

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

Bil	Berita	Media	Capaian Berita Penuh
29 OKTOBER 2018 (ISNIN)			
1.	<u>No surprise in Sandakan CCGT cancellation</u> “The change in Government brought uncertainty surrounding the project as the new Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC) Minister instead prefers to strengthen the West-to-East grid to enable a more efficient supply of power from West (oversupplied) to East Sabah (undersupplied).”	The Borneo Post	Klik pada tajuk berita
2.	<u>Angin kencang, laut bergelora sehingga Jumaat</u> Menurut kenyataan Jabatan Meteorologi Malaysia, keadaan itu berbahaya kepada semua aktiviti perkapalan dan pantai termasuk menangkap ikan dan perkhidmatan feri.	Kosmo	Rujuk lampiran 1
3.	<u>Negeri Sembilan pula perangi kilang plastik haram</u> Langkah penguatkuasaan tegas JAS itu seiring dengan pengumuman Menteri Perumahan dan Kerajaan Tempatan, Zuraida Kamaruddin pada Jumaat lalu apabila kerajaan secara muktamad menghentikan sepenuhnya pengeluaran AP bagi sampah palsti.	Kosmo	Rujuk lampiran 2
28 OKTOBER 2018 (AHAD)			
4.	<u>'Stop Lynas' group chairman urges members to let cool heads prevail</u> Energy, Science, Technology, Environment and Climate Change Minister Yeo Bee Yin recently announced the members of the executive review committee who would look into the safety, health	The Star	Klik pada tajuk berita

	and environment aspects as well as the scheduled waste storage of LAMP's operations.		
5.	<u>Jabatan Meteorologi keluar nasihat taufan</u> Selaras dengan itu Jabatan Meteorologi Malaysia (MetMalaysia) hari ini mengeluarkan notis Nasihat Taufan kerana pergerakan taufan itu dijangka menyebabkan angin kencang di kawasan perairan Sabah.	Berita Harian	Klik pada tajuk berita
6.	<u>Amaran angin kencang, laut bergelora sehingga Jumaat</u> Menurut kenyataan Jabatan Meteorologi Malaysia, keadaan itu berbahaya kepada semua aktiviti perkapalan dan pantai termasuk menangkap ikan dan perkhidmatan feri.	Sinar Harian	Klik pada tajuk berita
7.	<u>Amaran angin kencang di enam buah negeri</u> Jabatan Meteorologi Malaysia dalam satu kenyataan berkata, keadaan itu berbahaya kepada semua aktiviti perkapalan dan pantai termasuk menangkap ikan dan perkhidmatan feri.	Utusan Malaysia	Klik pada tajuk berita
8.	<u>Amaran angin kencang, laut bergelora di enam negeri sehingga Jumaat</u> Menurut kenyataan Jabatan Meteorologi Malaysia, keadaan angin kencang dan laut bergelora itu berbahaya kepada semua aktiviti perkapalan dan pantai termasuk menangkap ikan dan perkhidmatan feri.	Astro Awani	Klik pada tajuk berita
9.	<u>Amaran angin kencang, laut bergelora di 6 negeri sehingga Jumaat</u> Menurut kenyataan Jabatan Meteorologi Malaysia, keadaan itu berbahaya kepada semua aktiviti perkapalan dan pantai termasuk menangkap ikan dan perkhidmatan feri.	Berita Harian	Klik pada tajuk berita

27 OKTOBER 2018 (SABTU)			
10.	<u>Adopting a growth mindset</u> "I'm a Fellow of the Academy Sciences Malaysia (ASM). I've learnt from the clever people is ASM, with all their doctorates, that we must use data and statistics for analysis to produce evidence based recommendations and solutions.	The Star	Rujuk lampiran 3
11.	<u>Power sector draws attention after IPP project cancellations</u> On Wednesday, Energy, Science, Technology, Environment and Climate Change Minister Yeo Bee Yin said the government will potentially save RM1.26bil in electricity tariffs following the cancellation of four IPP projects.	The Star	Rujuk lampiran 4 atau klik pada tajuk berita
12.	<u>Import of plastic waste banned</u> The meeting was chaired by Zuraida and attended by the ministers of the Ministry of Energy, Science, Technology, Environment and Climate Change; Ministry of Water, Land and Natural Resources; and the Ministry of International Trade and Industry.	The Star	Rujuk lampiran 5 atau klik pada tajuk berita
13.	<u>Tiada lagi import sampah plastik</u> Katanya, mesyuarat itu melibatkan Kementerian Tenaga, Teknologi, Sains, Perubahan Iklim dan Alam Sekitar; Kementerian Air, Tanah dan Sumber Asli serta Kementerian Perdagangan Antarabangsa dan Industri.	Utusan Malaysia	Rujuk lampiran 6 atau klik pada tajuk berita
14.	<u>Pengeluaran AP sampah plastik dihentikan serta-merta</u> Beliau berkata, kementerian terbabit adalah Kementerian Tenaga, Teknologi, Sains, Perubahan Iklim dan Alam Sekitar; Kementerian Air, Tanah dan Sumber Asli dan Kementerian Perdagangan Antarabangsa dan Industri.	Berita Harian	Rujuk lampiran 7 atau klik pada tajuk berita

