
29.	<p><u>No power tariff hike for energy efficiency agenda, says minister</u></p> <p>The government is not in favour of calls to increase the electricity tariff as part of a plan to drive the energy efficiency agenda, says Energy, Science, Technology, Environment, and Climate Change Minister Yeo Bee Yin.</p>	The Edge Market	Klik pada tajuk berita
30.	<p><u>Tiada kenaikan tarif elektrik bagi agenda kecekapan tenaga – Yeo</u></p> <p>Menteri Tenaga, Sains, Teknologi, Alam Sekitar dan Perubahan Iklim Yeo Bee Yin berkata kerajaan tidak akan menaikkan tarif elektrik dalam usahanya memacu agenda kecekapan tenaga.</p>	Astro Awani	Klik pada tajuk berita
31.	<p><u>Yeo: No electricity tariff increase to promote green agenda</u></p> <p>Energy, Science, Technology, Environment and Climate Change Minister Yeo Bee Yin said there are many more effective ways which could be implemented to achieve the same goal, without burdening the people.</p>	Malaysia Kini	Klik pada tajuk berita

32.	<u>Menteri: Kenaikan tarif elektrik bukan cara promosi agenda hijau</u> Menurut Menteri Tenaga, Teknologi, Sains, Perubahan Iklim dan Alam Sekitar Yeo Bee Yin, ada banyak lagi cara lebih berkesan yang dapat dilaksanakan untuk mencapai matlamat itu, tanpa membebankan rakyat.	Malaysia Kini	Klik pada tajuk berita
33.	<u>No electricity tariff hike planned, says minister</u> THE government is not in favour of calls to increase the electricity tariff as part of a plan to drive the energy efficiency agenda, says Energy, Science, Technology, Environment and Climate Change Minister Yeo Bee Yin.	The Malaysian Insight	Klik pada tajuk berita

19 OKTOBER 2018 (JUMAAT)

34.	<u>Tenaga unit to offer solar PV installations for homes by year end</u> Minister of Energy, Science, Technology, Environment and Climate Change Yeo Bee Yin had on Thursday launched GSPARX and its zero upfront solution.	The Star	Klik pada tajuk berita
35.	<u>Large solar plants, net metering to help RE generation push</u> Energy, Science, Technology, Environment and Climate Change Minister Yeo Bee Yin said the drop in price of solar photovoltaic (PV) panels is making the generation method economically competitive to conventional generation methods.	The Malaysian Reserve	Klik pada tajuk berita
36.	<u>CEPSI 2018: A roaring success</u> The CEPSI 2018 event kickstarted with an opening address by Energy, Science, Technology, Environment, and Climate Change Minister Yeo Bee Yin, who said that the ministry would reactivate the Malaysia Programme Office for Power Electricity Reform (MyPower) agency to drive the Malaysia Electricity Supply Industry reform initiative 2.0 (MESI 2.0).	The Edge Market	Klik pada tajuk berita

TEMPATAN

Bil	Berita	Media	Capaian Berita Penuh
22 OKTOBER 2018 (ISNIN)			
37.	<u>Govt urged to seriously look into microplastics</u> It is time the go--vernment look into microplastics, especially after a Greenpeace study found that salt sold in Asia contained the highest levels of plastic contamination, said a conservation group.	The Star	Rujuk lampiran 17 atau klik pada tajuk berita
38.	<u>'No reason for Sabah to worry about a tsunami'</u> “The main reason is that Indon-esia lies on active tectonic plates, so earthquakes are expected, whereas Sabah lies on a relatively more stable area,” he added.	The Star	Rujuk lampiran 18 atau klik pada tajuk berita
39.	<u>Tawau berpotensi diancam tsunami</u> Meskipun bencana alam itu berlaku di negara jiran namun secara tidak langsung ia membuatkan Malaysia diselubungi kebimbangan terutamanya dalam kalangan warga Sabah.	Kosmo	Rujuk lampiran 19
40.	<u>Ongoing support for SMEs crucial</u> The government has made mention of the need for manufacturers to adopt Industry 4.0 related technologies to remain competitive in the global value chain.	The Star	Rujuk lampiran 20
41.	<u>In the era of artificial intelligence</u> For years, we were expected to artificial intelligence (AI) through Hollywood movies, such as A.I Artificial Intelligence, Eagle Eyes and Wall-E.	New Straits Times	Rujuk lampiran 21
42.	<u>Teknologi SFI jimatkan masa, kos nelayan tangkap ikan</u> Jabatan Perikanan Malaysia berharap lebih ramai pengusaha vessel atau bot nelayan menggunakan teknologi Sistem Penentuan	Kosmo	Rujuk lampiran 22

	Lokasi Penangkapan Ikan (SPI) pada masa akan datang.		
43.	<p><u>Coupling technology, enforcement for sustainability</u></p> <p>In fact, this was the purpose of having an automated enforcement system (AES) in the past. While the privatisation of the deal was lopsided and unacceptable, that has been made right by the current government.</p>	The Sun	Rujuk lampiran 23
44.	<p><u>Risiko bencana di Cameron</u></p> <p>Cameron Highlands didakwa tidak lagi selamat untuk pelancong sekiranya aktiviti penerokaan dan pembalakan haram masih berleluasa.</p>	Utusan Malaysia	Rujuk lampiran 24
45.	<p><u>New trial launched to create 'green' gas from solar power</u></p> <p>Energy company Jemena has partnered with the Australian Renewable Energy Agency (ARENA) in a \$15 million trial to convert excess solar and wind power into hydrogen gas, which will be stored and used in Jemena's New South Wales gas network.</p>	The Sydney Morning Herald	Klik pada tajuk berita
21 OKTOBER 2018 (AHAD)			
46.	<p><u>STEM literacy for Industry 4.0</u></p> <p>Ultimately, it is hoped that all parties can join the movement to ensure that our children are armed with future-proof STEM skills and help usher in Industry 4.0 into our nation.</p>	The Star	Rujuk lampiran 25
47.	<p><u>UniMAP terokai kejuruteraan nano</u></p> <p>Universiti Malaysia Perlis (UniMAP) berhasrat meneroka peluang memperkembangkan kerjasama dalam bidang kejuruteraan teknologi nano bersama dengan beberapa buah institusi pengajian tinggi di Iran melalui Iran Nanotechnology Innovation Council (INIC).</p>	Utusan Malaysia	Klik pada tajuk berita

20 OKTOBER 2018 (SABTU)			
48.	<u>CEO: Government should consider carbon tax to drive clean energy</u> The Government should consider imposing carbon tax on development projects in the future to drive clean energy and green technology.	The Star	Rujuk lampiran 26
49.	<u>A very high price to pay</u> “Now you know why the streams near construction site are always yellow when it rains”,he said.		Rujuk lampiran 27

ANTARABANGSA

Bil	Berita	Media	Capaian Berita Penuh
22 OKTOBER 2018 (ISNIN)			
50.	<u>How to find life on other worlds</u> It is one of the biggest questions there is: Are we alone in the universe?	The Star	Rujuk lampiran 28
54.	<u>Delhi holds breath as burning farms signal pollution season</u> “The entire region, including Delhi, will again become (a) gas chamber,”he said on Oct 12.	The Star	Rujuk lampiran 29
55.	<u>US to exit nuclear treaty</u> President Donald Trump said Washington will exit the Cold-War era treaty that eliminated a class of nuclear weapons due to Russian violations, triggering a warning of retaliatory measures from Moscow.	The Sun	Rujuk lampiran 30
56.	<u>Partnerships help robots advance</u> In a sprawling warehouse in Tokyo, several robots made by Chinese company HIT Robot Group are busy picking and stacking goods on the shelves.	The Star	Rujuk lampiran 31

57.	<u>Cool glacier can't take the heat</u> The loud crack rang out from the fog above the Baishui No.1 Glacier as a stone shard careened down the ice, flying past Chen Yanjun as he operated a GPS device.	The Star	Rujuk lampiran 32
58.	<u>Plastic straws and cotton buds could be banned within a year</u> Plastic straws, drink stirrers and cotton buds could be banned within a year under government plans to cut pollution, Michael Gove is to announce.	The Guardian	Klik pada tajuk berita
21 OKTOBER 2018 (AHAD)			
59.	<u>Perubahan iklim bawa bencana</u> Perubahan iklim juga dijangka membawa lebih banyak bencana semula jadi seperti kemarau dan banjir.	Berita Harian	Rujuk lampiran 32
60.	<u>Dubai environment summit told rapid regional growth has come at huge cost</u> Rapid economic growth in the UAE and across Asia has come at a huge environmental cost and degradation to biodiversity, experts have said at a UN conference in Dubai.	The National	Klik pada tajuk berita

LAMPIRAN 1
THE STAR (EVENTS): MUKA SURAT 10
TARIKH: 22 OKTOBER 2018 (ISNIN)

Driving towards sustainable business

Delegates at two-day conference share ideas on environmental and social innovations

ABOUT 400 advocates of sustainability attended the fourth edition of the Sustainable Brands 2018 conference in Kuala Lumpur to get insights into how companies could leverage environmental and social innovation to drive business and brand value.

The two-day conference held at Connexion@Nexus in Bangsar South was part of the Sustainable Brands circuit comprising 11 international destinations.

It served as a platform for the world's largest brands to discuss and exchange ideas, and discover the latest sustainability trends,

opportunities and challenges from each other, global thought leaders and practitioners.

Founded on the belief that unleashing the best of human ingenuity and innovation can change the shape of business, the Sustainable Brands 2018 conference themed Redesigning the Good Life highlighted how businesses could position their respective brands by responding to shifting societal needs, learning how to redesign products and services, and rethinking models for a changing economy.

The conference saw experts

addressing relevant issues including the reduction of plastic waste and highlighting the best way forward towards developing a sustainable economy in line with "what profits the planet also profits brands".

This goal was in line with the Energy, Science, Technology, Environment and Climate Change Ministry's initiative to harness energy produced from waste through waste-to-energy (WTE) technology.

The conference complemented the ministry's objective of supporting the country's economic devel-

opment through science and technology, and creating more job opportunities for Malaysians in the fast-growing green industry. It was also in tandem with Malaysia's efforts in achieving the target of becoming a zero single-use plastic nation by 2030.

"Brands large and small are demonstrating business success now with peer-to-peer consumption models and new products and service offerings that resolve social problems and resource tensions along the value chain," said Gerald Miranda, chief executive officer of Zenith Media and convenor of the

conference.

"Conscious business is not about abandoning the strengths of capitalism but rather complementing it by doing the 'right' thing. Today, there is greater realisation that profit and purpose can and should go hand in hand.

"Great companies are even willing to make short-term financial sacrifices to achieve their corporate purpose and endure over time.

"Research also shows that brands which deliver both purpose and profit consistently outperform their competitors," he added.

LAMPIRAN 2
THE STAR (VIEWS): MUKA SURAT 26
TARIKH: 22 OKTOBER 2018 (ISNIN)

Post of building surveyor needed

THE recent landslide at the Jalan Bukit Kukus worksite in Paya Terubong, Penang, and similar events in other parts of the country prompted me to write this open letter to Prime Minister Tun Dr Mahathir Mohamad:

Prior to 1975, the erstwhile George Town City Council had the post of city architect & building surveyor who, as head of the Town Planning & Building Department, was the superior to several architects and a town planner.

With the advent of the Town and Country Planning Act, 1976, the George Town City Council became the Lembaga Pengurusan Kerajaan Tempatan and the Town Planning & Building Department was replaced by a Building Department, while its sole town planner was promoted to senior town planning officer.

The Lembaga Pengurusan Kerajaan Tempatan, meanwhile, was headed by an officer administering council – at that time, Penang Chief Minister Dr Lim Chong Eu.

The contributions of a visionary chief minister invigorated Penang's town and country planning, and helped spawn an urban renewal project (with Komtar as its crown jewel) as well as a Comprehensive Development Area in George Town, while the padi fields of Bayan Lepas became the venue of two industrial estates and a satellite town, Bandar Bayan Baru.

However, it appears that redesignating the post of city architect & building surveyor as building department director and, later, replacing George Town City Council's building bylaws with the Town and Country Planning Act and the Uniform Building Bylaws, 1984, had the (probably unintended) effect of "emasculating" local authorities.

The dedication of various city architect & building surveyors since colonial days is legendary but their powers were unfortunately curtailed by the changing laws.

My senior colleagues in the Lembaga Pengurusan Kerajaan Tempatan (sharing your vantage, Dr M) related two anecdotes of irate law breakers pouring nightsoil on the cars of devoted building



Latest in a long line of construction sites disasters, the jalan Bukit Kukus site in Paya Terubong, Penang. More proof that changes are needed in how we enforce bylaws. — Bernama

surveyors who refused to turn a blind eye to breaches of council bylaws.

George Town's last city architect & building surveyor was reputed to have refused to append his signature to the development order of Komtar because of the lack of landings in the fire escapes in the building plans submitted, and the municipal president had to sign the order instead. Whether this is myth or fact only the other still surviving department heads can tell.

A George Town Council civil engineer (now in his 80s and still in private practice) was famous for carrying out inspections in the wee hours of the morning to ensure that the roadworks contractor did not shortchange his employer and the public. That's the reason why the stretch of Gurney Drive at the distal end of George Town remained in very good condition for many years.

Alas, the days of Majlis Perbandaran Pulau Pinang saw the calibre of some senior officers deteriorate, in my opinion.

Tun, post GE14, you advised senior civil servants to stand their ground in the face of inappropriate instructions from politicians. Here's the opportunity to put into action your pearls of wisdom and more.

Local authorities in their role as planning authorities are required by law to submit environmental impact assessments to the Department of Environment. However, there appears to be no role for the Department of Occupational Safety and Health (DOSH) until a worksite accident occurs. I respectfully suggest that DOSH check out workers' quarters if they are provided within the worksite itself or on its periphery.

I believe the recent scenario necessitates reinstating the post of

building surveyor (but placed under the Ministry of Energy, Science, Technology, Environment and Climate Change, or Mestec) to check on developments in critical areas such as hillslopes and land reclamation projects.

Both types of development can easily upset the fragile balance of the environment, and mega projects (some of which are worked on 24 hours a day) generate a lot of noise, dust and teh tarik-coloured discharge into ditches, streams and the sea when it rains.

The proposed Mestec building surveyor should visit these sites, first daily, then three times a week, and then weekly until the physical completion of the projects, and report on compliance by contractors with conditions attached to development orders and work permits.

Above all, the building surveyor should be empowered by Mestec

to issue stop-work orders if there are safety breaches or any indication of potential danger posed by the environment reacting to any unsafe work procedures.

Dr M, I appeal to your calling as a doctor to consider the sanctity of human life and reinstate the post of building surveyor. Your expeditious action will certainly be conducive to saving lives and more comforting than overt expressions of sympathy dispensed after a calamity has taken place.

Moreover, hefty fines should be imposed not only on contractors and developers for non-compliance with conditions attached to development orders but also on errant local/state authorities for breach of custodial duties. These fines could form a new revenue stream for federal coffers.

CHOW SIEW CHEONG
Penang

LAMPIRAN 3
BERITA HARIAN: MUKA SURAT 20
TARIKH: 22 OKTOBER 2018 (ISNIN)



(Dari kiri) Nor Absarina, Nurul Noor Akmal dan Nur Liyana Dalila bersama ciptaan sistem pengecas angin yang memenangi tempat kedua Cabaran Inovasi i-Cipta Pelajar Kolej Komuniti Paya Besar, Kuantan, bulan lalu.

Pelajar cipta pengecas angin bantu jimat elektrik

➔ Kos RM70
hasilkan rekaan
dalam tempoh
sebulan

Oleh Mohd Rafi Mamat
cnews@nstp.com.my

■ Kuantan

Tiga pelajar Kolej Komuniti Paya Besar menghasilkan sistem pengecas angin untuk menghasilkan tenaga elektrik tambahan yang mampu membantu menjimatkan bil.

Sistem terdiri daripada beberapa komponen seperti bateri, pengawal pengedar dan kipas itu mendapatkan tenaganya menerusi angin penghawa dingin yang dapat menghasilkan tenaga elektrik berkuasa 12 voltan.

Tenaga tambahan itu boleh digunakan untuk peralatan elektrik berkuasa rendah di rumah seperti kipas dan lampu kalimantang.

Inovasi berkenaan yang memenangi tempat kedua Cabaran Inovasi i-Cipta Pelajar Kolej Komuniti Paya Besar bulan lalu dibangunkan tiga pelajar iaitu Nur Liyana Dalila Mohd Sharbi, Nurul Noor Akmal Remely dan

Nor Absarina Muhamad.

Nur Liyana Dalila berkata, pihaknya membelanjakan RM70 untuk menghasilkan sistem berkenaan bagi menyediakan bateri untuk menyimpan kuasa elektrik dan sistem pengawal pengecas, manakala komponen lain daripada bahan terbuang.

Manfaat inovasi

"Ciptaan dihasilkan dalam tempoh sebulan itu dapat membantu menjimatkan penggunaan tenaga elektrik, terutama bagi mereka yang setiap hari menggunakan penghawa dingin di rumah dan pejabat.

"Kita berharap orang ramai dan syarikat dapat memanfaatkan inovasi berkenaan dalam usaha menjimatkan penggunaan tenaga elektrik dan memelihara alam sekitar," katanya.

Sementara itu, Nurul Noor Akmal berkata, walaupun belajar dalam bidang sistem komputer ia tidak menghalang mereka menghasilkan inovasi tenaga elektrik yang ringkas, mudah dan menjimatkan.

"Beberapa komponen pada sistem pengecas angin menggunakan barangan terbuang, ia dapat menjimatkan kos menghasilkan.

"Saya yakin ia mampu dikembangkan ke peringkat antarabangsa sekiranya dihasilkan secara komersial," katanya.

LAMPIRAN 4
THE STAR (BUSINESS): MUKA SURAT 11
TARIKH: 22 OKTOBER 2018 (ISNIN)

By JESSIE LIM
lymjessie@thestar.com.my

Located at Sunway Nexis Office Suite in Kota Damansara, the office has nothing to give away its nature of business, save for a shelf of trophies, certificates, framed pictures of its notable projects and a solar panel attached to one side of a wall.

These range from residential solar photovoltaic (PV) end-to-end services from project feasibility, documentation and approvals to design and build, as well as testing and commissioning.

From a team of two, the company has grown to 20 employees, working on both small- and large-scale projects across the country as well as in Lebanon.

The winning project was the installation of 425kW solar PV on the carpark rooftop of Plaza Metro Kajang, which was completed in December 2015, to generate electricity for the mall's own consumption.