15.	<u>No more AP issuance for plastic waste, effective today, says Zuraida</u> Earlier, she chaired a meeting between her ministry and the Energy, Science, Technology, Environment and Climate Change Ministry; Water, Land and Natural Resources Ministry; and the International Trade and Industry Ministry.	The Sun Daily	Klik pada tajuk berita
16.	<u>Amaran cuaca peringkat waspada di Kelantan, Terengganu</u> Jabatan Meteorologi Malaysia (MetMalaysia) mengeluarkan notis amaran cuaca waspada peringkat kuning di Kelantan dan Terengganu berikutan luruan angin timur laut yang dijangka bertiup kencang pada Isnin ini.	Sinar Harian	Klik pada tajuk berita

TEMPATAN

Bil	Berita	Media	Capaian Berita Penuh
29 OKTOBER 2018 (ISNIN)			
17.	<u>Inspired by shape of honeycombs</u> Interestingly, both students are from the arts stream. However, that does not stop the students from learning STEM.	The Star	Rujuk lampiran 8 atau klik pada tajuk berita
18.	<u>TNB Research in joint collaboration on palm oil demonstration plant</u> Meanwhile, KEPRI President Dr. Sung Hwan Bae said as South Korea's leading electrical technology developer, the institute was delighted to support the expansion of the potential of commercially high-value biomass pellet as fuel supply for power generation.	The Star	Rujuk lampiran 9 atau klik pada tajuk berita
19.	<u>TNB jalin pakatan projek kilang biomas</u> "TNB Research, anak syarikat milik penuh dan cabang pendidikan dan pembangunan (R&D)	Berita Harian	Rujuk lampiran 10

	TNB pada masa ini menjalankan aktiviti penyelidikan dan menyediakan perkhidmatan kejuruteraan pembangunan membabitkan sisa industri minyak sawit yang diubah kepada produk nilai tambah tinggi,"kata TNB dalam satu kenyataan, semalam.		
20.	<u>Fahami faktor utama fenomena cuaca ekstrem</u> Jabatan Meteorologi Malaysia membuat pengumuman berkaitan musim monsun timur laut dengan jangkaan ia bermula pada penghujung Oktober tahun ini, sedikit awal pada kebiasaannya berbanding pertengahan November.	Berita Harian	Rujuk lampiran 11
21.	<u>Maszlee: Green campaign to target children</u> The Education Ministry will start an environmental campaign next year involving kindergartens and schools in the district.	The Star	Rujuk lampiran 12 atau klik pada tajuk berita
22.	<u>Minister: Sabah has huge potential to become aerospace hub</u> More Sabahans are needed to venture into the aerospace industry as it could create more opportunities in the industry and attract new investments into the state, he added.	Malay Mail	Rujuk lampiran 13 atau klik pada tajuk berita
23.	<u>Polis khas jaga alam sekitar</u> Selain pembangunan, penerokaan tanah tidak terkawal juga menjadi antara punca beberapa kejadian tanah runtuh yang turut mengakibatkan kehilangan nyawa.	Harian Metro	Rujuk lampiran 14
24.	<u>'Not time yet to form dept for environmental crimes'</u> A special police department to combat crimes relating to the environment is not suitable at the moment, says Tan Sri Mohamad Fuzi Harun.	The Star	Rujuk lampiran 15
25.	<u>Gempa di Semenanjung tidak dahsyat</u> Menjelaskan secara lanjut Mustaffa berkata, titik-titik gempa berlaku bermula pada tahun 2007 itu	Sinar Harian	Rujuk lampiran 16

	adalah selepas gempa bumi dan tsunami besar di Aceh pada 2004.		
26.	<u>Pembangunan lestari dipromosi</u> “Pembinaan hijau bermula pada peringkat awal termasuklah pemilihan tapak dan susur atur bangunan.	Utusan Malaysia	Rujuk lampiran 17
27.	<u>R&D UTM tumpu lima bidang</u> Sementara itu, HWRA bertujuan mewujudkan platform bioekonomi berasaskan pengetahuan bagi memanfaatkan biosumber yang sedia ada yang berpandukan dengan kejuruteraan dan teknik terkini bioinformatik.	Utusan Malaysia	Rujuk lampiran 18

28 OKTOBER 2018 (AHAD)

28.	<u>Housing industry officials look to China for green building technology</u> This rate of growth is projected to gain an additional four fold increase in the years to come across some geographical regions including Brazil, India, Saudi Arabia, and South Africa while regions across the U.S, Germany and the U.K would sustain their rate of green building.	The Borneo Post	Klik pada tajuk berita
29.	<u>Nuclear waste misconceptions</u> IN defending the use of nuclear power sources for electricity generation, I will focus on the science behind nuclear waste management.	New Straits Times	Rujuk lampiran 19 atau klik pada tajuk berita

27 OKTOBER 2018 (SABTU)

30.	<u>Running hot</u> With time running out to avoid dangerous global warming, the nation's leading scientific body on Wednesday urged the federal government to begin a research programme focused on developing technologies that can remove vast quantities of carbon dioxide from the atmosphere to help slow climate change.	New Straits Times	Rujuk lampiran 20 atau klik pada tajuk berita
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31.	<u>UniMAP komited laksana amalan lestari</u> Beliau berkata, diharapkan kejayaan konsep kampus lestari itu menjadi titik tolak memupuk kesedaran umum dalam kalangan masyarakat mengenai kepentingan menjaga alam sekitar.	Berita Harian	Rujuk lampiran 21
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ANTARABANGSA

Bil	Berita	Media	Capaian Berita Penuh
29 OKTOBER 2018 (ISNIN)			
32.	<u>Israel startup rolls out solar panels for smart electronics</u> "It uses a kind of dye made from organic compounds that we make in the lab to generate electricity," he adds.	The Star	Rujuk lampiran 22
33.	<u>Robots to make robots at ABB's new factory in China</u> The factory, located near ABB's China robotics campus, is due to be operating by the end of 2020 and will produce robots for China as well as for export elsewhere in Asia. China is ABB's No. 2 market after the United States.	The Star	Rujuk lampiran 23 atau klik pada tajuk berita
28 OKTOBER 2018 (AHAD)			
34.	<u>Typhoon Yutu with 245kph winds heading for Philippines</u> Typhoon Yutu was packing maximum winds of 200kph and gusts of up to 245kph as it neared the Philippines north-eastern coast, the weather bureau said.	The Star	Rujuk lampiran 24
35	<u>Clean energy is not always green</u> There are greater problems. More than the direct carnage caused by the windmills, the construction	The Telegraph	Klik pada tajuk berita

	of wind farms leads to the loss of vital habitat — the single biggest cause for species extinction.		
36.	<u>US scientists call for carbon dioxide scrubbing programme in fight against climate change</u> That's nearly as much carbon as all the world's forests and soils currently absorb each year.	The Independent	Klik pada tajuk berita
27 OKTOBER 2018 (SABTU)			
37.	<u>Strong 6.8 magnitude quake strikes off Greece</u> A powerful 6.8 magnitude earthquake struck off Greece yesterday and was felt strongly in the tourist hotspot island of Zante.	New Straits Times	Rujuk lampiran 25
38.	<u>Air pollution is the 'new tobacco', warns WHO head</u> Air pollution is the "new tobacco", the head of the World Health Organization has warned, saying the simple act of breathing is killing 7 million people a year and harming billions more.	The Guardian	Klik pada tajuk berita

LAMPIRAN 1
KOSMO (NEGARA): MUKA SURAT 6
TARIKH: 29 OKTOBER 2018 (ISNIN)

Angin kencang, laut bergelora sehingga Jumaat

KUALA LUMPUR – Angin kencang Timur Laut dengan kelajuan 40 hingga 50 kilometer sejam dengan ombak mencapai ketinggian 3.5 meter dijangka berlaku di kawasan perairan Kelantan, Terengganu, Pahang, Johor Timur, Sarawak dan Barat Sabah bermula hari ini hingga Jumaat.

Menurut kenyataan Jabatan Meteorologi, ke-

adaan angin kencang dan laut bergelora itu berbahaya kepada semua aktiviti perkapalan dan pantai termasuk menangkap ikan dan perkhidmatan feri.

Selain itu, kawasan pantai di Kelantan, Terengganu, Pahang, Johor Timur dan Sarawak juga terdedah kepada kejadian kenaikan paras air laut yang dijangka berlaku dalam tempoh sama. – Bernama

LAMPIRAN 2
KOSMO (NEGARA): MUKA SURAT 1
TARIKH: 29 OKTOBER 2018 (ISNIN)

Negeri Sembilan pula perangi kilang plastik haram

- JAS Negeri Sembilan sita tujuh buah kilang plastik
- Lima daripada kilang yang disita miliki AP plastik luar negara

SELEPAS siri pendedahan eksklusif *Kosmo!* mengenai kegiatan kilang-kilang sampah plastik haram di Banting, Selangor, Jabatan Alam Sekitar (JAS) Negeri Sembilan kini turut mengambil tindakan tegas ke atas kilang-kilang plastik di negeri itu.

Dalam satu operasi minggu lalu, JAS Negeri Sembilan menyita sebanyak tujuh buah kilang kitar semula plastik kerana disyaki melanggar Akta Kualiti Alam Sekeliling 1974.

Lima daripadanya memiliki permit import (AP) plastik dari luar negara.

Pengarah JAS Negeri Sembilan, Norhazni Mat Sari (*gambar kecil*) berkata, terdapat 18 kilang kitar semula plastik beroperasi di



ANGGOTA penguat kuasa JAS Negeri Sembilan membuat serbuan ke sebuah kilang plastik di Senawang minggu lalu.



Negeri Sembilan dan JAS menyita tujuh daripadanya yang berada di Senawang dan Nilai kerana didapati berlaku pelanggaran

pematuhan alam sekitar.

"Antara kesalahan yang dilakukan termasuk tiada alat kawalan pencemaran udara dan air untuk proses pembersihan

plastik," katanya di Seremban semalam.