"I encourage customers to instal solar panels on unused spaces such as rooftops. Besides generating electricity, the rooftop lasts longer thanks to protection from the layer on top of it," said Samadien co-founder and director Chow Pui Hee.

The company's latest project, and one of its biggest, is the large-scale solar PV plant of 24MW in Penang for an integrated construction company.

However, it is not as simple as just buying panels and installing them, explained Chow.

faced were in getting approvals from various authorities because developing a solar farm is like developing a residential area. You still need to obtain approval of the Development Order.

The weather was another challenge, making it difficult to monitor the progress of the solar panels, especially when there was no sunlight.

"However, the site could not progress fast enough as it rained daily for the first three months, and subsequently, throughout the entire year."

This is where Chow comes in with her experience and with her past involvement in the national landfill restoration project.

Powering up with the sun



LAMPIRAN 5
KOSMO (NIAGA): MUKA SURAT 51
TARIKH: 22 OKTOBER 2018 (ISNIN)

GSPARX tawar kemudahan pemasangan panel PV

KUALA LUMPUR - GSPARX Sdn. Bhd. (GSPARX), anak syarikat milik penuh TNB Renewables Sdn. Bhd. (TNB Renewables), akan menawarkan penyelesaian perbelanjaan modal (capex) sifar bagi pemasangan panel-panel solar fotovoltaik (PV) kepada pengguna kediaman pada akhir tahun ini. TNB Renewables juga merupakan syarikat di bawah Tenaga

Nasional Bhd. (TNB). TNB dalam kenyataan-nya berkata, GSPARX ditubuhkan untuk memenuhi permintaan tinggi bagi penajaan tenaga solar PV dengan menawarkan pakej kepada pelanggan komersial dan industri.



TENAGA NASIONAL
Better. Brighter.

"Menerusi perkhidmatan yang ditawarkan ini, pelanggan akan memperoleh manfaat daripada penjimatan dan peluang lindung nilai, sementara pemasang akan mendapat faedah daripada peluang perniagaan bagi pemasangan panel terlibat.

"Usaha ini sekali gus akan merealisasikan sasaran kerajaan dalam menyumbang sebanyak 20 peratus kepada kapasiti penajaan negara boleh diperbaharui menjelang tahun 2025," katanya di sini baru-baru ini. GSPARX dan penyelesaian capex sifar itu telah dilancarkan pada Persidangan dan Pameran Antarabangsa Teknologi Hijau dan Produk Eko 2018 yang di-

adakan di sini baru-baru ini. Menurut TNB, syarikat mengunjurkan untuk menawarkan sebanyak 1,500 megawatt bagi penajaan sendiri bagi pelaburan solar PV pada tahun 2025. "Aliran perolehan ini adalah disumbangkan oleh jualan tenaga oleh solar PV dan digunakan pelanggan pada harga yang dipersetujui kedua-dua belah pihak," ujarnya.

LAMPIRAN 6
SINAR HARIAN (NASIONAL): MUKA SURAT 13
TARIKH: 22 OKTOBER 2018 (ISNIN)

Jangan anggap sampah tidak bernilai

BAKRI - Orang ramai disaran melakukan kitar semula ke atas bahan buangan berasaskan makanan bagi membantu menjaga alam sekitar.

Menteri Tenaga, Teknologi, Sains, Perubahan Iklim dan Alam Sekitar, Yeo Bee Yin berkata, sudah sampai masanya untuk bertindak berikutan pelaksanaan kitar semula menggunakan kompos sisa dapur telah lama diperkenalkan.

Katanya, mentaliti masyarakat yang menganggap sampah tidak bernilai harus diubah kerana bahan buangan itu turut mengandungi faedah tersendiri terutama bagi alam sekitar.

"Orang ramai perlu buka mata menilai semula hasil buangan melibatkan sumber kekayaan. Sampah ini bukan sekadar sampah, sebab di akhir usianya masih manfaat terhadap tumbuhan," katanya.

LAMPIRAN 7
NEW STRAITS TIMES (OPINION): MUKA SURAT 13
TARIKH: 22 OKTOBER 2018 (ISNIN)

GLOBAL WARMING

MALAYSIA NEEDS A STRATEGY

Awareness of climate change among Malaysians is still low, despite mounting evidence of its impact



ZAKRI ABDUL
HAMID

THE world's leading climate scientists have warned we have only a dozen years to cap global warming to a maximum of 1.5°C. Beyond that, even half a degree will significantly worsen the risks of drought, floods, extreme heat and poverty for hundreds of millions of people.

The stark warning was issued this month in a special report by the Intergovernmental Panel on Climate Change (IPCC). The report emphasises that urgent and unprecedented changes are needed to reach the target, which the authors of the report say can be done, but involve taking some of the most ambitious actions in a range laid out under the Paris Agreement, which aims to keep any future temperature increase to between 1.5°C and 2°C.

"It's a line in the sand and what it says to our species is that this is the moment and we must act now," said Debra Roberts, a co-chair of the working group on impacts.

Policymakers commissioned the report at the Paris climate talks in 2016, but since then the gap between science and politics has widened. Dismissing the warnings, President Donald Trump has started the process of withdrawing the United States — the world's second biggest source of emissions today after China and the largest historical emitter — from the accord.

The IPCC makes it clear that climate change is already happening. The world is currently 1°C warmer than it was in pre-industrial times. The consequences are evident in the ever more devastating hurricanes and typhoons,

record droughts in places like Cape Town, and forest fires in the Arctic.

The IPCC has upgraded its risk warning from previous reports, stating that every fraction of additional warming would worsen the impact.

The scientists said that at 1.5°C, the proportion of the global population exposed to water stress could be 50 per cent lower than at 2°C. Food scarcity would be less of a problem at 1.5°C and hundreds of millions fewer people, particularly in poor countries, would be at risk of climate-related poverty.

The strength of the research response to IPCC's call for input to its latest report surprised even the authors, who initially worried that they would have limited literature to draw on. The report was based on a review of some 6,000 references.

Many important gaps in this month's report — in areas such as terrestrial and ocean sinks — will be addressed next year by two more special reports, which will benefit from access to additional new studies — a reminder of the power of the IPCC process to drive research.

The new report will feed into the process of producing IPCC's much-anticipated Sixth Assessment Report. It will also play a key role in the pursuit of the sustainable development goals.

Furthermore, it serves as a stark warning that trade-offs — which will be difficult to avoid — must be properly managed to meet critical development priorities such as food production, health, and poverty eradication.

The world's leading scientific

authority on climate change has delivered a clear message on the vital importance of setting higher ambitions.

But this lighthouse of a report only has value if captains heed its warning and turn the wheel to avoid shipwreck.

Will governments and people redouble efforts? All eyes now turn to Katowice, Poland, where nations will gather in December to finalise the work programme that will allow the Paris Agreement to take effect in 2020.

The debate on climate change in Malaysia is still somewhat muted, despite evidence of impacts such as more frequent floods. Sea levels and temperatures are rising, but most Malaysians don't link this to climate change, and few seem to know of the problem at all.

In fact, some recent surveys put the level of awareness of global warming among Malaysians at a meagre 32 to 40 per cent.

There's some light at the end of the tunnel. The new minister of Energy, Green Technology, Science and Climate Change, Yeo Bee Yin, is surely on the right track when in a recent interview she expressed concern on the severe understaffing of the climate change unit in her ministry, and how "two years after the country signed the Paris Agreement, nothing much has been done".

"We really need a plan on mitigation and adaptation," Yeo stresses, revealing that at the moment, Malaysia neither has a plan nor capacity for proper carbon accounting.

We look forward with hope to a well-thought out national strategy on how to cope with climate change, taking into account our needs and priorities while balancing global aspirations at the same time.

The writer, a senior fellow of the Academy of Sciences Malaysia, is the founding chair of the Intergovernmental Panel on Science-Policy Platform on Biodiversity and Ecosystem Services, a sister organisation to the IPCC.

LAMPIRAN 8
NANYANG SIANG PAU (BUSINESS NEWS): MUKA SURAT A3
TARIKH: 22 OKTOBER 2018 (ISNIN)



慈善晚宴筹委会主席陈闾轩（左起）和东甲狮子会会长吕哲明联合赠送水果礼篮给大会贵宾杨美盈。

杨美盈：生产太阳能发电仪 能源科技中资将入驻我国

（东甲 21 日讯）能源、工艺、科学、气候变化及环境部长杨美盈披露，中国一家能源科技投资公司近期将入驻我国投资设厂，制造和生产有关太阳能发电仪器。

她相信，随着中国这项投资后，将会有更多外国企业投资家进驻我国设厂。

她说，整肃国家经济，招揽外资入驻投资设厂是目前新政府着重的工作。

“相信只要外资入驻，投资项目越多，我国的经济就会更好，更蓬勃发展。”

杨美盈昨晚出席东甲狮子会创会 25 周年，洗肾中心 10 周年纪念及筹募活动与肾脏病黎扶贫基金“千娇百媚”慈善晚宴，这样指出。

她指出，要建立一个全新的马来西亚，必须有一个“有问责的公务员”体制和“警察投诉局行为不检监察员”委员会。

她说，公务员必须是不贪污、不腐败、不受贿、不滥权、不因公徇私的清廉者，才

能为人民提供更高效率的服务。

她指出，国家今天面对的困境，很多是因为贪腐所致，所以要加强反贪和肃贪行动，首要就是反贪委员会必须是独立的，不受首相、部长的制约。

她说，王子犯错与民同罪，上至首相，下至部长、市县议员、村长等，只要有贪污嫌疑，不能因为有官位在身，而不采取调查行动。

国家基础在于监督体制

她表示，国家的基础在于体制改革，有好的监督制衡制度，无论谁做首相、部长，国家都会朝好的方面迈进和蓬勃发展。

她指出，重建马来西亚全民都有责任，大家一起努力，奠定新马来西亚的基础，让马来西亚重生，为下代子孙实现梦想，过好日子，为自己身为马来西亚人不再“自卑”，而是骄傲。

LAMPIRAN 9 BERITA HARIAN (TEKNOLOGI): MUKA SURAT 5 TARIKH: 21 OKTOBER 2018 (AHAD)



Bee Yin bersama Ketua Pegawai Usaha (Usaha Niaga Tenaga) TNB, Datuk Nor Azman Mufti (dua dari kiri) dan Mohd Yusrizal (tiga dari kanan) ketika melawat gerai pameran GSPARX sempena Persidangan Produk Eko dan Teknologi Hijau Antarabangsa (IGEM) 2018 Kuala Lumpur, baru-baru ini.



Inisiatif dilaksanakan GSPARX dan TNB perlu diteruskan, manakala kepada industri, ini adalah peluang untuk mereka menyokong usaha kerajaan untuk mencapai sasaran tenaga diperbaharui"

Athirah Tan Abdullah,
Pengurus Inovasi dan Pengkomersialan (Bahagian Teknologi Habis Pembangunan), Cyberview Sdn Bhd



Sebagai syarikat kontraktor dalam industri solar, kami berlapang dada menerima tawaran sekiranya ia berpotensi memberi pulangan terbaik"

Alvin Wong,
Ketua Pegawai Eksekutif TopBank Solar Energy Sdn Bhd

Produk teknologi pintar, tenaga hijau pilihan premis komersial

➔ GSPARX tawar pemasangan produk solar tanpa belanja modal, tarif menarik

Oleh Siti Nurazlinee Azmi
sitinurazlinee@nmp.com.my

Penggunaan produk teknologi pintar dan tenaga hijau menjadi pilihan kebanyakan bangunan komersial lebih-lebih lagi dalam menjayakan usaha ke arah penggunaan tenaga hijau.

Tenaga Nasional Berhad (TNB) menerusi anak syarikatnya, GSPARX menawarkan produk solar kepada pelanggan yang berminat menggunakan solar panel di bangunan komersial milik mereka.

Selain tarif yang dikenakan lebih rendah berbanding TNB, pelanggan hanya perlu membuat bayaran berdasarkan apa yang dijana oleh solar panel dan tarif mengikut persetujuan bersama.

Malah tarif yang dipersetujui itu akan dikekalkan sepanjang tempoh kontrak.

Ketuanya, Mohd Yusrizal Mohd Yusof, berkata walaupun masih baharu,

permintaan terhadap penggunaan solar panel pada bangunan komersial semakin meningkat.

Katanya, GSPARX menawarkan pemasangan tanpa perbelanjaan modal (capex) kepada pelanggan yang ingin memasang solar panel di bangunan komersial dan industri seperti kilang dan bangunan pejabat.

Penjimatan kos elektrik

"Pelanggan akan menikmati penjimatan dalam kos elektrik kerana sebahagian tenaga dijana oleh solar.

"Kebaikan penggunaan solar panel antaranya ialah sekiranya terdapat peningkatan tarif di kemudian hari, tarif dari sistem solar yang digunakan itu akan kekal.

"Pemasangan solar panel juga boleh menjana elektrik sendiri di bangunan milik pelanggan dan dari segi penjanaan elektrik pula, ia lebih cekap, hijau dan bersih," katanya.

Beliau berkata demikian selepas menerima kunjungan daripada Menteri Tenaga, Sains, Teknologi, Alam Sekitar dan Perubahan Iklim (MESTECC), Yeo Bee Yin dan melancarkan GSPARX di ruang pameran pada Persidangan Produk Eko dan Teknologi Hijau Antarabangsa (IGEM) 2018, di sini.

IGEM 2018 yang berlangsung di Pusat Konvensyen Kuala Lumpur dari 17 hingga 20 Oktober, adalah platform untuk menyediakan peluang perniagaan dalam sektor industri hijau. Malah diiktiraf sebagai acara perdagangan bertaraf dunia bagi pe-

nyelesaian teknologi hijau dan eko yang terbesar di Asia Tenggara.

Mohd Yusrizal berkata, tawaran ini sejajar dengan saranan Bee Yin untuk menambah baik pelaksanaan pemeteran tenaga hersih atau net energy metering (NEM) dengan menyediakan mekanisme untuk menuju ke arah kemandirian teknologi pintar yang berkaitan dengan tenaga.

"GSPARX melangkah selangkah ke hadapan menerusi jalinan kerjasama dengan syarikat pemasangan solar tempatan.

"Sebelum ini ada jurang antara pemasangan dan pelanggan yang mana selepas berurusan akhirnya akan timbul pembayaran untuk pemasangan sistem solar.

"Disebabkan itu pelanggan tidak berani untuk melabur dalam sistem solar. Apa yang GSPARX lakukan ialah meningkatkan nilai bagi pemasangan dengan menyediakan lebih banyak peluang pemasangan," katanya.

Katanya, projek solar panel yang dimulakan sejak pertengahan tahun ini berjaya menarik enam hingga tujuh pelanggan yang kini berada dalam proses perbincangan akhir.

"Daripada jumlah itu, lima megawatt (MW) dapat dikumpul dan akan memulakan pemasangan pada awal 2019 nanti.

"Kita juga akan menawarkan pakej untuk pelanggan domestik pada akhir November," katanya.

Sementara itu, Pengurus Inovasi dan Pengkomersialan (Bahagian Tek-



Kebaikan penggunaan solar panel antaranya ialah sekiranya terdapat peningkatan tarif di kemudian hari, tarif dari sistem solar yang digunakan itu akan kekal"

Mohd Yusrizal
Mohd Yusof,
Ketua GSPARX

nologi Habis Pembangunan), Cyberview Sdn Bhd, Athirah Tan Abdullah, berkata solar panel adalah produk tenaga hijau baharu di mana pelanggan akan menjadi penjana tenaga atau pelanggan menggunakan dan menjana sendiri tenaga.

Katanya, penawaran sistem solar yang dilakukan GSPARX boleh dianggap sebagai langkah untuk menarik lebih ramai pemain industri menggunakan solar panel pada bangunan komersial masing-masing.

Sokong inisiatif kerajaan

"Ini juga antara kesedaran kepada masyarakat negara ini, terutama dalam menjaga kelestarian ekologi.

"Inisiatif yang dilaksanakan GSPARX dan TNB perlu diteruskan, manakala kepada industri, ini adalah peluang untuk mereka menyokong usaha kerajaan untuk mencapai sasaran tenaga diperbaharui," katanya.

Ketua Pegawai Eksekutif TopBank Solar Energy Sdn Bhd, Alvin Wong, menyambut baik program yang dilaksanakan GSPARX, malah berhasrat untuk meluaskan jaringan perniagaan bersama GSPARX pada masa akan datang.

"Sebagai syarikat kontraktor dalam industri solar, kami sentiasa berlapang dada menerima tawaran sekiranya ia berpotensi memberi pulangan terbaik, sekali gus dapat bersama-sama menjayakan program yang diketendahkan GSPARX," katanya.

LAMPIRAN 10
THE STAR (FOCUS): MUKA SURAT 19
TARIKH: 21 OKTOBER 2018 (AHAD)

The dawn of a new revolution

It's the blurring of lines between technology and our lives. The fourth industrial revolution is here and Malaysia is preparing for the future, including setting new standards for emerging technologies.

By YUEN MEIKENG
meikeng@thestar.com.my

PRINTING out a kidney from a machine sounds like something out of a sci-fi movie.

But this could soon be our reality, as researchers continually develop 3D printing with living cells.

This is just a taste of how the next industrial revolution will be.

Loosely defined as the blurring of lines between technology and our real world, the Fourth Industrial Revolution (4IR) will likely see breakthroughs that will change our lives.

This includes the emergence of robots, artificial intelligence and even technology embedded in our bodies.

In Malaysia, experts are saying the 4IR has already touched our shores, but it's only the beginning.

To prepare for what lies ahead, new standards are being drafted by the Department of Standards Malaysia (Standards Malaysia).



Existing standards are also being reviewed to see which can be developed to support the 4IR.

Focus is given to standards affecting seven industries deemed as "pace-setters" in the

country – industries where Malaysia has the right skills and know-how to potentially become a leader.

These sectors are automotive, food processing, chemicals, petroleum and pharmaceuticals, electrical and electronics, financial services, telecommunications and courier services and lastly, IT services.

For starters, 10 new standards will be introduced on blockchain technology, with three expected to be ready next year, Department of Standards Malaysia director-general Datuk Fadiah Baharin tells *Sunday Star*.

Blockchain, to put simply, is a list of data that cannot be manipulated.

As such, it offers a secure way to trade, reduces costs and distrust, increases security and bypasses middlemen.

It can be used in various areas but today, its main use is as a distributed ledger for cryptocurrencies like bitcoin.