Langkah penguatkuasaan tegas JAS itu seiring dengan pengumuman Menteri Perumahan dan Kerajaan Tempatan, Zuraida Kamaruddin pada Jumaat lalu apabila kerajaan secara muktamad menghentikan sepenuhnya pengeluaran AP bagi sampah plastik.



» BERITA DI MUKA 2

LAMPIRAN 2 (SAMBUNGAN) KOSMO (NEGARA): MUKA SURAT 2 TARIKH: 29 OKTOBER 2018 (ISNIN)

JAS tutup tujuh daripada 18 premis proses sisa plastik di Negeri Sembilan

NS sita kilang kitar semula

Oleh ZULKIFLI MANZOR

SEREMBAN - Jabatan Alam Sekitar (JAS) Negeri Sembilan menyita tujuh daripada 18 buah kilang kitar semula plastik di negeri ini kerana melanggar Akta Kualiti Alam Sekeliling 1974 dalam beberapa operasi yang dijalankan di Senawang dan Nilai pada minggu lalu.

Pengarah JAS Negeri Sembilan, Norhazni Mat Sari semalam berkata, lima daripada kilang kitar semula plastik yang disita telah menyita tujuh daripada kilang tersebut yang beroperasi di Senawang dan Nilai.

"Secara keseluruhannya terdapat 18 kilang kitar semula plastik yang beroperasi di Negeri Sembilan dan kita telah menyita tujuh daripada kilang tersebut yang beroperasi di Senawang dan Nilai.

"Pernyataan ke atas kilang tersebut dibuat selepas kilang itu didapati melanggar pematuan alam sekitar ketika mengoperasikan kilang," kata beliau pada Sambutan Hari Alam Sekitar Negara peringkat Negeri Sembilan di sini semalam.

Menurut beliau, kilang-kilang yang disita itu diberi tempoh untuk mematuhi syarat operasi kilang memproses sisa plastik sebelum ia dibenar beroperasi semula.

"Antara kesalahan yang dikesan daripada tujuh kilang yang disita tersebut termasuk kilang itu tidak mempunyai alat kawalan pencemaran udara dan air untuk proses pembersihan plastik, kilang tidak ada lesen daripada pihak berkuasa tempatan dan ada kilang yang tiada AP import sisa plastik," katanya.

Norhazni memberitahu, tin-



PENGERUSI Jawatankuasa Kesejahteraan Bandar, Perumahan, Kerajaan Tempatan dan Kampung Baru, Tee Kok Soong (tiga dari kanan) dan Pengerusi Jawatankuasa Hal Ehwal Wanita Keluarga dan Kebajikan negeri, Nicole Tan Lee Koon (lima dari kiri) meninjau polik pada sambutan Hari Alam Sekitar 2018 peringkat Negeri Sembilan di EPIC, Seremban semalam. Turut kelihatan Pengarah JAS, Norhazni (empat dari kiri).



OPERASI JAS di sebuah kilang kitar semula plastik di Senawang pada minggu lalu.



ZURAIDAH

dakan JAS menyita kilang-kilang tersebut dilancarkan dengan pihak penguat kuasa itu merampas peralatan dan barang-barang yang terlibat dalam operasi kilang tersebut.

Bagaimanapun, beliau berkata, dalam serbuan tersebut tidak ada tangkapan dibuat.

Difahamkan, antara kilang-kitar semula yang turut diperiksa JAS melibatkan kilang yang per-

nah menyebabkan air Sungai Simin bertukar menjadi warna biru pada Januari lalu.

Mengikut laporan Kosmo yang diterbitkan pada 24 Januari lalu, sejenis bahan pewarna pada plastik yang dicuci di sebuah kilang kitar semula dan barang loyang di perindustrian Senawang telah menyebabkan air Sungai Simin tercemar sehingga bertukar warna.

Ekoran pencemaran air sungai tersebut, JAS ketika itu mengarahkan pihak kilang yang



KERATAN Kosmo 24 Januari 2018.



KERATAN Kosmo semalam.

bertanggungjawab atas pencemaran tersebut melakukan kerja-kerja penyedutan dan pembersihan sungai itu.

Dalam perkembangan sama, Norhazni memberitahu, JAS selepas ini akan terus memantau 11 buah lagi kilang kitar semula plastik yang dikenal pasti beroperasi di negeri ini.

Sementara itu, pada Jumaat lalu, Kementerian Perumahan dan Kerajaan Tempatan (KPKT) mengambil keputusan muktamad menghentikan sepenuhnya pengeluaran AP bagi sampah plastik berkuat kuasa serta-merta.

Menterinya, Zuraidda Kamaruddin memberitahu, selain faktor kesihatan dan alam sekitar, langkah itu antara lain sebagai pemangkin ke arah memperkasa industri plastik tempatan dalam tempoh tiga tahun akan datang.

Isu kilang kitar semula sisa plastik tercetus ekoran laporan Kosmo mengenai nasib kira-kira 300,000 penduduk Kuala Langat, Selangor yang berisiko diancam pelbagai penyakit kronik ekoran pencemaran udara akibat kilang memproses sisa plastik di daerah itu.