Fadiah says the three new standards will define jargons and terminologies in the system and set benchmarks on contracts in the blockchain environment.

The other seven standards are currently being drafted.

"At the moment, there are no rules about blockchain technology in Malaysia.

"Local experts, including from Bank Negara Malaysia, are on board with us to draft these standards," she says in an interview.

Such standards will prepare Malaysia for the development of cryptocurrencies and other potential areas which may use blockchain technology in future.

Apart from that, present standards on agriculture will also be studied and reviewed.

This is to ensure they are in line with the changing times, including how latest technologies can be part of production in plantations and other commodities.

"The standards are already there. But we need to infuse it with technology," Fadiah adds.

But while the 4IR is set to be an exciting time, Malaysia does face several challenges which may impede how fast we can adapt to this era.

Fadiah points out that there is still a socio-economic gap between urban and rural areas in the country, with some areas still trailing behind in terms of infrastructure.

Such an imbalance can stand in the way of our country fully embracing 4IR.

"Some places still do not have good quality internet access.

"Some people also have problems owning a car but elsewhere, others are considering driverless cars and electric cars," she says.

But perhaps the biggest hurdle to overcome is the people's mindset.

"Technology is evolving and machines can be modified. But change must first come from within.

"We will lag behind if people do not embrace change and only stick to a fixed mindset," she adds.

Agreeing, Academy of Sciences Malaysia chief executive officer Hazami Habib says the 4IR is already here in Malaysia but we will fall behind if people do not see beyond boundaries.

Drawing from her personal experience, she says an example of innovative thinking was meeting with a plantation operator who used a drone with a video camera to monitor crops, instead of having workers walk around the whole area.

Such creative thinking, using technology, is needed if Malaysia is to be in tandem with the 4IR.

"To build the right ecosystem, we need the Government, business sector, academics and the civil society to have a mindset that supports growth.

"We need the kind of leadership that

Technology is evolving and machines can be modified. But change must first come from within. We will lag behind if people do not embrace change and only stick to a fixed mindset.

Department of Standards Malaysia
director-general Datuk Fadiah Baharin

encourages innovation," she says.

She says the seven "pace-setter" industries in Malaysia, outlined by a recent local study, showed that Malaysia has the necessary knowledge and strengths in such areas.

And we should use this to our advantage to launch us forward into the 4IR.

"The most precious commodity in future is

knowledge. It is the next currency. As long as we have it, we will stay relevant.

"If we don't have knowledge and technology, we will keep buying other people's inventions," Hazami says.

She also points out that 96% of companies in Malaysia are small and medium sized enterprises (SMEs).

But it is the remaining 3% companies consisting of government-linked companies and multi-national firms which outperform all the rest.

"The 2% of companies have higher productivity. In the 4IR, we need a collaborative economy with shared vision.

"For example, 10 SMEs can join forces to fill the whole value chain of production to compete with larger companies," she illustrates.

As far as whether the advancements in 4IR like robots will be a threat to human jobs, Hazami sees it as opportunities rather than threats.

"Robots still require humans to maintain them. Robots can process data in seconds but it is humans who analyse the data and give them meaning," she says.

She also believes Malaysia will have the necessary human capital to face 4IR in its full bloom.

"Semi and high skilled talents are in the pipeline. The Government's policy of having 60% of students in science disciplines will fulfil requirements of the future.

"The focus on Technical Vocational Education and Training (TVET) will also ensure Malaysia has the right kind of workers," she says.

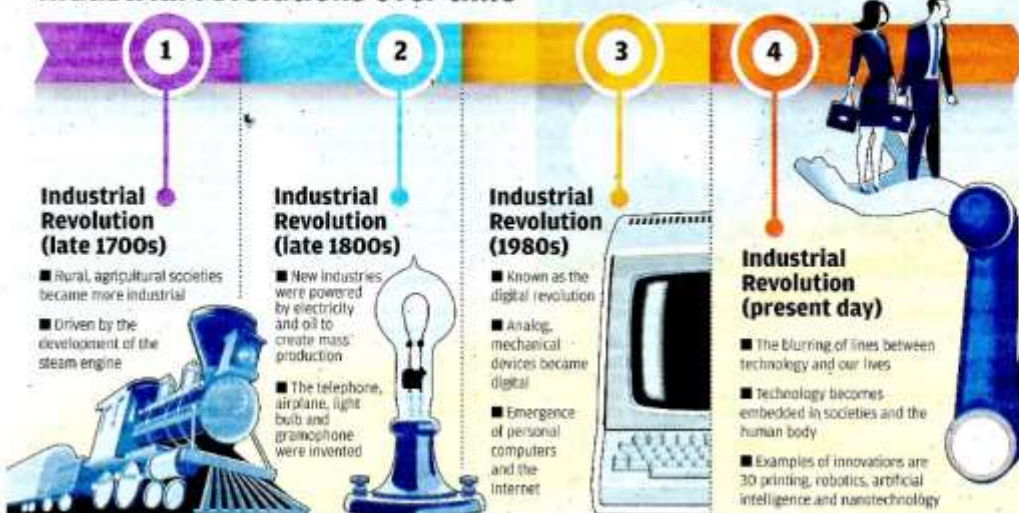
In line with the growing conversation on 4IR, the revolution has become the theme for this year's World Standards Day, celebrated on Oct 14.

Standards Malaysia, as a member of the International Organisation for Standardisation, is commemorating the event by organising a competition on Instagram which ends on Oct 31.

Winners, who post the contest poster and complete a caption on 4IR, will stand to win cash prizes, with the first prize being RM1,000.

For more information, log on to www.jam.gov.my

Industrial revolutions over time



LAMPIRAN 11

THE STAR (FOCUS): MUKA SURAT 24

TARIKH: 21 OKTOBER 2018 (AHAD)



Valuable junk: Workers sorting out the plastic waste before it undergoes several processes to be made into plastic resin, which is then used to manufacture new products.

By RASHVINJEET S. BEDI
sunday@thestar.com.my

WHEN Gilbert Tan first heard that China was planning to ban the import of plastic waste into the country, he immediately got a bad feeling about how it was going to affect Malaysia and the recycling industry.

"I had this fear that they would not follow the rules and regulations. This would mar the whole plastic recycling community," he says.

The managing director of Green Concept Technology Sdn Bhd, a company that recycles and manufactures plastic, was proven right by the recent expose of illegal recycling factories that had popped up in Kuala Langat.

Many of the sites in Kuala Langat were surrounded by mountains of plastic waste while a strong chemical stench permeated the air.

Local residents complained that the smog from the burning and melting of the waste by these "processing plants" had caused their health problems including eye, throat and breathing discomfort.

In Kuala Langat alone, it was revealed that there were 24 illegal plastic waste factories – with another 17 which were ordered to close earlier – in addition to the 13 legal plastic waste factories.

For Tan, this development has cast a bad light on the legitimate recycling companies like his.

"We are actually doing a good job," the passionate 60-year-old says as he takes the Sunday Star on a tour of his company which is located in the Pandamaran Industrial Area in Klang recently.

Introducing each and every of his staff member of his company, Tan explains every process – from sorting to washing and mixing the plastic waste, before it is turned into plastic resin.

These small pellets that resemble grains of rice are sold to companies who manufacture stadium seats, office furniture, motorcycle parts and fruit baskets among other things.

All in all, about 90% of the waste that comes in is eventually converted into resin.

While Tan's company only purchases plastic waste from local sources, there are those that import plastic waste.

However, the process of recycling is the same for all, notes Tan. The issue is whether the operators follow the rules and regulations to ensure that their operation does not pollute the environment.

Tan's company, which is ISO 14000 certified, follows stringent rules in making sure there is no pollution. This means not taking shortcuts, even if it means higher costs and less profits.

"When we first started, we felt

Plastic waste recycling can pay

There are many opportunities in the plastic waste recycling industry, but the operators must play their part to follow the rules and ensure there is no pollution.



Tan: "When we first started, we felt that we needed to preserve the environment. In the process, we also make a profit."

that we needed to preserve the environment. In the process, we also make a profit," he says.

Following the uproar, the Housing and Local Government Ministry in July temporarily revoked the Approved Permits (APs) for three months for plastic waste imports, affecting 114 legal plastic waste factories all over Malaysia.

The government has also established a joint ministerial committee made up of four ministries to look into the issue.

They are the Housing and Local Government Ministry; Water, Land and Natural Resources Ministry; International Trade and Industry Ministry; and the Energy, Technology, Science, Climate Change and Environment Ministry.

The Malaysian Manufacturers Plastic Association (MPMA) supports the temporary ban even though some legit local recycling operators are facing a shortage of materials, which is affecting their operations.

"We regret that but unfortunately, it has to happen to protect the sustainability of the industry," says MPMA recycling sub-committee chairman C.C. Cheah.

China banned plastic imports earlier this year, leading to a huge impact on the global recycling system. This has also led to a number of Chinese companies relocating their operations to Malaysia, with some setting up shop here as soon as the Chinese government

announced the ban in 2017.

According to official statistics, the value of imported plastic waste increased from RM274m in 2016 to RM490m the following year.

Only those with APs can import plastic waste, but a few of these legal operators had allegedly sold the imported waste to the illegal operators.

The government has now made it compulsory for those wanting to import waste to get the ISO 14000 certification by June 2019.

The ISO 14000 family of standards provides practical tools for companies and organisations of all kinds looking to manage their environmental responsibilities.

Essentially, this means that companies must be free from water, air and noise pollution.

Cheah says that currently all AP holders must fulfil requirements by the Department of Environment (DOE) and the National Solid Waste Management Department.

Various non-governmental organisations, however, have called for the government to totally ban the import of plastic waste, saying there was no reason for Malaysia to become a dumping ground for other countries. Plastics has a bad reputation all over the world, being the most common pollutant found in the oceans that is responsible for the death of wildlife.

For Era Suria Ecopreneurs CEO, S. Sri Uneswara, plastic waste is a resource.



Circular economy: Plastic resin is used to manufacture products like stadium seats, office furniture, motorcycle parts and fruit baskets.

He is a supporter of the "circular economy", which is aimed to retain as much value of products, parts and materials.

He points out that several multinational companies such as Coca-Cola, Unilever and Nestle have pledged to use more recycled materials for their packaging in the near future.

Uneswara, who is also an environmentalist and circular economy consultant, says that some of the recycling companies who imported plastic waste were affected when the ban took place.

These companies were penalised by their customers for not being able to supply the required amount of material needed every month.

If this continues, says Uneswara, the big multinational companies such as those in the electronics or automotive sectors would shift their base to other countries like Thailand and Indonesia.

"If you are going to depend on Malaysia's raw material it is not going to be enough because our raw material is highly contaminated because we don't have proper segregation," he says.

In 2015, it was estimated that only 15% of local plastic waste ended up being recycled.

Uneswara says that Malaysian operators have no choice but to import plastic waste to make their businesses viable, with almost 80-90% of the industry depending on these imports.

The plastic recycling industries

have a turnover of RM4.5bil and 13,000 people are employed in the industry, he says, and Malaysian operators import plastic waste for the economics of scale needed to sustain their businesses.

According to Uneswara, recyclers can't get enough waste locally because there are problems at the collection point itself.

"Why has it only become an issue recently? Is there an issue with enforcement or is there an element of corruption?"

He adds, China has now opened up the importation for certain type of plastic waste, particularly Polyethylene terephthalate (PET), which is used to make soft drink bottles.

The ban of these materials has affected the fabrics and clothing industry there as PET is used to make garments.

Moving forward, the MPMA urges the government to set a quota on how much plastic waste can be imported into the country.

"The plastic recycling industry should be allowed to go about its activities, provided that it is regulated," says Cheah, adding that they are willing to reduce imports if more local scraps were collected to meet the industry growth.

They only want sufficient imports that the local industry needs and can handle, says Cheah.

"We don't want to import the whole world's waste. We do not want limitless imports."

LAMPIRAN 12
THE STAR (MEGA SAINS): MUKA SURAT 27
TARIKH: 20 OKTOBER 2018 (SABTU)

SPAN: Our tap water is clean, safe and free of E-Coli bacteria

PETALING JAYA: The water supply system in Malaysia is not only clean and safe to drink but also free from E-Coli bacteria, says Datuk Mohd Ridhuan Ismail.

Water treated and supplied adhered to the minimum quality standard set by the Health Ministry based on the World Health Organisation's (WHO) Water Quality Guideline, added the National Water Service Commission (SPAN) chief executive officer.

"To ensure that the water quality is always safe and guaranteed, continuous surveillance is done by all relevant parties including water operators, the Health Ministry and SPAN," he said in a statement yesterday.

On Wednesday, Water, Land and Natural Resources Minister Dr Xavier Jayakumar told Parliament that it was safe to drink tap water.

Mohd Ridhuan said water operators were responsible for ensuring the effectiveness of the treatment process on a continuous basis.

The ministry, which started the Drinking Water Quality Surveillance Programme since 1983, had been sampling water from plants and distribution systems to check on the the quality supplied by operators, said Mohd Ridhuan.

"No less than 38 types of physical, chemical

and microbiological parameters are analysed, starting from the water treatment plant intake until the distribution system with cooperation from the Chemistry Department.

"There are 6,108 sampling stations at all 500 water treatment plants and water supply systems nationwide with more than 186,000 samples," he added.

SPAN had also been conducting periodic audits at all water treatment plants to ensure treatments were effective, he said.

At the same time, Mohd Ridhuan also debunked claims from several press statements that tap water in Malaysia contained E-Coli bacteria detrimental to public health.

"E-Coli is among the microbiology parameters analysed continuously by water operators and the Health Ministry. As a result, water from the public water supply system is free from E-Coli," he said.

Mohd Ridhuan also gave the assurance that at the last stage of water treatment and before water was distributed, operators were tasked to ensure that there was free chlorine residual of at least 0.2l/mg (milligram per litre) in the treated water to kill off E-Coli bacteria that could possibly exist should there be pollution in the supply system.

LAMPIRAN 13
NEW STRAITS TIMES (BUSINESS/ CORPORATE WHIRL): MUKA SURAT 24
TARIKH: 20 OKTOBER 2018 (SABTU)



LAMPIRAN 14
UTUSAN MALAYSIA (BISNES): MUKA SURAT 47
TARIKH: 20 OKTOBER 2018 (SABTU)



YEO BEE YIN (tengah) melancarkan GSPARX disaksikan oleh Nor Azman Mufti (kiri) dan Mohd. Yusrizal Mohd. Yusof di Kuala Lumpur, baru-baru ini.

TNB perkenal GSPARX

Oleh NUR HANANI AZMAN
ekonomi@utusan.com.my

■ KUALA LUMPUR 19 OKT.

TENAGA Nasional Bhd. (TNB) melancarkan anak syarikat milik TNB Renewables Sdn. Bhd. iaitu GSPARX Sdn. Bhd. (GSPARX) yang terlibat dalam industri solar fotovoltai (PV).

GSPARX adalah antara syarikat pelaburan pertama di Malaysia yang menawarkan penyelesaian sifar perbelanjaan modal (capex) untuk pemasangan panel PV.

GSPARX berperanan sebagai pelabur buat pemilik bangunan komersial dan perindustrian dan kemudian mereka hanya perlu membayar jumlah solar yang dijana secara bulanan ber-

dasarkan kadar tarif yang telah dipersetujui.

"GSPARX berhasrat untuk menawarkan sebanyak 1,500 megawatt (mW) 'self-generation' untuk pelaburan solar PV menjelang 2025.

"Aliran pendapatannya datang daripada jualan tenaga yang dihasilkan oleh solar PV yang digunakan oleh pelanggan pada harga dipersetujui oleh kedua-dua pihak," katanya dalam kenyataan di sini hari ini.

GSPARX telah dilancarkan sempena Persidangan dan Pameran Antarabangsa Teknologi Hijau dan Produk Eko (IGEM) 2018 oleh Menteri Tenaga, Sains, Teknologi, Alam Sekitar & Perubahan Iklim, Yeo Bee Yin.

Yang turut hadir, Ketua Pegawai Usaha Niaga TNB, Datuk Nor Azman Mufti dan Ketua

GSPARX, Ir. Mohd. Yusrizal Mohd. Yusof.

GSPARX akan menawarkan pakej untuk segmen kediaman menjelang akhir tahun ini.

Pelanggan tidak perlu membuat sebarang bayaran pendahuluan kerana syarikat itu akan menanggung kos untuk membeli dan memasang solar PV.

Melalui perkhidmatan ditawarkan oleh GSPARX, pelanggan akan mendapat manfaat daripada penjimatan dan peluang perlindungan nilai. Pemasang pula akan mendapat manfaat daripada potensi perniagaan pemasangan solar PV.

Usaha itu ke arah merealisasikan sasaran kerajaan terhadap sumbangan tenaga boleh diperbaharui (RE) sebanyak 20 peratus daripada kapasiti penjanaan di negara ini pada 2025.

LAMPIRAN 15 UTUSAN MALAYSIA (KELESTARIAN): MUKA SURAT 5 TARIKH: 20 OKTOBER 2018 (SABTU)

TNB komited jayakan pembangunan lestari

➔ **TNBES** guna konsep 'lebuhraya hijau' bagi projek Senai-Desaru Expressway Bhd

Oleh Siti Nurazlinee Azmi
sitiurazlinee@nstp.com.my

Gaya hidup cekap tenaga yang inovatif amat penting kerana ia memberi manfaat kepada manusia dan alam semula jadi.

Kerjasama dalam memperkukuhkan kelestarian berpotensi mempercepatkan pertumbuhan tenaga hijau di Malaysia.

Sehubungan itu, bagi menjayakan matlamat pembangunan lestari, anak syarikat Tenaga Nasional Berhad (TNB) iaitu TNB Energy Services Sdn Bhd (TNBES) menyusun langkah menerusi kerjasama di antara Malaysian Industry Government Group For High Technology (MIGHT) dan Senai-Desaru Expressway Bhd (SDEB) berkonsepkan Green Highway (lebuhraya hijau) yang mengintegrasikan fungsi pengangkutan dan kelestarian ekologi.

Pendekatan alam sekitar digunakan sepanjang perancangan, reka bentuk sehingga pembinaan lebuhraya bagi memastikan kelestarian terpelihara.

Kerjasama tiga pihak itu dimeterai selepas pertukaran dokumen perjanjian persefahaman (MoU) antara TNBES, MIGHT dan SDEB semasa Persidangan Produk Eko dan Teknologi Hijau Antarabangsa (IGEM 2018), di sini.

Maglis pertukaran dokumen itu dihadiri Pengarah Urusan TNBES, Dr Ir Ahmad Jaafar Abd Hamid; Presiden dan Ketua Pegawai Eksekutif MIGHT, Datuk Dr Mohd Yusoff Sulaiman dan Ketua Pegawai Eksekutif SDEB, Jamal Abdul Nasir Taharin.

Ia disaksikan Menteri Tenaga Sains, Teknologi, Alam Sekitar dan Perubahan Iklim (MESTECC), Yeo Bee Yin dan Ketua Pegawai Eksekutif TNB, Datuk Seri Ir Azman Mohd.

Melalui MoU itu, semua syarikat terbabit akan meneroka potensi Lebuhraya Senai-Desaru di Johor sepanjang 77 kilometer dengan melestarian ekosistem persekitaran lebuhraya antaranya menyediakan infrastruktur ke arah kecekapan Tenaga (EE) dan Tenaga Boleh Baharu (RE).

Projek yang dijangka memberi manfaat kepada komuniti setempat termasuk pengguna lebuhraya



Bee Yin (tengah) dan timbalannya, Ismail Sabri Yaakob bersama (dari kiri), Ahmad Jaafar, Dr Mohd Yusoff, Azman, Jamal Abdul dan Timbalan Ketua Setiausaha Kementerian, Badriyah Abd Malek selepas menandatangani MoU sempena IGEM 2018, di Kuala Lumpur.



Donald Wong



Saifulnihar Jalaluddin



Yong Chin Kuek



Orang ramai mengunjungi booth TNB pada IGEM Kuala Lumpur.

itu, merangkumi pemasangan semula lampu dengan menggunakan diod pemancar cahaya (LED), memasang penyaman udara cekap tenaga serta sistem pemantauan bangunan melalui pengawalan tenaga atas talian yang dikenali sebagai Making Electricity Visible (MAEVI).

Laksana matlamat UNSDG

Ia seiring dengan tema IGEM 2018 yang menumpukan usaha melaksanakan Matlamat Pembangunan Lestari Pertubuhan Bangsa-Bangsa Bersatu (UNSDG).

IGEM 2018 berlangsung di Pusat Konvensyen Kuala Lumpur di sini bermula dari 17 hingga 20 Oktober, menampilkan 250 pempamer.

Sebagai pempamer utama, TNB menyediakan ruang khas kepada pengunjung dari dalam dan luar negara untuk menyaksikan pameran yang bertema Customer Empowerment Through Smart Renewables.

Ruang terbabit mengetengahkan

reka bentuk berkonsepkan Green, Bright, Positive iaitu beririsan moden dan kontemporari, selaras dengan aspirasi TNB yang mendukung kelestarian teknologi hijau di samping cita rasa masyarakat pengguna masa depan yang mengutamakan kemampuan persekitaran.

Antara yang menarik perhatian ramai pengunjung ke ruang pameran disediakan syarikat itu adalah produk dan perkhidmatan berkonsepkan 'hijau' seperti Stesen Pengisian Charge EV, Grid Pintar, Floating Solar, Biomass dan Biogas, Meter Pintar dan Hidroelektrik.

Menerusi pameran itu juga pengunjung menerima maklumat mengenai tawaran syarikat terbabit terhadap perkhidmatan dan produk bagi mewujudkan ekosistem hijau dan mampan terus dari teknologi yang boleh diperbaharui melalui aplikasi bagi mengurangkan penggunaan bekalan tenaga.

Secara ringkas, platform yang disediakan dalam IGEM 2018 itu bertujuan untuk mendidik dan memperkukuhkan masyarakat bagi mewujudkan dunia yang lebih lestari, harmoni dan lebih mampan pada masa depan.

Bagi Ketua Pegawai Eksekutif Powerworld Engineering dari Hong Kong, Donald Wong, beliau mengunjungi IGEM 2018 kerana mencari peluang perniagaan menerusi jaringan perniagaan antara Malaysia dan Hong Kong termasuk China.

"Solar industri adalah teknologi tenaga masa depan yang kini mendapat sambutan di kebanyakan negara termasuk China dan Hong Kong yang kini giat membangunkan teknologi tenaga solar.

"Saya juga mencari rakan niaga untuk membuka peluang perniagaan dalam sistem solar seperti jalinan kerjasama antara Malaysia, Hong Kong dan China sama ada mengimport produk dari sana atau mengeksport produk ke negara ini," katanya.

Eksekutif Penyelenggaraan SP Setia, Saifulnihar Jalaluddin, berkata kehadiranannya adalah untuk mencari produk yang boleh diaplikasikan di kawasan perumahan.

"Menarik di ruang pameran TNB adalah teknologi solar kerana ia lebih berbaloi, terutama dalam penjimatan tenaga elektrik. Ia boleh diperkenalkan kepada penduduk dan mendatangkan faedah kepada mereka," katanya.

Timbalan Pengurus Besar Kumpulan Elektronik, Nagase (Malaysia) Sdn Bhd, Yong Chin Kuek berkata, di Malaysia kenderaan yang menggunakan teknologi pengisian elektrik semakin meningkat dan sudah tiba masanya supaya stesen pengisian kenderaan elektrik, Charge EV turut ditambah bagi menampung permintaan pasaran.

LAMPIRAN 16
 UTUSAN MALAYSIA (BISNES): MUKA SURAT 47
 TARIKH: 20 OKTOBER 2018 (SABTU)

Sirim-Fraunhofer salur dana RM35 juta

SHAH ALAM 19 Okt. - Sirim Berhad (Sirim) menyalurkan dana hampir RM35 juta kepada usahawan perusahaan kecil dan sederhana (PKS) di bawah program Sirim-Fraunhofer.

Presiden dan Ketua Pegawai Eksekutif Kumpulan Sirim, Prof. Ir. Dr. Ahmad Fadzil Mohamad Hani berkata, program dilaksanakan sejak 2015 itu memberi penekanan kepada pengenalpastian masalah PKS melalui Audit Teknologi.

Katanya, setelah mengenal pasti masalah yang dihadapi PKS, Sirim akan membantu menyelesaikan masalah yang dikenal pasti melalui perkhidmatan teknologi dan inovasi.

Sebanyak 640 syarikat telah menjalani audit teknologi oleh juruaudit berkelayakan yang terdiri daripada penyelidik dan jurutera Sirim sejak ia dilaksanakan pada 2015.

"Audit teknologi ini menyediakan saluran kepada syarikat untuk menilai keupayaan pengurusan teknologi mereka serta memahami kekuatan dan kelemahan masing-masing ke arah penambahbaikan.

"Sebanyak 170 projek peningkatan teknologi telah diluluskan dan lebih daripada 300 syarikat mengambil bahagian dalam projek intervensi teknologi lain seperti audit tenaga, pembungkusan dan pelabelan, bengkel inovasi serta penerimgunaan amalan

terbaik," katanya ketika berucap pada Program Peningkatan PKS Melalui Sirim-Fraunhofer di sini hari ini.

Lebih 300 peserta didehkan kepada pelbagai topik berkaitan inovasi makanan dan perkilangan bagi menggalakkan penyertaan PKS dalam Program Sirim-Fraunhofer

untuk meningkatkan daya saing mereka.

Program itu diharapkan dapat dijadikan platform untuk mencari penyelesaian dalam menangani segala permasalahan dan isu yang dihadapi oleh PKS dalam sektor perkilangan melalui sesi jaringan dan perbincangan kumpulan sasa-



AHMAD FADZIL

ran.

Pada majlis sama, Sirim turut memberi penghargaan kepada 62 PKS yang terlibat dalam Program SIRIM-Fraunhofer terdiri daripada usahawan pelbagai industri seperti bahan pembungkusan, pemesinan dan kejuruteraan, makanan dan minuman serta pelabelan dan pembungkusan.

Sirim juga membangunkan program baharu untuk PKS termasuk tunjuk ajar dalam penggunaan alat inovatif bagi pengurusan teknologi, perdagangan dan pepadanan perniagaan, selain pembangunan rangka kerja kesediaan penilaian syarikat dalam menggunapakai elemen Industri 4.0.

LAMPIRAN 17
THE STAR (NATION): MUKA SURAT 10
TARIKH: 22 OKTOBER 2018 (ISNIN)

Govt urged to seriously look into microplastics

By MEI MEI CHU
meimeichu@thestar.com.my

PETALING JAYA: It is time the government look into microplastics, especially after a Greenpeace study found that salt sold in Asia contained the highest levels of plastic contamination, said a conservation group.

Malaysian Nature Society plastic consultant Donovan Louis said microplastics were very harmful.

"We have mechanisms to monitor and regulate land and air pollu-

tion but not water pollution," he said in an interview.

Microplastics are any type of plastic fragments that are small and barely visible.

In Malaysian waters, Reef Check Malaysia said plastic bottles, cigarette buds and plastic grocery bags were the three most common pollutants.

"Malaysia's plastic pollution is very severe," Louis said.

He was responding to the results of a study which showed that over 90% of table salt used in kitchens

globally were found to contain microplastics.

The study published in *Environmental Science & Technology* journal analysed 39 salt brands from 21 countries, including Indonesia, the Philippines, Thailand and Vietnam.

Researchers found that the microplastic content was especially high in the salt consumed in Asia, with the Indonesian sample found to have the highest quantities.

It also found that only three brands – Taiwan (refined sea salt),

China mainland (refined rock salt) and France (unrefined sea salt produced by solar evaporation) – did not contain any microplastic particle.

The study estimated that an average adult consuming 10g of salt daily would be consuming about 2,000 microplastics each year.

"Recent studies have found plastics in seafood, wildlife, tap water and now in salt.

"It is clear that there is no escape from this plastics crisis, especially as it continues to leak into our

waterways and oceans," said Greenpeace East Asia campaigner Milkyoung Kim in a statement.

Louis said single-use plastics such as plastic wrappers, cutlery and straws should be banned.

The government, he added, must not waste time in implementing a mechanism to look at plastic and microplastics pollution.

"Malaysia has been talking about waste separation system for 15 to 20 years but when are we going to implement an effective one?" he asked.

LAMPIRAN 18
THE STAR (NATION): MUKA SURAT 8
TARIKH: 22 OKTOBER 2018 (ISNIN)

'No reason for Sabah to worry about a tsunami'

KOTA KINABALU: Sabah is protected from any tsunami triggered in neighbouring Indonesia and the Philippines, according to a geologist.

Prof Dr Felix Tongkul said this is because the state, with the exception of southeastern Tawau, sits on a wide shallow continental shelf.

The shelf keeps most of Sabah relatively safe, the Universiti Malaysia Sabah geologist said.

Prof Tongkul cautioned that a "local" earthquake would be more of a threat rather than earthquakes in Indonesia.

"The main reason is that Indonesia lies on active tectonic plates, so earthquakes are expected, whereas Sabah lies on a relatively more stable area," he added.

He said the shallow and wide continental shelf helped reduce the tsunami threat from the Manila Trench, Mindoro Trench and Cotabato Trench in the Philippines.

However, based on a computer simulation from the North Sulawesi Trench in Indonesia, it poses a tsunami threat for Tawau depending on the width of its seabed and distance from the tsunami source.

Based on the simulation, Prof Tongkul said the waves could be one metre to 5m high and reach Tawau shores in between 30 minutes and two hours.

Tawau would be a potential danger zone due to its narrow shelf if it was subjected to a direct hit from a North Sulawesi source area, he said.

Apart from tsunami warnings and creating awareness on what should be done if such an event occurred, Prof Tongkul said there was a need for detailed mapping of high-risk areas to identify evacuation and escape routes.

"Science and technology have yet to predict earthquakes or tsunami," he said, adding that people had more time to keep themselves safe if there was a tsunami, unlike an earthquake.

Sabah has remained vigilant and pushed for resistant buildings after the state was hit by a 6.1-magnitude earthquake in 2015, leaving 18 dead.

LAMPIRAN 19
KOSMO (NEGARA): MUKA SURAT 11
TARIKH: 22 OKTOBER 2018 (ISNIN)

Tawau berpotensi diancam tsunami

PADA 28 September lalu, kita dikejutkan dengan berita memilukan mengenai ribuan nyawa dilaporkan terkorban dan hilang akibat kejadian gempa bumi yang berukuran 7.5 pada skala Richter dan disusuli tsunami yang melanda Palu dan Donggala di Sulawesi Tengah, Indonesia.

Meskipun bencana alam itu berlaku di negara jiran namun secara tidak langsung ia membuatkan Malaysia diselubungi kebimbangan terutamanya dalam kalangan warga Sabah.

Sebagai wilayah yang terletak berhampiran Filipina dan Indonesia yang aktif dengan bencana alam seperti letupan gunung berapi, gempa bumi dan tsunami maka Sabah turut khuatir mungkin menerima tempias sama.

Berdasarkan rekod daripada Filipina, bahagian timur dan utara Sabah pernah dilanda tsunami setinggi dua meter pada 21 September 1897.

Tragedi itu berlaku susulan kejadian gempa bumi bermagnitud 7.5 di Laut Sulu di Zamboanga, Filipina.

Menurut Ahli Geologi Universiti Malaysia Sabah (UMS), Prof. Dr. Felix Tongkul, Sabah khususnya daerah Tawau kini berpotensi menerima ancaman tsunami.

Menurut beliau, simulasi ombak tsunami menunjukkan ancaman bencana alam di Tawau adalah tinggi disebabkan beberapa faktor.

Antaranya ialah kerana faktor jarak yang mana sesebuah kawasan dilihat terdedah menerima ketibaan ombak tsunami jika kedudukannya terletak berhampiran dengan kawasan tragedi.

"Mengambil konteks bencana alam yang berlaku di Sulawesi lebih kurang tiga minggu lalu, Tawau bakal berdepan ancaman sama kerana daerah itu terletak 300 kilometer dari Peparit Sulawesi.

"Selain itu, Tawau juga terdedah dengan ombak tsunami memandangkan sebahagian besar kawasan bandar Tawau bertopografi rendah," katanya pada Program Pendidikan Awal Bencana Gempa Bumi dan Tsunami di Kota Kinabalu baru-baru ini.



Dr Sebalik Isu Panas

Bersama IZAN LIYANA MOHD. DARIF

Tambah Felix, ancaman tsunami di Tawau juga bergantung pada tahap kelebaran pelantar laut kerana pelantar yang cetek melambatkan kelajuan ombak tsunami.

"Bagaimanapun, malangnya daerah Tawau mempunyai pelantar yang agak sempit antara 10 hingga 20 kilometer lebar sahaja," jelasnya.

Mengulas lanjut, Felix turut memberitahu, sumber tsunami di Sabah boleh dihasilkan di sepanjang kawasan perairan seperti Peparit Manila, Peparit Mindoro, Peparit Cotabato di Filipina serta Peparit di Sulawesi Utara, Indonesia.

Sementara itu, tanah runtuh di bawah laut pula boleh berlaku di cerun pelantar Sabah di Laut Cina Selatan.

"Simulasi tsunami menunjukkan gelombang tsunami antara

30 hingga 120 minit pada ketinggian satu meter hingga lima meter boleh menimpa Sabah.

"Sehubungan itu, masyarakat Tawau terutamanya harus berwaspada dan bersedia sekiranya tsunami berlaku pada masa hadapan," ujarnya.

Sehubungan itu, bagi menghadapi berlakunya bencana alam khususnya gempa bumi dan tsunami di Sabah, kerajaan negeri berharap supaya kumpulan ahli geologi bersama-sama membantu dalam melakukan persiapan awal.

Timbalan Ketua Menteri Sabah, Datuk Christina Liew memberitahu, mengambil contoh situasi di Tawau bantuan daripada ahli geologi diperlukan memandangkan ancaman tsunami dikhawatiri berlaku.

Pada masa sama, bencana alam boleh berlaku pada bila-bila masa sahaja sama seperti tragedi yang menimpa Palu dan Songgala.

"Justeru, saya berharap pihak ahli Geologi dapat mengenal pasti kawasan-kawasan yang akan terjejas dan langkah awal bagi mengelakkan bencana gempa bumi mahupun tsunami di negeri ini.

"Sementara itu, pertemuan dengan Felix juga akan dilakukan supaya kita dapat memahami lebih lanjut mengenai isu (bencana alam) ini," jelas beliau merangkap Menteri Pelancongan, Kebudayaan dan Alam Sekitar Sabah.

Simulasi tsunami menunjukkan gelombang tsunami antara 30 hingga 120 minit pada ketinggian satu meter hingga lima meter boleh menimpa Sabah



PELUNCUR Brazil, Italo Ferreira mempamerkan aksi menarik ketika pertandingan Rip Curl Pro Portugal di pantai Supertubos dekat Peniche, Portugal kelmarin.

LAMPIRAN 20
THE STAR (SMEBIZ): MUKA SURAT 7
TARIKH: 22 OKTOBER 2018 (ISNIN)

Ongoing support for SMEs crucial

By JOY LEE
joylee@thestar.com.my

Right incentives and policies can boost the bedrock of country's economy

GROWTH is seen to be slowing.

Earlier, Bank Negara lowered Malaysia's economic growth forecast for 2018 to 5% from its earlier estimate of 5.5% to 6%. Between 2018 and 2020, economists are expecting gross domestic product (GDP) growth to be in the range of 4.5% to 5.5%, against the earlier forecast of 5% to 6%.

Amidst tightening measures and unfavourable external factors such as a full-blown trade war, ensuring a stronger SME sector is crucial in strengthening the economy.

The new government has acknowledged the need to continue developing SMEs to achieve an inclusive and balanced growth.

As part of its efforts to strengthen sectoral growth and structural reforms, encouraging SMEs to move up the value chain will be among the government's key focuses to support economic expansion for the remaining part of the 11th Malaysia Plan (11MP) from 2018-2020.

The government intends to increase export capacity, improve market efficiency and facilitate the ease of doing business as part of its strategies for reforms. These will include measures to accelerate the modernisation of economic sectors, increase export readiness and internationalisation, promote fair competition as well as improve regulatory and trade practices.

Entrepreneur Development Minister Mohd Redzuan Yusof has plans to boost SME contribution to GDP to 42% next year from the current 37%.

SME Association of Malaysia president Datuk Michael Kang welcomes this focus.

"We hope the government can provide a more business-friendly policy, especially in human resource development. We need to make it easy to do business here and increase efficiency and transparency in government service."

"This can help reduce the cost of doing business (in the long run). We need to have better competitiveness and be business-friendly," he says.

Kang hopes to also see this support for SMEs in the tabling of Budget 2019 on Nov 2.