Terdahulu Norhazni berkata, Sambutan Hari Alam Sekitar yang berlangsung di EPIC Kualiti

INFO Kronologi Kes Kilang Proses Plastik

23 Julai 2018 - Hampir 300,000 penduduk Kuala Langat, Selangor tertanamnya di Telok Panglima Garang berdehad kepada risiko pelbagai jenis penyakit termasuk kanser apabila daerah tersebut dijadikan tempat tonggolan plastik kitar semula dari serata dunia.

24 Julai 2018 - Kerajaan mengarahkan pihak berkuasa tempatan (PBT) segera menghentikan operasi kilang memproses sisa plastik di Kuala Langat ekoran rungutan penduduk yang mendakwa mereka diancam masalah kesihatan akibat pencemaran alam sekitar kerana kilang proses sisa plastik.

25 Julai 2018 - Kementerian Perumahan dan Kerajaan Tempatan membatalkan lesen import (AP) sisa plastik yang dikeluarkan kepada 114 syarikat dan kilang di seluruh negara bagi tempoh tiga bulan berkuat kuasa 23 Julai lalu.

2 Ogos 2018 - Majlis Daerah Kuala Langat menutup buah kilang kitar semula plastik haram yang terletak di Banting, Jenjarom dan Telok Panglima Garang serta menyita berjuta-juta tan timbunan sisa pepejal yang diimport dari seluruh dunia.

25 September 2018 - Kerajaan akan mengenakan levi sebanyak RM15 bagi setiap tan sisa plastik yang diimport menerusi AP barang tersebut bermula pada 24 Oktober depan.

26 September 2018 - Kementerian Perumahan dan Kerajaan Tempatan mengambil keputusan muktamad menghentikan sepenuhnya pengeluaran AP bagi sampah plastik berkuat kuasa 26 Oktober 2018 selepas mengambil kira faktor kesihatan dan alam sekitar.

ti Alam Sdn. Bhd. turut disumbat serentak di seluruh negara. Menurut beliau, pelbagai aktiviti dijalankan antaranya aktiviti mewarna, melukis, persembahan dan gimik pelancaran program single plastic dan collection of image.

JAS di seluruh negara perlu ikut jejak JAS Negeri Sembilan

KUALA LUMPUR - Jabatan Alam Sekitar (JAS) di setiap negeri diminta lebih berani dan tegas dalam menjalankan operasi penguatkuasaan terhadap mana-mana kilang kitar semula plastik yang dikenal pasti melanggar undang-undang.

Presiden Pertubuhan Pelindung Khazanah Alam Malaysia (Pekam), Puan Sri Shariffa Sabrina Syed Akil berkata, silap berani perlu ditunjukkan agensi tersebut ketika menegakkan undang-undang tanpa sebarang kompromi.

"Sekiranya pengusaha kilang didapati bersalah, tindakan perlu dilaksanakan. JAS



SHARIFFA SABRINA



MEOR

tidak boleh melindungi individu tertentu seperti golongan diraja, ahli politik ataupun orang kenamaan," katanya kepada Kosmo di sini semalam.

Beliau berkata demikian ketika diminta mengulas mengenai tindakan JAS Negeri Sembilan yang menyita tujuh buah kilang kitar semula plastik berikutan disyaki melanggar Akta Kualiti Alam Sekeliling 1974 dalam beberapa operasi yang dijalankan minggu lalu.

Shariffa Sabrina turut memohon JAS di semua negeri mengikut jejak langkah JAS Negeri Sembilan selepas dilihat berani menyita kilang kitar semula plastik

yang didapati melanggar undang-undang.

Dalam pada itu, Pegawai Lapangan Sahabat Alam Malaysia (SAM), Meor Razak Meor Abdul Rahman menjelaskan, tindakan penguatkuasaan terhadap kilang kitar semula plastik perlu dilaksanakan secara berterusan bagi membolehkan masalah alam sekitar diatasi sebaik mungkin.

"Pihak terlibat seperti Kementerian Perumahan dan Kerajaan Tempatan serta Kementerian Tenaga, Teknologi, Sains, Perubahan Iklim dan Alam Sekitar perlu berganding tenaga bagi menyelesaikan isu seperti ini daripada berterusan.

"Kita mahu pihak terlibat berterusan melakukan penguatkuasaan dan tidak hanya mengesampingkan kilang yang melanggar peraturan apabila isu berkaitan hangat diperkatakan," jelasnya.

LAMPIRAN 3

THE STAR (LEADER ECONOMIC): MUKA SURAT 6

TARIKH: 27 OKTOBER 2018 (SABTU)

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In the Asian Economic Community (AEC), the services sector has been recognised as the major engine for growth, contributing 40-60% of the gross domestic product (GDP) of Asian countries.

This contribution is predicted to increase to at least 70% in the future, similar to the percentage seen in developed nations.

Professional services are an integral part of the services sector.

THE GLOBAL OUTLOOK

According to the Professional Services Global Market Report 2018, the largest region in the professional services market in 2017 is North America, taking up the lion's share with 37%. This was largely due to high demand for professional services across industries, such as legal, advertising, accounting and photographic services.

The second largest region was Western Europe (24%), while the smallest region was Africa (4%).

There is a positive trend in professional services where firms are becoming more adept at using social media to source for and interact with clients online. Many firms have found it beneficial to market their services and keep an eye on their competitors in cyberspace.

A good social media presence helps firms to increase their reach, enhancing awareness among potential clients of its existence. It can help firms improve customer satisfaction and relationships too.

PROFESSIONAL SERVICES IN MALAYSIA

According to the 25th Productivity Report 2017/2018, the professional services subsector comprised 3.9% of the Malaysian services sector's added value (worth RM24.7 billion), last year.

From 2016 to 2017, the productivity of the professional services subsector increased by 9.7% (to RM79.192).

On the employment front, this subsector contributed 3.5% to the total employment in the services sector last year.

But like most industries in the age of disruption, professional services are facing challenges brought on by rapid technological developments – the accounting industry in particular.

ADOPTING A GROWTH MINDSET

PROFESSIONAL SERVICES IN THE AGE OF DIGITALISATION

CHALLENGES AHEAD

Exports are a key driver in our economic growth, but the market for professional services in Malaysia is still primarily domestic. This is of no surprise as this subsector is still populated largely by SMEs.

In contrast, the global professional services market is dominated by large companies, which collaborate to take on big projects.

The challenges faced by the subsector include:

- Globalisation
- Liberalisation
- Economic uncertainties
- Chronic shortage of skilled professionals
- Low adoption rate of ICT solutions
- Small-scale industry players
- Inconsistent and contradictory regulations

In particular, inconsistent and contradictory regulations can potentially cause regulatory risks and lead to compliance cost.

"We appear to have a shortage of skilled professionals, but actually Malaysia has a lot of talent, but we don't focus on optimising our resources collectively. As a result, we have growth, but it is slow," says Ts Choo Kok Beng, the Professional Services Productivity Mexican Champion for the Malaysia Productivity Corporation (MPC).

For 25 years, MPC has worked towards improving productivity in Malaysia. Some of its efforts for various segments of industries in Malaysia include workshops, training programmes, and consultancy services on how to enhance productivity.

It has also awarded grants and recognitions to exemplary organisations that conduct research projects related to productivity.

At the turn of the millennium, MPC began developing benchmarking and best practices, studying how to enhance competitiveness and innovation at the national level.

Through the collaboration with the Economic Planning Unit (EPU), the Malaysia Productivity Blueprint (MPB) was launched in 2017, to further accelerate productivity growth. Nine priority subsectors were established – one of which is Professional Services.

"In other countries such as Japan and Korea, they are more focused on their objectives. In a relatively short time, they have advanced so much because of their unwavering focus. And now Indonesia is beginning to focus on developing talent too," explains Ts Choo, who is the immediate past president of the Malaysian Service Providers Confederation (MSPC).

"How did these countries accelerate growth? For certain issues, they have a dedicated coordinating ministry that handles the activities of ministries which go towards the same objective. This coordinating ministry will be able to get everybody to focus."

LOOKING AT THE DATA

It is important to do research, background checks and perhaps consult some experts in the relevant field before arriving at a decision or conclusion.

In this way, armed with the proper knowledge and understanding, better and impartial outcomes can be achieved, rather than listening to advice of friends, acquaintances or gossip-mongers.

"I'm a Fellow of the Academy of Sciences Malaysia (ASM). I've learnt from the clever people in ASM, with all their doctorates, that we must use data and statistics for analysis to produce evidence-based recommendations and solutions. You cannot analyse situations based on emotions. What you feel is what you feel. Good luck to you!" Ts Choo says candidly.

"Let's look at education. We have heard a lot of negative comments about our education system over the years. However, we have produced many doctors, until we have run out of places for the doctors to work in. We have produced many competent lawyers, architects, engineers, accountants, technologists and technicians. For a small country, we have produced a lot. The numbers are there."

"However, they function in their own respective way. When you function in your own respective way, there is no pooling together of resources. Then, it will not be as productive as it could be."

"According to the department of statistics, 98.2% of our enterprises are SMEs (consisting of not more than 75 employees). Therefore, it is quite natural that we want to focus on the SMEs. Professional services are also a part of SMEs. The professional services companies are not big in Malaysia. They are mainly small, but the problem is, many of them are happy with where they are. They are not hungry to grow and expand," says Ts Choo.

"As the champion for professional services, I have to figure out how to get them to want to grow and seek new challenges. The impact of technology is so drastic, that if you don't adapt to the new way things are being done, you are going to be left out."

REMOVING BLOCKS THAT PREVENT PROGRESS

In order to accelerate the growth of professional services, Ts Choo used engineering services as the driver because it cuts across the board and involves every sector.

He recalls how he had asked the former International Trade and Industry minister Datuk Seri Mustapa Mohamed to assist him in holding a town hall meeting for 70-80 engineers. The turnout exceeded expectations – 100 people came, says Ts Choo.