"Although the government has said that it is going to be a tight budget, we hope that there will still be a good allocation to SMEs especially in the area of export. The Market Development Grant (MDG) has been particularly useful (and we hope there will be more of that). Export contribution by SMEs is still low at the moment, so there is definitely room to grow," he says.

Another item on his budget wishlist is incentives to help SMEs reduce their reliance on foreign labour.

"There needs to be incentives in the area of automation and in skills training. SMEs are looking into ways they can go forward with automation. But cost of automation is still a challenge. And they need guidance on how to go about it."



Local support: Soh says enforcing 'Buy Malaysia-made' in government procurement activities will reinforce support and confidence in locally manufactured products.

Kang adds.

He is also proposing three years of tax free incentives for startups and e-commerce businesses to help new companies shore up liquidity in the early years. This will help them invest in technology and innovation to build and boost their business.

However, the Federation of Malaysian Manufacturers (FMM) emphasises that all direct tax incentives that will be tabled must come with minimum red tape to support, not only new, but also existing businesses in their efforts to expand, upgrade and diversify.

There needs to be greater certainty and transparency in direct tax benefits, says FMM president Datuk Soh Thian Lai.

Manufacturers are generally positive, albeit cautious, about the outlook for the remainder of the year amid the downside risks in the global economy.

According to the FMM-MIER Business Conditions Survey 1H2018 released on Aug 23, about 40% of manufacturers surveyed were looking forward to an improvement in business conditions.

Meanwhile, 44% foresee no change and 16% expected further deterioration.

"Expectations are looking up for business conditions, sales, produc-



Positive factors: A business-friendly policy and better government delivery system are key to sector's growth, says Kang.

tion volume and cost, and capacity utilisation. Hires are expected to remain stable for the rest of the year, likely due to anticipation that the minimum wage is set to be adjusted higher soon," says Soh.

However, manufacturers, both

small and large, are expecting production costs to increase. In the survey, 52% of the respondents believed that their production costs would increase in the second half of 2018.

Among their concerns over the

next year are to upskill workers, reduce operating costs, seek new markets, introduce new products and services as well as step up productivity training.

"For SMEs (small and medium industries), the emphasis over the next 12 months is to be more efficient in using their existing resources which include upskilling workers and their productivity, reducing operating costs, and managing pricing to remain competitive. Concurrently, they are also seeking new markets for existing as well as new products and services."

"For the larger companies, the emphasis is more towards improving production efficiency through reduction in operating costs and higher capacity utilisation by increasing production."

Nevertheless, large companies are also upskilling workers and their productivity as well as introducing new products and services as a business strategy," says Soh.

Upgrading capacity

One of the issues that has been plaguing SMEs in recent times is the lack of available foreign labour.

"The foreign labour policy is still

> TURN TO PAGE B

LAMPIRAN 20 (SAMBUNGAN) THE STAR (SMEBIZ): MUKA SURAT 8 TARIKH: 22 OKTOBER 2018 (ISNIN)

Incentives needed for IR4 technology adoption

> FROM PAGE 7

unclear. So a lot of SMEs are facing manpower shortage and are finding it hard to fulfil orders. So they need to automate. But they can't do everything at once. So they are starting with mechanising, going online and increasing use of ICT. It has to be step by step," Kang explains.

The government has made mention of the need for manufacturers to adopt Industry 4.0 related technologies to remain competitive in the global value chain. Harnessing the potential of Industry 4.0 will provide new business and wealth creation opportunities.

To enable a conducive environment for the adoption of such technologies, FMM hopes to see incentives that will enable and support the industry for further expansion under Budget 2019. These incentives should encourage investments in R&D and innovation, improve productivity and efficiency as well as upskill workers.

Some of the tax incentives proposed by FMM is the removal of the time bar on the 2016 Budget extended reinvestment allowance (RA) for three years which will expire in 2019.

It says the RA has been well received as it helps existing manufacturers improve competitiveness and productivity through continual upgrading, expansion and diversification. Extending the reinvestment period beyond three years would accrue real benefits since companies reinvest continuously at different times.

Similarly, it hopes the time bar on the capital allowance on automation expenditure will be removed or extended for 15 years as the validity period for the capital allowance from 2017 to 2020 is too short.

"Automation is long-term, requiring substantial investments according to resources and capacity. Industry 4.0 also requires automation to be integrated for maximum effectiveness," it says.

Additionally, it hopes the qualifying expenditure for this incentive can be increased to RM20mil.

It adds that there is also a need to promote and support the growth of local companies that are manufacturing robots through tax incentives like pioneer status, tax free income for the first five years and preferential tax rates at 50% of the prevailing rate for the next five years. This will further support the country's progress into Industry 4.0.



Technology boost: Automation is needed to reduce SMEs' reliance on foreign workers.

FMM is also proposing tax credit on cost of new machinery and equipment contributed by companies to local technical institutions and skills development centre as well as double tax deduction for course fees on certified and professional programmes at local technical institutions paid by companies without using their HRDF levy.

Also, it notes that tax deduction for companies that are implementing waste minimisation, recycling and water conservation activities would contribute to the sustainable development agenda.

"While it appears that there is an impact on tax collections, these proposals would result in medium and long term business expansion which would in turn generate economic growth income and better job opportunities. It would also help the government achieve the aspiration of upgrading and innovation," Soh says.

For the remaining period of the 11MP, the manufacturing sector will continue to be transformed towards producing more high value-added, diverse and complex products.

The catalytic subsectors - the electrical and electronics, machin-

ery and equipment as well as chemicals and chemical products - would remain as priority subsectors, the government said.

The manufacturing sector is expected to grow 4.5% per year from 2018-2020, after growing at an annual 5.2% from 2016-2017.

The government also noted several elements that needed attention to aid SMEs to continuously enhance capacity building and accelerate technology adoption to grow at a faster rate and expand market outreach.

These include enhancing quality infrastructure and efficient utilities, integrating different transport modes, strengthening logistics and trade facilitation and improving digital infrastructure.

Soh adds that it is also crucial to expedite the setting up of a single Technical Vocational Education and Training (TVET) champion agency to overcome fragmentation, standardise training and qualifications and for cost effectiveness.

Expanding markets

As competition continues to heat up, there have been increased calls for SMEs to look at the export mar-

ket.

Malaysia Entrepreneurs' Development Association (PUMM) honorary treasurer Datuk Billy Goh said SME export achieved a higher growth of 7.9% last year, resulting from manufacturing products such as electrical, electronics, palm oil and rubber.

Increasingly, the adoption of e-commerce among SMEs has also helped to widen their market across borders.

Malaysia External Trade Development Corp (Matrade) says e-commerce adoption among Malaysian SMEs is expected to grow 50% by 2020 from 32% in 2016, driven by the sector's interest in online business. Among factors that can drive exports of SMEs through e-commerce are improved productivity, building of capabilities, larger customer base, and lower operating costs.

However, there is still room for growth in the domestic market and Soh urges the government to look into its own procurement policy to encourage growth of local suppliers.

"Strengthen domestic demand and market by enforcing 'Buy Malaysia made' in government

procurement activities including government development and mega projects to reinforce support and confidence in locally manufactured products. Buying local could also provide cost savings in government procurement," says Soh.

Recently, the Domestic Trade and Consumer Affairs Ministry also highlighted a need to have more shelf space in local hypermarkets for products made by Malaysian SMEs.

"Currently, about 20% of products at hypermarkets are from SMEs and we need to increase efforts in order to achieve our target of 30%," said Minister Datuk Saifuddin Nasution Ismail.

He said the ministry is committed to help SMEs upgrade the quality of their products to become more competitive and marketed at top hypermarkets.

"Hypermarkets are big-name establishments and therefore are more fussy when it comes to what products they choose to sell."

"Therefore, I encourage SMEs to work hard to upgrade their products until they tick off all the prerequisites imposed by hypermarkets. The ministry, at the same time, will urge hypermarkets to be more accommodating and help SMEs out," said Saifuddin.

Kang is hopeful that the new government will be able to roll out appropriate measures that will bring their strategies to boost SMEs to fruition.

"The previous government was focused on SMEs. But the implementation didn't go down to the ground. The current government, on the overall, have been trying to increase efficiency and transparency. We hope this will provide a business friendly platform," he says.

"But we want to also see how SMEs can work with the government to develop the country's economy. We can't just be demanding for what the government should do for us. So we want to see how we can build businesses and grow the economy. And having a business-friendly policy and better government delivery system are important for that," adds Kang.

"The government needs to ensure a business-friendly investment climate and policies by reducing the unnecessary regulatory burden to address the threat of premature deindustrialisation. We need a friendly regulatory environment with simple, more transparent, reliable, easy to comply, consistent and fair regulations," adds Soh.

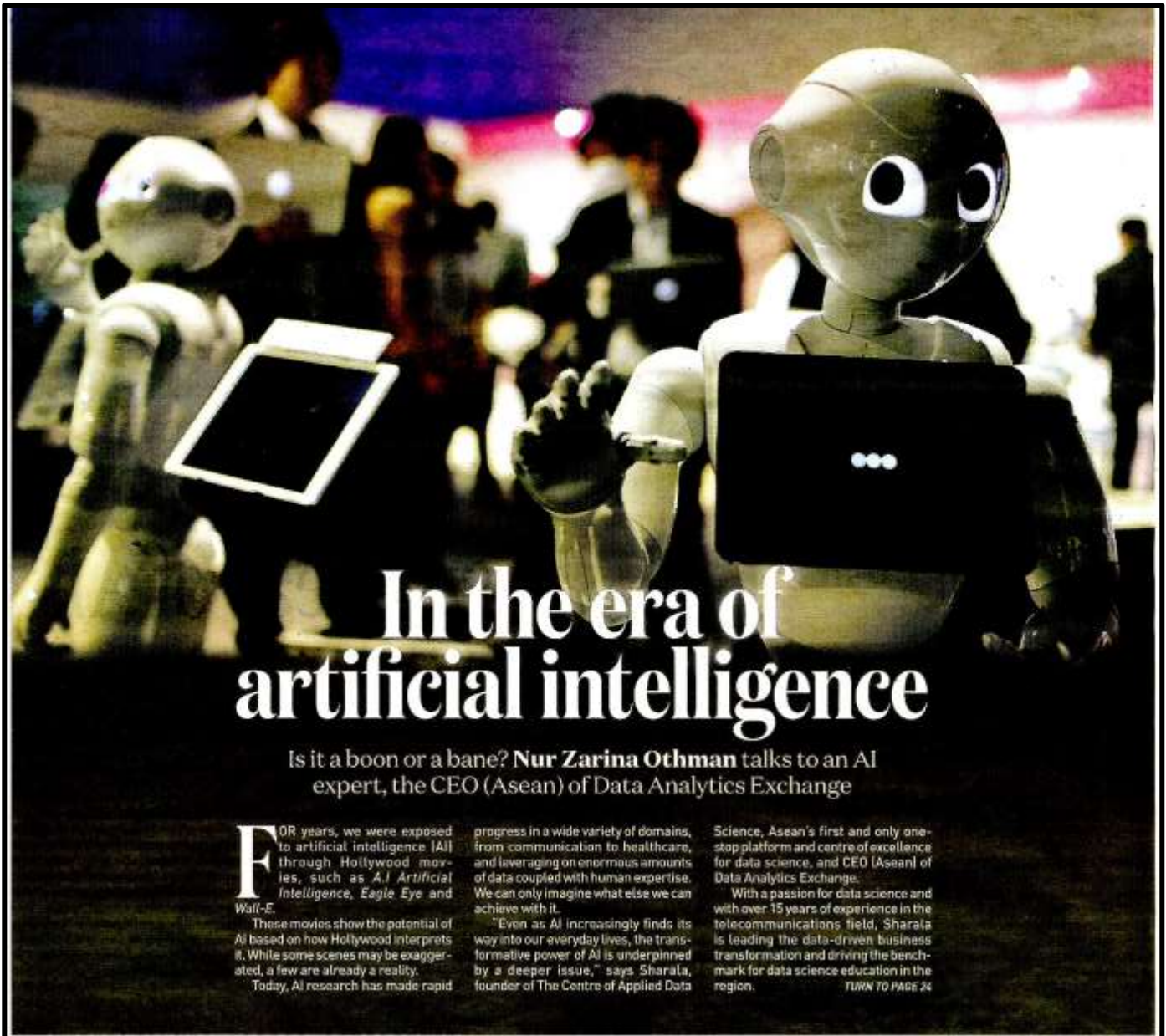


Moving up the chain: The manufacturing sector will be transformed to produce more high value-added, diverse and complex products.



Up ahead: SMEs are looking to upskill their workers, reduce operating costs, seek new markets and introduce new products and services over the next one year.

LAMPIRAN 21
NEW STRAITS TIMES (BOTS): MUKA SURAT 23
TARIKH: 22 OKTOBER 2018 (ISNIN)



In the era of artificial intelligence

Is it a boon or a bane? **Nur Zarina Othman** talks to an AI expert, the CEO (Asean) of Data Analytics Exchange

FOR years, we were exposed to artificial intelligence (AI) through Hollywood movies, such as *A.I. Artificial Intelligence*, *Eagle Eye* and *Wall-E*. These movies show the potential of AI based on how Hollywood interprets it. While some scenes may be exaggerated, a few are already a reality. Today, AI research has made rapid progress in a wide variety of domains, from communication to healthcare, and leveraging on enormous amounts of data coupled with human expertise. We can only imagine what else we can achieve with it.

"Even as AI increasingly finds its way into our everyday lives, the transformative power of AI is underpinned by a deeper issue," says Sharala, founder of The Centre of Applied Data Science, Asean's first and only one-stop platform and centre of excellence for data science, and CEO (Asean) of Data Analytics Exchange.

With a passion for data science and with over 15 years of experience in the telecommunications field, Sharala is leading the data-driven business transformation and driving the benchmark for data science education in the region.

TURN TO PAGE 24

LAMPIRAN 21 (SAMBUNGAN)
NEW STRAITS TIMES (BOTS): MUKA SURAT 24
TARIKH: 22 OKTOBER 2018 (ISNIN)



Governance rids fear of AI

FROM PAGE 23

Intelligence means something that you can understand and apply, i.e. human intelligence. AI replicates human intelligence and it is all done in algorithms.

"AI is a skill and an aptitude to learn and apply, and if it can be done artificially, then that is AI," Sharala says.

Commenting on whether people should worry about AI taking over the world, she says AI has different levels to it.

"Universal intelligence is where AI has the ability to acquire intelligence, even access data. AI can only be at its best if you give it a vast amount of data and only with data will you get the best of AI."

"What everybody fears is general AI — thinking like a human being." For example, if it is a self-learning machine, it will say: My goal is 1,000 paper clips so what can potentially stop me from reaching my goal? Oh maybe, I can be shut down. So how do I find a way not to be shut down?

"That's the fear. Thinking almost like humans, figuring out in advance to ensure that it also achieves its goal of 1,000 paper

clips a day — that's the difference between a normal robot and AI."

WHERE ARE WE TODAY?

Alexa, Siri and AlphaGo are the height of AI. The game of Go originated in China 3,000 years ago. Its rules are simple: players take turns to place black or white stones on a board, trying to capture the opponent's stones or surround empty spaces to make points of territory. As simple as the rules are, Go is a game of profound complexity with over 170 possible board configurations — more than the number of atoms in the known universe, making it a more complex game than chess.

In 2015, AlphaGo became the first computer program to defeat a professional human Go player, the Go world champion, said to be the strongest Go player yet.

AlphaGo has continued to surprise and amaze. Last year, an improved AlphaGo version achieved 60 straight wins in online fast time-control games against top international Go players where it began to play the game by absorbing itself, creating

In healthcare, AI has proven it has 99.99 per cent accuracy in diagnosing cancerous cells.

LAMPIRAN 21 (SAMBUNGAN) NEW STRAITS TIMES (BOTS): MUKA SURAT 25 TARIKH: 22 OKTOBER 2018 (ISNIN)



In 2015, AlphaGo became the first computer program to defeat a professional human Go player.



Hollywood movies have always depicted the potential of AI.

from completely random play.

BENEFITS

AlphaGo has the potential to facilitate major scientific breakthroughs.

We see this at work — from AI-powered voice assistance like Alexa, to solving traffic issues, enabling the sequencing of DNA, tackling business problems and transforming industries such as tech, healthcare and logistics to fintech.

Space exploration is another potential for AI.

"AI minimises human blind-sight and we no longer have to send humans to high risks situation," says Sharala.

"We don't have to send someone who will only get back home after they are 80 years old. Nobody talks about the negative side of travelling to space like bone degeneration in astronauts, for instance, which can be eliminated with AI," she adds.

Meanwhile, in healthcare, AI has proven it has 99.99 per cent accuracy in diagnosing cancerous cells.

In finance, AI can predict the market.

ADAPT

Current AI technologies are estimated to have potential to automate 50 per cent of work activities in Asean's four biggest economies — Indonesia, Malaysia, the Philippines and Thailand.

On that note, when steam engines came, everyone said horses would be killed and people would lose their job. Instead, more jobs were created after that.



It is more of a worry of people misusing AI rather than it taking over the world.

Sharala Axryd

"We should stop being ignorant, like the Malay proverb katak dibawah tempurung.

Today, the sexiest job of the century is being a data scientist. AI can take over but by then we will have adapted."

This year, it's all about AI. The last couple of years we've been talking about machine learning and data science.

"We've heard about Google assistance and its ability to make calls, integrated messaging ecosystem Chatbox where businesses create and automate personalised conversations, and other day-to-day chores with the assistance of AI."

Awareness is there but we lack big companies to implement data-driven analytics.

"We need to start building our own technology-driven companies. Malaysian has so much potential but we are still a follower in this industry. I would set five years for us to start be on par with some of the high technology countries. If we don't embrace AI we'll be left out. We just have to move fast."

Job losses are real but nobody talks about the benefits AI creates.

"For example, people working in a chemical plant are exposed to dangerous substances. This is where AI and robots come in. If we have machines to do this, our health improves."

In the movie Wall-E, humans are lazy and robots do everything.

"We no longer have Malaysians maids because the quality of our lives has improved. No one wants to be a maid anymore. One day, Indonesians may not want to be maids too."



We are becoming too lazy to type and most depend on this AI assistance.

When quality of life becomes more important to us, we want mundane things taken over by AI.

"As jobs are done faster with the help of AI, we have more time to spend with family and take up hobbies."

GOVERNMENTS AND GOVERNANCE

The biggest fear is AI taking over the world. Taking Alexa as an example, we are becoming too lazy to type and most depend on this AI assistance.