Prior to the town hall, some background work was done to compile relevant data and statistics to share with those who attended. They had also obtained information on 10 foreign consulting firms – their turnover, staff strength, productivity per head, and most importantly, their shareholding.

"We had a dialogue. We wanted to find out what the stumbling block was, so that we can transform the productivity of the country's engineering services. We needed consensus from everybody. Well, we found out what the stumbling block was – we needed institutional reform," Ts Choo elaborates.

The impact of technology is so drastic, that if you don't adapt to the new way things are being done, you are going to be left out.

Ts Choo continues: "The Engineers Act 1967 (Revised 2015) controlled the business of the engineering consulting firms. It restricted their capitalisation. The regulations of the Act allows for only 30% of shareholders to be from non-professional engineers. Most, if not all, were good enough to serve the needs of the domestic market."

"They make RM1-2 million per year, they are happy already. The removal of the shareholding restriction will allow a few to be financially stronger and compete with foreign firms dominating the local market – and even venture abroad. GLCs can assist by appointing such firms to be the principal consultants that have the capital to engage experts."

Mustapa, Choo says, had advised that the next step should be to organise a bigger forum, with all the stakeholders – not only the engineers, but also bankers, lawyers and others.

"If there was a consensus, a paper can be prepared and submitted to the government for the cabinet to approve," states Choo.

If there is a will, there is a way. The way forward for professional services looks promising, if they can focus on their objectives, and adopt a growth mindset.



LAMPIRAN 4

THE STAR (NATION): MUKA SURAT 8

TARIKH: 27 OKTOBER 2018 (SABTU)

Power sector draws attention after IPP project cancellations

By LEONG HUNG YEE
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THIS is turning out to be an interesting time for the power sector in the country following the cancellation of four independent power producer (IPP) projects by the government.

The government's next course of action will be closely watched by investors and the industry, especially projects that have yet to be finalised such as 1,000-1,200MW combined-cycle power plant by Tadmax Resources Bhd and another power plant in Kedah.

It is understood that Tadmax is in advanced stage of negotiation with the Single Buyer Department, a government entity that prepares power purchase agreements (PPA) on behalf of Tenaga Nasional Bhd (TNB) and Petronas Gas Bhd for the gas supply as well as transmission works agreement with TNB Transmission.

Tadmax was directly awarded a 1,000MW combined-cycle gas turbine plant on its Pulau Indah land in August 2016.

The company has also announced that it will jointly build a power plant in Pulau Indah, Selangor with Worldwide Holdings Bhd and Korea Electric Power Corp (KEPCO), South Korea's largest state owned public utility company.

Tadmax will hold a 40% stake in the venture, Worldwide 35% and KEPCO the remaining 25%.

The transformation of the country's power sector continues to deliver, as shown by the cancellation of the four proposed coal-fired power plant.

Just a couple of years ago, the country was planning up power plants to cope with the rising demand for electricity and the sharp reversal is a reflection of the changing economics of renewable energy (RE) such as the country move towards a greener direction.

Additionally, the current reserve margin gives the government time to cancel some IPP contracts.



No impact: Most analysts say the cancellations are neutral and have no financial impact on TNB and Malakoff as the projects were only at the planning stages with no agreements entered into as yet.

The ministry has set a target of 20% of the country's electricity to be generated from renewable sources by 2025, an increase from 2% of total energy generation mix currently.

For the record, the total installed capacity in Peninsular Malaysia stood at 24,124 MW as of July 2018. Demand continue to increase year by year with the latest all time high peak demand registered at 18,338 MW on Aug 15, 2018. This new peak demand broke the previous record high of 18,010 MW registered on June 6, 2018.

On Wednesday, Energy, Science, Technology, Environment and Climate Change Minister Yeo Bee Yin said the government will potentially save RM1.26bil in electricity tariff following the cancellation of

four IPP projects.

The four IPP projects are Malakoff Corp Bhd and Tenaga Nasional Bhd's (TNB) 700 MW Gas Power Plant in Kapar, Selangor; Aman Majestic Sdn Bhd and TNB Gas Power Plant 1,400 MW Gas Power Plant in Paka, Terengganu; Sabah Development Energy Sdn Bhd and SM Hydro Energy Sdn Bhd 300 MW Gas Power Plant in Sandakan Sabah; and Edra Power Holdings Sdn Bhd 400 MW solar Power project.

"The cancellation of the projects are not expected to have negative financial or legal impact to the government as they had breached the terms and conditions in the offer letter," she said.

Yeo noted that the projects were awarded

through direct negotiations, a practice which has been done away with for future projects.

The country's electricity reserve margin is still at an optimum level of 32%, she says.

AllianceDRS Research believes that all the four terminated power plants have yet to progress to the advanced stages.

"The relatively subdued power consumption growth, coupled with the relatively comfortable reserve margin of about 30%, has allowed the government to cancel the projects," it says.

Most analysts say the news of the cancellations is neutral and has no financial impact on TNB and Malakoff as these were only at the planning stages with no agreements entered into as yet.

Hence, there is no impact to the existing portfolio and earnings of both TNB and Malakoff.