"We worry about superhuman AI that will take human form," says Sharala.

This is where governments and governance come into play. We put seatbelts into cars, and have driving licenses. The same goes for AI. "Instead of reacting negatively, governments should create governance of AI."

The biggest potential weakness is to just let it be.

"It is more of a worry of people misusing AI rather than it taking over the world."

LAMPIRAN 22
KOSMO (NEGARA): MUKA SURAT 18
TARIKH: 22 OKTOBER 2018 (ISNIN)

Teknologi SFI jimatkan masa, kos nelayan tangkap ikan

KUALA TERENGGANU - Jabatan Perikanan Malaysia berharap lebih ramai pengusaha vesel atau bot nelayan menggunakan teknologi Sistem Penentuan Lokasi Perangkapan Ikan (SFI) pada masa akan datang. Ketua Pengarah Perikanan, Datuk Munir

Mohd. Nawi berkata, ketika ini, hanya 500 hingga 1,000 pengusaha memanfaatkan teknologi itu dan mereka dapat menjimatkan kos operasi antara 30 ke 40 peratus setiap kali turun ke laut.

"Dengan adanya maklumat lokasi ikan

ini, nelayan dapat menjimatkan kos keseluruhan operasi (minyak dan masa) berbanding kaedah biasa yang memerlukan nelayan bergerak dari satu kawasan ke kawasan lain untuk mencari kawasan ikan yang banyak," katanya pada majlis pembukaan kursus latih-

han akustik antarabangsa di sini semalam. Teknologi SFI mula diwujudkan pada 2010. Setakat ini, terdapat kira-kira 8,000 pengusaha vesel untuk lesen B dan masing-masing 1,000 pengusaha untuk lesen C serta C2 di seluruh negara. - Bernama

LAMPIRAN 23
THE SUN (SPEAKUP): MUKA SURAT 8
TARIKH: 22 OKTOBER 2018 (ISNIN)

Coupling technology, enforcement for sustainability

ON THE OTHER HAND ...

BY HAFIDZ BAHAROM



ONE of the biggest problems in Malaysia is that we do not have the audacity to truly automate and regulate whatever laws we have, let alone the latest one we introduced.

Consider the following – the Ministry of Health recently introduced a regulation barring Malaysians from smoking at open-air spaces in eateries, with a penalty of RM2,500 imposed on the eatery and RM10,000 for the smoker.

While they managed to implement this regulation in Parliament, fining eight people, how are they going to do it throughout Malaysia?

Are they going to plant someone in each and every restaurant, roadside stall, mamak restaurant and even roadside stall in the country to implement it? Are they expecting every security guard at a mall to ride a Segway and conduct a citizen's arrest, like the movie *Paul Blart: Mall Cop*?

Even more vexing was a statement from the deputy health minister saying that vaping will not be policed unless it contains nicotine.

In my mind, this conjured up an image of a mamak restaurant being raided like a nightclub, with each patron being told to hand over their IC and every vape device being tested for traces of nicotine before being asked to leave.

The problem is still the same when implementing a non-smoking law at every national park. What is the government going to do to implement it? Have the authorities hike into reserve forests and issue summonses to each and every smoker in the park?

All of these seem nonsensical in any logical and rational thinking Malaysian, even if they hate the smoke emitted from smokers.

The issue of automation would make all

these easier. For example, why are restaurants and eateries not equipped with smoke detectors as a nationwide initiative? In fact, why don't we have such a policy for apartments and high density residential and mixed development units?

In fact, this was the purpose of having an automated enforcement system (AES) in the past. While the privatisation of the deal was lopsided and unacceptable, that has been made right by the current government.

However, such a system can be used to enforce more than just speeding laws for cars.

The AES can be upgraded to monitor emissions, yet another regulation that is not viewed seriously, even if the Ministry of Energy, Science, Technology, Environment and Climate Change wants to push the blame on to factories and Lynas, when it should look to our roads and highways.

At the same time, the AES can be a boon for pedestrians, to monitor motorists who beat red lights and put them at risk, which can happen even in residential zones and schools gazetted with speed limits of 30km an hour.

Furthermore, such automation can also be implemented to monitor the biggest problem with public transport – reliability.

For far too long, buses have been given leeway for being late due to traffic. A Global Positioning System (GPS) has been used in express buses since 2014, attached to a so-called "black box".

Why not implement a similar programme for feeder buses? The technology to monitor the traffic via the AES, coupled with a Closed Circuit Television (CCTV) system and the GPS monitoring technology would be able to provide accurate times to each and every bus stop, allowing people to time their journey without having to wait, clueless as to when the next bus will arrive.

Of course, with better resolution for CCTVs towards high definition imagery, it could even be used to monitor littering – yet another regulation that has failed in implementation.

And that reliability will translate into better ridership. Coupled with increase enforcement in the form of emissions monitoring and the AES, this will take more cars off the road both in urban and rural areas. Of course, it will also lower emissions as well.

These technologies, of course, are not new. We have even seen police panic button technology implemented into smartphones using GPS technology to find out where they are needed. This same technology is implemented for senior citizens to call for first responders and an ambulance.

Yet another implementation that should be done rather than expect these individuals to somehow make the journey to a clinic even with a B40 insurance plan.

Again, nothing above is new in terms of implementation in other countries, which can be seen in cities like London, New York, Tokyo, Seoul and even going just down south to Singapore.

The problem in Malaysia has always been the lacking in political will to implement such plans.

So that is how you can couple sustainability, automation and enforcement altogether.

The technology and systems are available, the regulations have been used in other cities, and yet, our policy makers seem to be oblivious to such adaptations, regardless of how many times they go out of the country for a "working visit".

Yes, initial implementation and maintenance will have costs, but having it implemented to the point of not even forgiving a single speeding summons regardless of the person's rank or profession (read: politicians) will guarantee revenue for the government while ensuring that Malaysians adhere to proper regulations or find an alternative for themselves.

Hafidz Baharom is a public relations practitioner. Comments: letters@thesundaily.com

LAMPIRAN 24
UTUSAN MALAYSIA (DALAM NEGERI): MUKA SURAT 1
TARIKH: 22 OKTOBER 2018 (ISNIN)

RISIKO BENCANA DI CAMERON

“Cameron Highlands mungkin tidak lagi selamat untuk pelancong, penerokaan haram sebab utama berlaku bencana ditambah perubahan iklim, aliran air hujan dan sistem pertanian tidak mesra alam sekitar.”

DR. KHAMARRUL AZAHARI RAZAK

Pakar di Pusat Kawalan dan Persediaan Bencana, UTM

» Pakar dakwa Cameron Highlands tidak lagi selamat untuk pelancong.

» Kajian tahap daya tahan bencana dijalankan dapati tanah runtuh, banjir lumpur boleh berlaku.

» Aktiviti penerokaan, pembalakan haram berleluasa, tingkatkan risiko bencana pada masa depan.

» Ejen pelancongan dibimbangi tidak lagi senaraikan Cameron sebagai destinasi dilawati.

KEBUN sayur dan rumah plastik dibina di Cameron Highlands. - UTUSAN/ SURIYA BONMA

**BERITA
DI MUKA 2**

LAMPIRAN 24 (SAMBUNGAN)
UTUSAN MALAYSIA (DALAM NEGERI): MUKA SURAT 2
TARIKH: 22 OKTOBER 2018 (ISNIN)

Jika teroka tanah berterusan di Cameron Highlands Tidak lagi selamat

Oleh ZAKKINA WATI AHMAD
TARMIZI

pengarang@utusan.com.my

■ KUALA LUMPUR 21 OKT.

CAMERON Highlands didakwa tidak lagi selamat untuk pelancong sekiranya aktiviti penerokaan dan pembalakan haram masih berleluasa.

Pakar di Pusat Kawalan dan Persediaan Bencana, Fakulti Teknologi dan Informatik Razak, Universiti Teknologi Malaysia (UTM), **Dr. Khamarrul Azahari Razak** berkata, mengikut kajian tahap daya tahan bencana yang dijalankan, kawasan-kawasan bahaya di Cameron Highlands amat berpotensi tinggi untuk meningkatkan kadar risiko bencana pada masa hadapan.

"Cameron Highlands mungkin tidak lagi selamat untuk para pelancong dan penggemar percutian lokasi tanah tinggi sekiranya penerokaan haram menjadi salah satu sebab utama berlakunya bencana ditambah lagi dengan perubahan iklim, kadar aliran air hujan di kawasan pertanian berbukit dan sistem pertanian yang tidak mesra alam sekitar.

"Dengan kesesakan lalu lintas saban minggu, penggunaan baja yang berlebihan (atas desa-



**DR. KHAMARRUL
AZAHARI RAZAK**



UZAIDI UDANIS

Malaysia hari ini yang menunjukkan penerokaan tanah di Cameron Highlands kini semakin parah dan berada pada tahap membimbangkan.

Jelas Khamarrul Azahari, kejadian bencana tanah runtuh dan banjir lumpur pada 2013 dan 2014 di Cameron Highlands merekodkan penurunan jumlah pelancong sebanyak 18 peratus.

"Ini sedikit sebanyak merugikan peniaga dan pengusaha resort di kawasan tanah tinggi. Para pelancong dan pelawat luar mungkin terdedah kepada risiko



KERATAN Mingguan Malaysia semalam.

kan permintaan) serta tahap kesiapsiagaan bencana yang rendah akan menimbulkan kesangsian terhadap pelabur-pelabur," katanya ketika dihubungi *Utusan Malaysia* di sini, hari ini.

Beliau mengulas laporan *Mingguan*

bencana tanah runtuh dengan ketiadaan sistem amaran awal, penyebaran dan perkongsian maklumat peta risiko dan program kesiapsiagaan yang berterusan.

"Malah ia juga memberi impak negatif secara langsung terhadap sosial, ekonomi dan alam sekitar dalam jangka masa panjang," katanya.

Sementara itu, Presiden Persatuan Pelancongan Dalam Malaysia (MITA), **Uzaidi Udanis** berkata, sektor pelancongan negara akan terjejas sekiranya pihak berkuasa tidak memantau aktiviti penerokaan haram di Cameron Highlands.

"Kita risau sekiranya tiada pemantauan, kemungkinan Cameron Highlands tidak akan disenaraikan dalam itinerari ejen pelancongan bagi pasaran dunia.

"Kira-kira 740,000 pelancong melawat Cameron Highlands setiap tahun dan ini akan merugikan sektor pelancongan negara," katanya.

LAMPIRAN 25

THE STAR (COMMUNITY): MUKA SURAT 4

TARIKH: 21 OKTOBER 2018 (AHAD)

STEM LITERACY FOR INDUSTRY 4.0

WHEN people think of pineapples, a sweet and tangy fruit comes to mind.

What many do not realise however is the time consuming effort taken by pineapple farmers to determine the optimal ripeness of the fruit for harvesting.

Most farmers have to wait around six to 12 months for the pineapple to ripen as the conventional methods of determining the ripeness of a pineapple depend on its colour, size, aroma and how it "sounds" when tapped.

But three students from Universiti Tun Hussein Onn Malaysia in Johor have created a handheld sensing device that can assist pineapple farmers in evaluating optimal levels of ripeness of the fruit for harvesting – without resorting to poking or prodding.

Calling themselves Team Pine, the students leveraged on a combination of technologies such as optical sensing, machine learning and Internet of Things to perform the Brix test (a common method of determining quality of fruits) on pineapples.

The team then went on to become the champion at Microsoft's Imagine Cup Asia Pacific Regional Finals.

What made Team Pine's victory even sweeter was that their passion for pineapples goes beyond just helping farmers make a better living; they set out to help Malaysia meet the United Nations Sustainable Development Goal #12 – responsible consumption.

Malaysia's STEM Initiative

Most technical problems can be solved with the application of Science, Technology, Engineering and Mathematics (STEM). Just like how Team Pine drew together technologies from different STEM disciplines, virtually all solutions require the combination of insights and application from the science spectrum.

But most importantly is having the people behind the technologies with the foresight and interest to connect the dots and innovate.

This is the vision of the STEM initiative in Malaysia. The initiative is ultimately tasked with providing a pipeline of students that will eventually fill the one million new STEM careers that Malaysia will need by 2020. These jobs include doctors and technicians as well as careers of the Industrial Revolution 4.0, such as data scientists and programmers.

According to the Malaysia 2018/2019 Salary Guide by Kelly Services & Capita Global, fresh STEM graduates with minimal work experience can expect upwards of RM3,900 as an automation engineer or even RM5,200 as a Java developer.

The initiative looks at more ambitious targets beyond raising a generation of future innovators and technopreneurs; it seeks to create a tide that lifts all boats and inculcate a STEM mindset in every Malaysian student.

The Education Ministry also believes that a core of STEM literacy and the values and approaches from a STEM education are inte-



Sweet success: Team Pine from Universiti Tun Hussein Onn Malaysia created a sensing device for farmers that evaluates pineapple ripeness. The technologies that the team employed made them champion at Microsoft's Imagine Cup Asia Pacific Regional Finals.



Students showcasing their invention at a STEM fair. Malaysia's STEM initiative is to generate a pipeline of students that will eventually fill the one million new STEM careers that Malaysia will need by 2020.

gral in life and career, even outside of STEM.

For instance, the scientific method of generating and validating hypotheses is the foundation of the management consulting practice up to this day.

This goal of embedding STEM knowledge and skills in all students is best reflected in a prominent global movement that Malaysia is part of – STEMforall. It represents the philosophy that a STEM education is relevant and beneficial to all, regardless of gender, socio-economic status or even ability.

Lack of STEM uptake

Behind all the good intentions of the wonders and future in STEM lies a massive challenge that countries around the world face – globally fewer children are interested in STEM.

In the United States for example, it is estimated that the country will face a shortage of more than 2.2 million STEM workers while the United Kingdom is currently experiencing a 40,000 shortfall in STEM graduates across the country – costing the country's economy an estimated £63billion a year in lost GDP.

In Malaysia, it sees a steady drop

in student enrolment in Science streams. The number of Form 5 students studying Science subjects has dropped an average of 6,000 per year since 2012, and this year's enrolment stood at only 167,962 out of 375,794 (44.7%).

Equally worrying is the quality of STEM graduates. More than 48% of Sijil Pelajaran Malaysia (SPM) candidates failed to obtain a Credit grade of C for Additional Mathematics, a prerequisite to enrol in STEM undergraduate courses.

What is even more worrying is that science and technical graduates have the highest unemployment rate among all other graduates in the country at 20.7%.

Stepping up STEM interest

There are many theories when it comes to how interest and quality of students in STEM fields is nurtured.

One of the most compelling methods is to provide STEM experiences to students through extra-curricular activities.

Research published by CBE-Life Sciences Education found that students who are exposed to extra-curricular encounters, such as visiting

a science fair or watching a sci-fi movie, are more inclined and interested in STEM.

The research team followed a group of young students that demonstrated clear passion in STEM through joining the Aspiring Scientists Summer Internship Programme (ASSIP) and completing 300 hours of research, despite their early age.

What was even more interesting was that most of the encounters were introduced to the students through parents, relatives or friends. Thus, a combination of being led to an encounter by a trusted source and the inspiration from the encounter itself was enough to ignite a passion and interest in STEM among the students.

This is the direction that our Education Ministry is taking – providing quality STEM experiences to students across the country.

Among the efforts taken by the ministry include expanding STEM related extra-curricular activities such as F1 in Schools (an international STEM competition for students) and STEM+ clubs.

The ministry is also spearheading a STEM mentor-mentee programme in which teachers and students are partnered with STEM

professionals and undergraduates to allow for a hands-on experience of the industry.

The ministry has also invested in state and national-level STEM fairs where students collaborate and compete to apply their knowledge on STEM subjects and create innovations.

However, the ministry and schools cannot do this alone. As research indicates, parents and kin play an extremely large role in lighting the first spark of interest among students.

There is a wealth of opportunities for parents to get their children involved, from watching films such as Disney's *Big Hero 6* to taking their children for an introductory coding class.

This is why the ministry is piloting a STEM Change Agent Network together with Microsoft Malaysia and organisations such as Petrosains and Kidcode to organise more engagement activities to spread awareness of STEM among Malaysian parents.

"As we work towards future-proofing Malaysian youth with inclusive education and digital skills, we are proud to be partnering PADU (Education Performance and Delivery Unit) and the Education Ministry, as STEM and digital skills are the passport to new opportunities in today's global economy," said Dr Jasmine Begum, director of Legal, Corporate, and Government Affairs for Microsoft Malaysia and New Markets.

Ultimately, it is hoped that all parties can join the movement to ensure that our children are armed with future-proof STEM skills and help usher in Industry 4.0 into our nation.

Who knows? Your child could be the next technopreneur revolutionising the pineapple industry, or more!

For more information on STEM initiatives and resources, go to www.stem.padu.edu.my or www.facebook.com/STEMMalaysia.

LAMPIRAN 26
THE STAR (STARBIZ): MUKA SURAT 7
TARIKH: 20 OKTOBER 2018 (SABTU)

CEO: Government should consider carbon tax to drive clean energy

KUALA LUMPUR: The government should consider imposing carbon tax on development projects in the future to drive clean energy and green technology.

Malaysia Green Technology Corp group chief executive officer Dr Mohd Azman Zainul Abidin said if

the tax is implemented, it should be less than 1% of the total revenue from the projects.

"The amount of tax to be paid to the government will depend on the project's carbon emission so that small players would not be too affected by the tax.

"This will also help to reduce carbon footprint in the country," he said in a press conference here yesterday after exchanging memoranda of understanding with Germany's Deutsche Gesellschaft Internationale Zusammenarbeit and Iskandar Halal Park.

He noted that companies could pass on the tax burden to consumers or implement various initiatives to reduce it by conducting activities such as recycling and using green energy sources like solar.

"However, the government

must engage with the stakeholders and review the policies before implementing such tax.

"Should the tax be implemented, it could subsidise green technology, especially in producing clean energy," he said. — Bernama

LAMPIRAN 27
THE STAR (NATION): MUKA SURAT 1
TARIKH: 20 OKTOBER 2018 (SABTU)



A very high price to pay

Just two weeks shy of the devastating storm that hit Penang last November, a major landslide has hit Paya Terubong where the paired road project is on-going, killing two foreign workers and seven still missing at press time. Shocking information obtained by *The Star* revealed that not a single construction site in Penang followed the soil erosion mitigation plan. >See Pages 2 & 3 for reports by ARNOLD LOH and LO TERN CHERN



Disaster season: Aerial view of the landslide at Bukit Kukus. (Inset) The SAR operation by Fire and Rescue Department is still ongoing. — ZAINUDDIN AHAD & LIM BENG TATT/The Star

LAMPIRAN 27 (SAMBUNGAN)
THE STAR (NATION): MUKA SURAT 2
TARIKH: 20 OKTOBER 2018 (SABTU)

Erosion mitigation plans ignored

Checks show projects did not follow SOP

By **ARNOLD LOH and LO TERN CHERN**
north@thestar.com.my

GEORGE TOWN: As the search and rescue operation for seven buried foreign workers at a construction site in Paya Terubong is going on, shocking information has surfaced that not a single construction site in Penang is following the soil erosion mitigation plan stipulated in their project approvals.

The Star has learnt that the state government has launched *Ops Lumpur* shortly after the general election, requiring enforcement officers from the local councils to inspect and report on every construction site in all five districts in the state.

A consultant civil engineer familiar with *Ops Lumpur* claimed that every single construction project did not observe the soil erosion mitigation plan.

He said *Ops Lumpur* was overseen directly by state exco members and enforcement officers were required to visit the sites.

"Their reports shocked the state exco members. Every contractor failed to do soil erosion measures in every site.

"Now you know why streams near construction site are always yellow when it rains," he said.

The consultant engineer said the state went after developers who claimed they were not aware and blamed the contractors.

"Civil engineers are often disgusted when they do site visits because it is common for us to see that the soil erosion mitigation plans are never followed," he said.

The consultant said it was easy to inspect construction sites and check on the progress and questioned whether state government

agencies regularly conducted scheduled and surprise visits.

"How often do they conduct spot checks? How strictly do they conduct enforcement rounds on construction sites? If we keep contractors on their toes all the time, we might not have so many landslides," he said, referring to the latest landslide in Bukit Kukus, the site of a hillside highway from Paya Terubong to Bukit Jambul is being built.

A *teh tarik*-coloured stream was observed flowing between Jalan Paya Terubong and the barred entrance to the highway construction site yesterday.

It has been raining almost every day in Penang this week.

In yesterday's incident, rescue team found one survivor and two dead bodies. At press time, seven are still missing.

The Fire and Rescue Department received a distress call about the landslide at 1.56pm.

An Indonesian worker who only wished to be known as Endo, 36, said three of his relatives from Sulawesi were trapped in the landslide and he was working in another nearby construction site.

"It rained all night (Thursday). The rain stopped at 9am (yesterday) and resumed at 1pm. At my site, all of us stayed in our quarters and didn't work because of the rain.

"I got a call from others that my relatives are missing. So, now I'll just wait," he said.

Last Thursday, 14 concrete beams measuring 25m long each, crashed down from an elevated section of the highway.

No injuries were reported and a stop-work order was issued pending investigations of the collapse.

Chief Minister Chow Kon Yeow, who visited



the site with several state exco members, said he reminded rescue workers to be wary while searching for the missing victims because the rain could have rendered the slopes unstable.

"All work has stopped here and the contractor was about to send in its report on the collapse of the concrete beams on Oct 11," he said, adding that the place where the beams collapsed was far from the landslide.

Watch the video
thestartv.com



October and November turning into 'disaster season'

GEORGE TOWN: October and November are turning out to be a "disaster season" for Penang, no thanks to the inter-monsoon period.

The landslide at the highway under construction in Paya Terubong happened just two days shy of the first anniversary of the Tanjung Bungah landslide.

Last Oct 21, a landslide in a construction site in Tanjung Bungah killed 11 workers including one Malaysian — site supervisor Yuen Kuok Wern.

That tragedy was declared a work site acci-

dent and a state commission of inquiry was set up to look into it. The commission's report is still being prepared.

Last Nov 4 and 5, the inter-monsoon period hit Penang with a tempest that flooded large parts of the state for days.

On Nov 7, 2016, a major landslide cut off access to the main Jalan Balik Pulau-Jalan Teluk Bahang arterial road known as Jalan Ujung Batu near the Tropical Spice Garden after five hours of rain.

Meanwhile, Penang Forum members Dr

Kam Suan Pheng, Dr Lim Mah Hui and Meenakshi Raman went to the highway construction site in Paya Terubong yesterday but were not allowed to enter.

Meenakshi, who is also Tanjung Bungah Residents Association chairman, said it was tragic that this landslide should happen so close to the first anniversary of the Tanjung Bungah landslide.

"The commission of inquiry has not even finished their report yet and another one has happened," Meenakshi asked.

LAMPIRAN 27 (SAMBUNGAN) THE STAR (NATION): MUKA SURAT 3 TARIKH: 20 OKTOBER 2018 (SABTU)



Tragic situation: (Top) A landslide at the construction site in Jalan Bukit Kukus, Paya Terubong, caused four containers to be covered in mud. — Bernama



Close call: (Left) Survivors of the landslide surveying the scene.

Security firms want to renegotiate deals with govt

RANGI: Security companies are demanding to renegotiate their contract agreements with the government, especially when they are owed more than RM300mil.

Security Services Association of Malaysia president Datuk Seri Mustapa Ali said some 600 of its member companies had yet to receive payments from various ministries and agencies for over six months.

"This is a long-standing issue and one that really burdened the companies, forcing 30% of them to close down," he told a press conference after attending a dialogue between association members and representatives from various ministries.

"We will meet with the Attorney General's Chambers to renegotiate the contracts soon."

"Our member companies employ to 300,000 security personnel."

"When they don't receive their payments, the companies still have to pay their workers and make EPF and Socso payments."

"They also have to service their respective bank loans, including mounting interest payments."

Mustapa said the association had initially planned to organise a large-scale protest including telling their security guards not to show up for work at the various ministries because of the overdue payments.

"However, as some of the ministries have settled the overdue payments, we are not going to protest."

"If things are not settled within the next few days, then we will decide on further action," he said, adding that the Education Ministry was one of biggest clients for security companies.

Mustapa also urged the government to reduce the security licence fee from RM3,000 to RM1,000.



Painful ordeal: The search and rescue operation by the Fire and Rescue Department is still ongoing while a survivor has been sent to hospital.

'Put safety measures into place at construction sites'

By WAN MUTHIAH and MOHD FARHAAN SHAH
newsdesk@thestar.com.my

KLANG: All local councils in the state have been advised by the Selangor Disaster Management Unit to institute necessary measures to prevent rain-related mishaps from occurring at construction sites.

The unit's head Ahmad Fairuz Mohd Yusof said the local councils have been told to ask construction sites to install sufficient mitigation to prevent and counter landslides, debris flow and mud flood.

"These are all man-made disasters that can be prevented if the necessary mitigation was in place," said Ahmad Fairuz when contacted.

He said since the monsoon season is expected to start next week and will last until January, everyone concerned have been cautioned.

"With the rain comes flash floods and landslides can happen if there are exposed slopes

as a lot of absorption will take place and the ground will become soggy and heavy," he said. Ahmad Fairuz added that it would be only a matter of time before a landslide occurs if the slopes that have been cut-up are not properly covered.

"We have also advised for water management run off at construction sites because a bad flow will also cause landslides," added Ahmad Fairuz.

In Johor Baru, Universiti Teknologi Malaysia (UTM) centre of geotropical director Prof Edy Toenizam Mohamad said heavy rainfalls and major development projects taking place at hillside areas will see high chances of landslide happening frequently nationwide.

"We see developers cutting slope to make way for their project at hillside areas and this is a major concern especially in a tropic country like Malaysia," he said when contacted here yesterday.



End of the road: Some of the suspects arrested in connection with the hit-and-run in Cyberjaya at the Sepang Court.

LAMPIRAN 28
THE STAR (SCIENCE): MUKA SURAT 5
TARIKH: 22 OKTOBER 2018 (ISNIN)

How to find life on other worlds

Advice to Nasa's astrobiologists.

By KAREN KAPLAN

IT'S one of the biggest questions there is: Are we alone in the universe?

Nasa scientists in the field of astrobiology are looking for answers. A new report from the National Academies of Sciences, Engineering and Medicine has some advice to help them along.

The report was released not so long ago in Washington. Here are some of its recommendations.

Scientists searching for life on other worlds should look beneath the surface

If you were to look at Earth from space with an extremely powerful telescope, the signs of life would be obvious: Trees clustered in rainforests, herds of elephants roaming across the savanna, the distinctive colours of algae blooms on the water.

But there's also plenty of life beneath the surface. Consider the soil microbes that produce natural antibiotics, or the giant tube worms (they're actually mollusks) that thrive on the freezing ocean floor, fueled by hydrothermal vents instead of light from the sun.

Other worlds that may look dormant on the surface could harbour life in their interiors.

Enceladus, Saturn's six-largest moon, is a prime example. Its frozen exterior may give the impression that it's nothing more than a giant ice cube.

But you can't judge a world by its outer shell. Nasa's Cassini spacecraft revealed that Enceladus has a briny subsurface ocean with complex organic molecules. That, along with heat generated by tidal forces, makes scientists think that the moon could be hospitable to life.

Scientists need a better idea of how they would recognise alien

life if they were to find it

If astrobiologists detect evidence of life, how would they know? Are there certain essential features that any form of life must have? Are some of them unique to living things?

In science-speak, the thing astrobiologists are looking for is a "biosignature" – a detectable sign that life is (or was) present. It may be a particular shape that only a living being could produce. It may be a distinctive pattern of chemical compounds that must have had a biological origin. It may be a gas (or mixture of gases) in a planet's atmosphere that couldn't exist in a lifeless system.

There is still much debate about what would qualify as a biosignature. The report recommends that astrobiologists buckle down and figure this out.

In doing so, they need to consider what would distinguish an actual biosignature from a false alarm. They also need a way to tell whether they've seen a true biosignature but accidentally rejected it.

Scientists need to invent some kind of life-detection technology and make sure it really works

One possibility for detecting life is to focus on biosignatures in exoplanet atmospheres. In the last decade, new technologies have greatly improved scientists' ability to analyse the contents of these distant atmospheres, and Nasa should do what it can to accelerate this work, the report said.

It's also important to look closer to home. Potential biosignatures from some of Earth's oldest sedimentary rocks can provide scientists something to practice on.

When Nasa sends robotic explorers into space, they should be capable of analysing DNA and RNA with great precision. Ideally, they should be able to study a single sample



Satellite view of the Americas on Earth Day, April 22, 2014. Other worlds that may look dormant on the surface could harbour life in their interiors. — Nasa/TNS

using a multitude of techniques. In designing test equipment, engineers should focus more on getting the science right than on building something quickly or saving a few bucks.

Another important consideration: Any technologies used on other worlds should tread as lightly as possible. And no matter what, they should not contaminate any other part of the universe with life from Earth.

Nasa should make sure that astrobiologists are involved in planning future missions

And they shouldn't wait to be consulted until after key decisions are made – astrobiological factors should be baked in from the very beginning, when a mission is still in the conceptual stage.

People with expertise in astrobiology should remain involved at every step of the way. That includes the operational phase, when a space probe is actually carrying out its assigned work.

Don't be afraid to ask for help

Astrobiologists have stepped up their collaboration with Nasa

experts in astronomy, Earth science, planetary science and heliophysics. But why stop there?

Nasa should coordinate its research efforts with the National Oceanic and Atmospheric Administration and the National Science Foundation, the report advises. It should also team up with space agencies from other countries.

Nasa should even rely on non-profit initiatives that search for signs of technologically advanced civilizations, such as the SETI Institute and Breakthrough Listen. — Los Angeles Times/Tribune News Service

LAMPIRAN 29
THE STAR (WORLD): MUKA SURAT 25
TARIKH: 22 OKTOBER 2018 (ISNIN)

Delhi holds breath as burning farms signal pollution season

ISHARGARH: Harpal Singh struck a match and watched his fields burn, the acrid smoke drifting toward New Delhi, where a lethal smog cocktail is once again intensifying over the world's most polluted megacity.

Every November, air pollution in northern India reaches levels unimaginable in most parts of the world, forcing schools shut and filling hospital wards with wheezing patients.

As winter descends, cooler air traps car fumes, factory emissions and construction dust close to the ground, fomenting a toxic brew of harmful pollutants that regularly exceed 30 times the World Health Organization safe limit.

The scourge is compounded as farmers like Singh – rushing to ready their fields for next season's wheat crop – use fire to quickly and cheaply clear their land.

He knows slash-and-burn farming is illegal and that doing so, year

after year, helps sicken millions in the Indian capital and beyond.

But local authorities appear powerless to stop it and the narrow window to plant for the winter harvest is closing.

"We have no other choice but to burn the straw," Singh, 65, said in Ishargarh, a village in Haryana state, about 120km northwest of Delhi.

"We know the smoke pollutes the air. But it is the cheapest and easiest way to get rid of the (crop) residue".

This smoke is already reaching Delhi, bringing a familiar sepia haze and a bad omen for officials wanting to avoid a third straight year of record-setting smog.

Deterrents, such as fines of up to US\$200 (RM830), appear to have limited effect.

Satellite imagery shows countless spot fires already burning in Haryana and Punjab, two breadbasket states bordering Delhi.

S. Narayanan, from Haryana's

We know the smoke pollutes the air. But it is the cheapest and easiest way to get rid of the (crop) residue.

Harpal Singh

State Pollution Control Board, said 300,000 rupees (RM16,960) in fines had been issued and fires were down 40% in some areas.

Farmers represent powerful voting blocs in rural states like Haryana and Punjab, and local authorities are reluctant to upset them.

Efforts to persuade farmers, many living below the poverty line, to adopt other methods of land

clearance have fallen on deaf ears.

Many have balked at suggestions of buying Happy Seeders – machines which, according to media reports, cost at least 150,000 rupees (RM8,480) – that sow wheat without needing to dispose of the leftover straw.

The government is offering a subsidy of 50% to individuals and 80% to groups of farmers to encourage them to use the machines.

"We are already in debt ... and we can't afford even the subsidised machines," said farmer Karnail Singh, 60, suggesting that the government pay farmers by the acre not to burn their fields.

Television ads, social media campaigns and meetings at the village level have also had limited success.

Powerful farmers unions say the government's ideas, such as encouraging farmers to sell straw to factories, overlook extra costs imposed on poor rural families.

"Who will bear the cost of trans-

porting the straw? Farmers are also concerned about the pollution, but they are helpless," said Sucha Singh from Bhartiya Kisan Union, a farmers' rights group.

Many farmers feel scapegoated for the modern-day problems of India's fast-growing, chaotic cities.

The WHO in May listed 14 Indian cities in the world's top 15 with the dirtiest air, with Delhi dubbed the most polluted major centre.

With smoke on the horizon, the Delhi government is squaring off for a fight with its neighbours.

It recently closed its last coal-fired power plant, but the city's chief minister Arvind Kejriwal warned of another smog crisis if Punjab and Haryana failed to take "concrete steps" on crop fires.

"The entire region, including Delhi, will again become (a) gas chamber," he said on Oct 12.

"People will again face difficulty in breathing. This is criminal." — AFP

LAMPIRAN 30
THE SUN (NEWS WITHOUT BORDERS): MUKA SURAT 6
TARIKH: 22 OKTOBER 2018 (ISNIN)

US to **exit** nuclear treaty

> Trump claims Russia violated 1987 agreement

WASHINGTON: President Donald Trump confirmed on Saturday that the US plans to leave a Cold War-era nuclear weapons treaty with Russia, which criticised the move as Washington's latest effort to be the sole global superpower.

Trump claims Russia has long violated the three-decade-old Intermediate-Range Nuclear Forces Treaty, known as the INF, which was signed in 1987 by Ronald Reagan and Mikhail Gorbachev.

But a Russian foreign ministry source told the RIA Novosti news agency that Washington's "main motive is a dream of a unipolar world", one that won't be realised.

"We're the ones who have stayed in the agreement and we've honoured the agreement, but Russia has not unfortunately honoured the agreement, so we're going to terminate the agreement and we're going to pull out," Trump said in Elko, Nevada.

"Russia has violated the agreement. They've been violating it for many years.

"I don't know why president (Barack)

Obama didn't negotiate or pull out.

"And we're not going to let them violate a nuclear agreement and go out and do weapons (while) we're not allowed to."

Trump spoke as his national security adviser John Bolton (pic) was set to meet next week with Russia's foreign minister Sergei Lavrov, ahead of what is expected to be a second summit between Trump and his Russian counterpart Vladimir Putin.

The Trump administration has complained of Moscow's deployment of 9M729 missiles, which Washington says can travel more than 500km, and thus violate the INF treaty.

The treaty, which banned missiles that could travel 310 miles to 3,400 miles, put a term to a crisis that began in the 1980s with the deployment of Soviet SS-20 nuclear-tipped, intermediate-range ballistic missiles targeting Western capitals.

The Russian foreign ministry source accused Washington of implementing



policy "towards dismantling the nuclear deal".

Washington "has approached this step over the course of many years by deliberately and step by step destroying the basis for the agreement," the official said, quoted by Russia's three main news agencies.

"This decision is part of the US policy course to withdraw from those international legal agreements that place equal responsibilities on it and its partners and make vulnerable its concept of its own 'exceptionalism'," the official said.

Russian senator Alexei Pushkov wrote on Twitter that the move was "the second powerful blow against the whole system of strategic stability in the world" with the first being Washington's 2001 withdrawal from the Anti-Ballistic Missile treaty".

"And again the initiator of the dissolution of the agreement is the US," he wrote.

Bolton himself pressured Trump to leave the INF and has blocked any negotiations to extend the New Start treaty on strategic missiles set to expire in 2021, according to *The Guardian* newspaper. - AFP

LAMPIRAN 31
THE STAR (SMEBIZ): MUKA SURAT 10
TARIKH: 22 OKTOBER 2018 (ISNIN)

Partnerships help robots advance

Companies seek win-win cooperation to take advantage of each other's expertise

IN A sprawling warehouse in Tokyo, several robots made by Chinese company HIT Robot Group are busy picking and stacking goods on the shelves.

Equipped with sensors and image recognition software, they navigate the alleys between the shelves intuitively, choosing unobstructed straight lines that save time and enable efficiency, unlike human workers who might zigzag unconsciously.

"In Japan, the labour cost is very high with its shrinking pool of working population. The demand for workers in warehouses also changes with the alternating peak season and slack period in e-commerce. Our robots solve this problem with lower operating costs and higher efficiency," said Yu Zhenzhong, senior vice-president of HIT Robot Group.

With constant progress in research and development, Chinese robot makers such as HRG are increasingly going global, shipping their products to overseas markets. At the same time, they are helping foreign companies better tap the potential in China, the world's largest robot applications market, to deepen global exchanges.

"International cooperation is of crucial importance to build a well organised global robotics industrial chain. Frequent communication can generate new ideas for cutting-edge technologies," Yu said.

According to him, with robots increasingly intertwined with artificial intelligence and other technologies, Chinese companies and their foreign counterparts are realising the need to go beyond naked competition. Instead, they are trying to cultivate a win-win mentality, marked by shared interests and an intent to take full advantage of each other's expertise to grow rapidly.

Toward that end, HRG is partnering with multinational robot heavyweights such as ABB Group of Switzerland. Such companies are seeking to integrate robot systems to offer better localised solutions for diverse sectors.

HRG, based in Harbin, Northeast China's Heilongjiang province, is also teaming up with Israeli companies for research and development of drones. They hope to feed off each other's prowess.

The push for closer ties has become a trend in China. Government officials, entrepreneurs and experts are all calling for deeper international cooperation in the booming robotics sector.

Miao Wei, minister of Industry and Information Technology, the nation's industry regulator, said China will ramp up resources to strengthen international cooperation as it strives to build a globally



Bots rolled out: Guard robots were among those on display at the World Robot Conference last August. — Bloomberg

competitive robotics industry and accelerate the use of smart machines in manufacturing, healthcare and other sectors.

"China, as the world's largest robot market, sincerely welcomes foreign companies to partake in the strategic opportunity to jointly build a global industrial ecosystem," Miao said at the 2018 World Robot Conference in Beijing in August. Over 160 companies from 15 countries participated in the conference.

According to Miao, the ministry will roll out measures to encourage wider cooperation among Chinese companies, their international peers and foreign universities in technological research, product development and technical education. That would build on the achievements over the past five years.

China's robotics industry has been growing at about 30% a year.

In 2017, its industrial scale hit 120 billion yuan (US\$17.5bil), according to the Analysis Report on the Robot Industry in China 2018, released jointly by HIT and the China Institute of Science and Technology Evaluation, a research

institute.

China became the world's largest market for industrial robots in 2013, surpassing Japan, according to the International Federation of Robotics. Last year, sales of robots used in assembly lines exceeded 140,000 units in China, up 58% year-on-year.

Still, the robot density — a metric for measuring a country's level of automation — in China is lower than that in many economies, indicating ample room for growth.

In 2016, the density of robot workers in China was 68 units per 10,000 people and ranked 23rd worldwide, lower than the global average of 74 units per 10,000 people.

Karel Elout, senior partner at consultancy McKinsey & Company, said: "We forecast in 2020, the demand for robots in China will account for 40% of overall global demand. It will grow into a gigantic market for robot makers."

Qu Daokui, president of Siasun Robot & Automation Co, agreed.

"To better prepare for the upcoming opportunities in China, we (Chinese robot companies) must go global. The robotics indus-

try is so globalised and changing so fast that no one knows what a robot will look like in five to seven years. If we only keep our eyes on the home turf, we will die out."

Siasun Robot is looking to acquire cutting-edge robot technology leaders in Europe and the US. Acquisition deals could be in the region of US\$1bil upward.

Similarly, HRG has set up a venture capital fund to invest in promising startups in the US.

Chinese home appliances maker Midea Group has bought a majority stake in German robot manufacturer Kuka.

"Broadly speaking, as the robot industry chain involves many categories and fields, it is difficult, if not impossible, for a single country to be an 'all-round champion' that fully controls the whole industry. Instead, countries tend to specialise in one area while relying on imports in other areas. That is also why international cooperation is so important," Qu said.

Not just important but urgent, given the US' groundless accusation that China has been limiting the market share of foreign companies in key sectors including robot-

ics, industry experts said.

Zhu Sendi, a member of the National Manufacturing Strategy Advisory Committee, which advises the central authorities on manufacturing policies, said foreign robot makers have gained immensely from China's growing investment in smart manufacturing. According to data from the China Machinery Industry Federation, in the China market, the combined share of international robot makers jumped to 73.2% in 2017 from 67.3% in 2016.

Liu Fang, China market director at Festo, a German multinational industrial control and automation company, said as Chinese manufacturers scramble to deploy highly automated machines in assembly lines, the country has evolved into a strategically important market for Festo.

"We have served more than 50,000 clients in the country, ranging from sectors like automobile, food, consumer electronics to water processing. Their demand for better automation solutions is inspiring our innovation efforts," Liu said. — China Daily/Asia News Network

LAMPIRAN 32
THE STAR (WORLD): MUKA SURAT 33
TARIKH: 22 OKTOBER 2018 (ISNIN)

Cool glaciers can't take the heat

Frosty beauty of the south drawing tourists and climate worries

YULONGXUESHAN: The loud crack rang out from the fog above the Baishui No.1 Glacier as a stone shard careened down the ice, flying past Chen Yanjun as he operated a GPS device.

More projectiles were tumbling down the hulk of ice that scientists say is one of the world's fastest melting glaciers.

"We should go," said the 30-year-old geologist. "The first rule is safety."

Chen hiked away and onto a barren landscape once buried beneath the glacier. Now there is exposed rock littered with oxygen tanks discarded by tourists visiting the 15,000-foot (4,570m)-high blanket of ice in southern China.

Millions of people each year are drawn to Baishui's frosty beauty on the southeastern edge of the Third Pole – a region in Central Asia with the world's third largest store of ice after Antarctica and Greenland that's roughly the size of Texas and New Mexico combined.

Third Pole glaciers are vital to billions of people from Vietnam to Afghanistan. Asia's 10 largest rivers – including the Yangtze, Yellow, Mekong, and Ganges – are fed by seasonal melting.

"You're talking about one of the world's largest freshwater sources," said Ashley Johnson, energy programme manager at the National Bureau of Asian Research, an American think tank.

"Depending on how it melts, a lot of the freshwater will be leaving the region for the ocean, which will have severe impacts on water and food security."

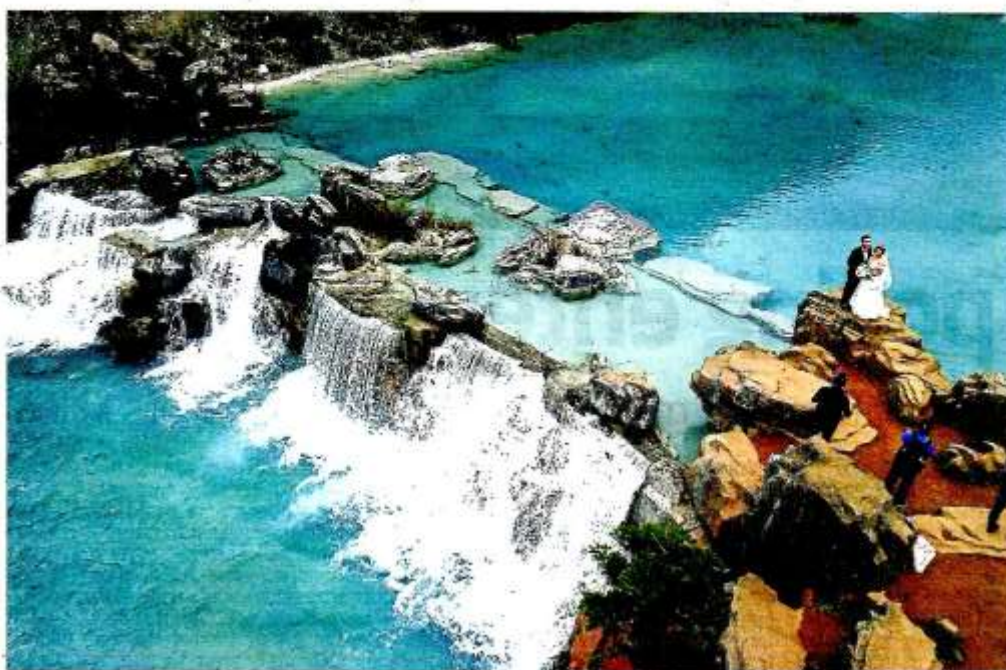
Earth is today 1°C (1.8°F) hotter than pre-industrial levels because of climate change – enough to melt 28% to 44% of glaciers worldwide, according to a new report by the UN Intergovernmental Panel on Climate Change. Temperatures are expected to keep rising.

Baishui is about as close to the Equator as Tampa, Florida. And the impacts of climate change already are dramatic.

The glacier has lost 60% of its mass and shrunk 250m (820 feet) since 1982, according to a 2018 report in the *Journal of Geophysical Research*.

Scientists found in 2015 that 82% of glaciers surveyed in China had retreated. They warned that the effects of glacier melting on water resources are gradually becoming "increasingly serious" for China.

"China has always had a freshwa-



Breathtaking beauty: An aerial photo showing a couple posing for photographs at the Valley of the Blue Moon glacial lake fed by the Baishui Glacier No.1 atop the Jade Dragon Snow Mountain in Yunnan. — AP



Research work: Glaciologist Wang Shijin repairing a broken remote meteorological station on the Baishui Glacier No.1. — AP

ter supply problem with 20% of the world's population but only 7% of its freshwater," said Jorina Nyman, an energy security lecturer at the University of Sheffield. "That's heightened by the impact of climate change."

For years, scientists have observed global warming change Jade Dragon Snow Mountain in the Chinese province of Yunnan.

One research team has tracked Baishui's retreat of about 27m per

year over the past decade. Flowers, such as snow lotus, have rooted in exposed earth, says Wang Shijin, a glaciologist and director of the Yulong Snow Mountain Glacial and Environmental Observation Research Station, part of a network run by the Chinese Academy of Sciences.

"It is not easy to encounter good weather here," Wang said.

This weather will ensure Yunnan has plenty of freshwater while other glacier loss poses serious risk

of drought across the Third Pole, he said.

The next day, the team wore crampons while repairing more sensors scattered across the glacier's crags.

"Where we're at right now was back in 2008 all covered with ice," Wang said. "From here to there at the side, the glacier shrank about 20m to 30m. The shrinking is very remarkable."

Changes to the Baishui provide the opportunity to educate visitors about global warming, Wang said.

Last year, 2.6 million tourists visited the mountain, according to Yulong Snow Mountain park officials.

On blustery day recently, hundreds of tourists climbed wooden stairs through grey fog to snap selfies in front of the glacier.

Hou Yugang said he wasn't too bothered over climate change and Baishui's melting.

"I don't think about it now because it still has a long way to go," he said.

To protect the glacier, authorities have limited the number of visitors to 10,000 a day and have banned hiking on the ice.

They plan to manufacture snow and to dam streams to increase humidity that slows melting. — AP

LAMPIRAN 33 BERITA HARIAN (DUNIA): MUKA SURAT 36 TARIKH: 21 OKTOBER 2018 (AHAD)

→ DUNIA

Info

Negara menanggung kos paling banyak akibat bencana

1. **A Syarikat** AS\$945 bilion (RM3.50 trilion)
2. **China** AS\$492 bilion (RM2.04 trilion)
3. **Jepun** AS\$376 bilion (RM1.56 trilion)

Negara paling terjejas akibat perubahan iklim

- 1 Honduras
- 2 Myanmar
- 3 Nicaragua
- 4 Bangladesh

- 5 Haiti
- 6 Vietnam
- 7 Korea Utara
- 8 Pakistan
- 9 Thailand
- 10 Republik Dominica



Perubahan iklim bawa bencana

● PBB anggap dunia ada tempoh 12 tahun lagi

Kanak-kanak Kabul berjalan di kawasan tasik hampir kering yang terletak berhampiran kawasan perindustrian.



Susunan Zulhilmi Hat
zulhilmi_hat@bharian.com.my

Bulan lalu, dunia dikejutkan dengan bencana gempa bumi dan tsunami melanda Palu di Kepulauan Sulawesi, Indonesia sehingga menyebabkan ribuan orang terkorban dan puluhan ribu lagi dilaporkan hilang.

Kebetulan, minggu lalu, Tabung Kewangan Antarabangsa (IMF) hadir di negara republik itu untuk mesyuarat tahunan di Bali menyentuh isu ekonomi global.

Pada detik yang sama Pertubuhan Bangsa-Bangsa Bersatu (PBB) juga menyuarakan rasa bimbang mengenai perubahan iklim dalam laporannya yang menyebut dunia hanya memiliki kira-kira 12 tahun lagi untuk mengambil langkah diperlukan untuk mengelak malapetaka kepanasan global.

Mesej adalah jelas untuk mereka yang mahu mendengarnya; berseedia untuk menempuh saat apabila

la kegagalan ekonomi bergabung dengan kemerosotan ekologi untuk mencipta 'ribut yang sempurna'.

Ada juga saintis dan pakar lain menyebut dunia makin panas setiap hari dan ada pula mengaitkan pertumbuhan penduduk padat dan pembangunan pesat sebagai antara puncanya.

Perubahan iklim juga makin terparap jelas dengan suhu global dijangka meningkat 4 darjah Celsius menjelang 2100.

Siklon tropika dijangka akan lebih kerap berlaku, hujan akan berterusan dan paras laut mungkin meningkat hampir setinggi satu meter ketika suhu paras laut tropika meningkat.

Kesihatan manusia

Perubahan iklim juga dijangka membawa lebih banyak bencana semula jadi seperti kemarau dan banjir.

Perubahan seumpama ini secara tidak langsung akan memberi kesan kepada kesihatan manusia,

khususnya di negara membangun. Ia menjurus kepada lebih banyak kematian akibat bahang cuaca, penyakit cirit-birit dan kekurangan zat makanan.

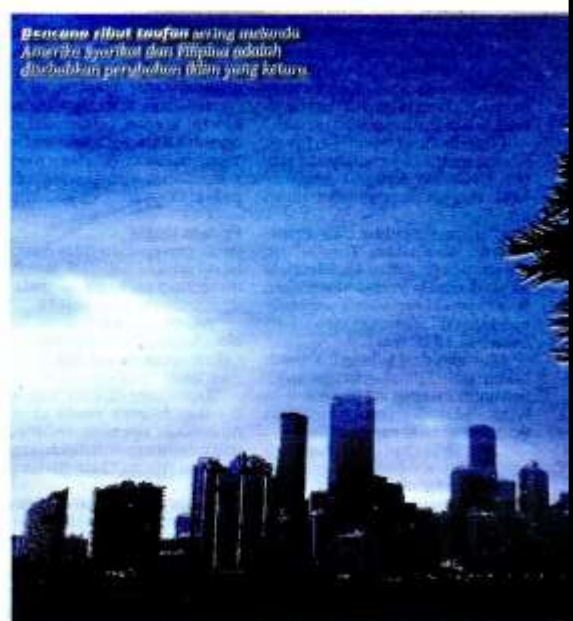
Selain gempa bumi, tsunami dan taufan, beberapa faktor yang menjurus kepada perubahan iklim sehingga menyebabkan bencana ialah pelepasan karbon dioksida yang tinggi dan pertumbuhan gas lain seperti klorofluorokarbon (CFC) oleh manusia, gas rumah hijau boleh mengugut fungsi sebenar atmosfera bumi.

Akibatnya, bumi bukan sahaja semakin panas, malah lapisan ozon yang selama ini melindungi kehidupan di bumi turut terjejas apabila sinaran ultra-lembayung (UV) dari angkasa berjaya menembusinya.

Maka, berlakulah pelbagai penyakit yang dikaitkan dengan pemanasan global atau perubahan iklim selain sumber makanan di darat dan laut semakin susut sehinggalah berlaku pula malapetaka



Pemanasan melampau menyebabkan kawasan tasik atau sungai menjadi kering kontang.



Bencana ribut taufan sering melanda Amerika Syarikat dan Filipina adalah disebabkan perubahan iklim yang ketara.

LAMPIRAN 33 (SAMBUNGAN)
BERITA HARIAN (DUNIA): MUKA SURAT 36
TARIKH: 21 OKTOBER 2018 (AHAD)



Kecairan sungai ais di kutub akibat pemanasan global bakal mengusung banjir besar.



Ricardo Mena

taka kebuluran.

Namun, bencana paling ditakuti manusia akibat perubahan iklim ialah masalah kebuluran atau kekurangan zat makanan selain kemarau, taufan, penyebaran penyakit, gunung berapi, cuaca terlampau panas dan tanah runtuh.

Pemanasan global

Menurut laporan dalam jurnal perubahan Britain, The Lancet, kekurangan nutrisi atau makanan dikenal pasti sebagai kesan kesihatan paling besar berbanding bencana yang disebabkan perubahan iklim pada abad ke 21 ini.

Tambahnya lagi, kesukaran negara-negara di dunia bekerjasama mencari kaedah memperlambatkan pemanasan global sejak 15 tahun lalu mungkin mencetus bencana besar kepada umat manusia.

Justeru, jika pemimpin dunia terlambat membuat sesuatu, bencana berlaku bersilih ganti di seluruh dunia dikuatirai memusnahkan tamadun manusia suatu hari nanti.

Awal minggu ini, Panel Perubahan Iklim Antara Kerajaan Pertubuhan Bangsa-Bangsa Bersatu (IPCC) memberi amaran peningkatan kepanasan melampau boleh menjadi kerap jika negara di dunia gagal memperbaiki rancangan iklim nasional masing-masing sejajar matlamat Perjanjian Iklim Paris 2015, mengekalkan kenaikan suhu dunia pada paras bawah dua darjah celsius.

"Gejala-gejala perubahan iklim ke atas kehidupan manusia adalah sangat jelas dan berkemungkinan besar tidak dapat dipulihkan," menurut laporan terbabit.

Tambahan pula, kecairan glasier atau sungai ais di kawasan kutub dan peningkatan paras laut antara penyumbang kepada bencana-bencana yang akan datang.

Menurut Pejabat Pertubuhan Bangsa-Bangsa Bersatu Bagi Pengurangan Risiko Bencana (UNISDR), bencana berkaitan iklim menyumbang kira-kira 90 peratus daripada 7,255 bencana utama antara 1998 dan 2017, kebanyakannya banjir dan ribut.

Secara tidak langsung, dari 1998 sehingga 2017, kerugian akibat semua bencana berjumlah AS\$2.9 trilion (RM12.04 trilion) dengan 77 peratus disebabkan cuaca panas melampau.

"Kita dapat melihat bahawa perubahan iklim memainkan peranan penting hingga menyebabkan kerugian besar di seluruh dunia, dan itu mungkin berlaku di masa depan," kata Ricardo Mena iaitu pegawai di UNISDR yang berpusat di Geneva.