PublicInvest says the development of a new gas-fired power plant with a capacity of 700MW in Kapar, Selangor (by Malakoff and TNB) was a proposal which was supposed to be a potential re-powering of the existing Kapar Energy Ventures (KEV)'s Generating Facility (GF) 4 site upon the expiry of its power purchase agreement (PPA) in July 2019.

"No contracts have been officially awarded, with this still under the planning stages. To note, Malakoff has a 40% stake in KEV, while TNB holds the remaining stake," it says.

Meanwhile, MIDF Research says the two cancelled projects involving TNB were still in planning stages and were never part of TNB's announced pipeline of generation projects, which currently comprise of three key projects Sepang Solar (50MW), Jimah East (200MW) and Southern Power Generation (1440MW) - these announced projects are not affected.

"The two cancelled projects have yet to enter into any agreement/PPA and were not built into our projections and valuations for TNB," MIDF says, adding that it has a "buy" call with a target price of RM16.90 on TNB.

LAMPIRAN 5
THE STAR (NATION): MUKA SURAT 15
TARIKH: 27 OKTOBER 2018 (SABTU)

Import of plastic waste banned

Permanent prohibition in place after realising M'sia is top dumping ground

By JOSEPH KAOS Jr
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PUTRAJAYA: Malaysia has permanently banned the import of plastic scrap, following revelations the country has become a top dumping ground for plastic waste, said Housing and Local Government Minister Zuraida Kamaruddin.

However, companies can apply for APs to import quality, clean plastic.

"We have agreed to stop the issuance of APs for the import of plastic scrap, the types that are contaminated."

"Those who wish to import quality, clean plastic can apply for new APs but there is strict criteria and we have added more conditions."

"At present, only eight companies in Malaysia fully comply with this criteria," Zuraida told reporters after a multi-ministry meeting at her ministry here.

The additional conditions for companies include obtaining approval from the Department of Occupational Safety and Health, having their own factories and submitting their list of end product buyers.

"Some AP owners previously didn't even have their own factories, so they sent their plastic waste to illegal factories," said Zuraida.

Zuraida added imports of clean plastic will only be allowed for the next three years, to protect the local plastic industry.

The plastic recycling and manufacturing industry in Malaysia has an economic value



Not biodegradable: Plastic waste piled outside an illegal recycling factory in Jenjarom, Kuala Langat. — Reuters

of RM30bil while globally, it is worth RM600bil.

"So we will phase out the import of plastic waste in three years and then we go fully local," said Zuraida.

Zuraida said Malaysia imported a total of 1.8 million tonnes of plastic from 33 countries since 2015.

"After this, we will limit import to only developed countries such as the United States, Korea, Japan and European countries."

The meeting was chaired by Zuraida and attended by the ministers of the Ministry of Energy, Science, Technology, Environment and Climate Change; Ministry of Water, Land and Natural Resources; and the Ministry of International Trade and Industry.

The Malaysian Plastic Manufacturers Association also shared their views during the meeting.

LAMPIRAN 6
UTUSAN MALAYSIA (DALAM NEGERI): MUKA SURAT 10
TARIKH: 27 OKTOBER 2018 (SABTU)

Pengeluaran AP dihentikan serta merta

Tiada lagi import sampah plastik

Oleh **SOFIAN BAHAROM**
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■ PUTRAJAYA 26 OKT.

KEMENTERIAN Perumahan dan Kerajaan Tempatan (KPKT) hari ini memutuskan untuk menghentikan sepenuhnya pengeluaran permit import (AP) bagi sampah plastik secara serta-merta.

Menterinya, Zuraida Kamaruddin berkata, keputusan itu dikeluarkan selepas Mesyuarat Jawatankuasa Khas Peringkat Menteri berhubung Isu Lambakan Sisa Plastik Import di Malaysia.

Katanya, mesyuarat itu melibatkan Kementerian Tenaga, Teknologi, Sains, Perubahan Iklim dan Alam Sekitar; Kementerian Air, Tanah dan Sumber Asli serta Kementerian Perdagangan Antarabangsa dan Industri.

"Langkah ini ke arah memperkasa industri plastik tempatan dengan kerangka masa *phase out* dalam tiga tahun akan datang. Kita selepas ini akan terus bergantung kepada industri plastik tempatan."

"Industri plastik ini membawa nilai ekonomi lumayan dengan pendapatan kira-kira RM30 bi-



ZURAIDA KAMARUDDIN



lion setahun di Malaysia, manakala di seluruh dunia dianggarkan RM600 bilion setahun, sekali gus mencerminkan prospeknya yang besar," katanya dalam sidang akhbar di sini hari ini.

Utusan Malaysia baru-baru ini ini melaporkan gesaan daripada pertubuhan bukan kerajaan (NGO) dan ahli akademik agar kerajaan mengharamkan sepenuhnya import sisa plastik dari negara maju seperti Amerika Syarikat (AS) dan Britain untuk dikitar semula di negara ini yang pada tahun lalu sahaja mencatat jumlah 550,000 tan bagi mengelak kesan buruk kepada kesihatan awam dan alam sekitar.

Mereka melihat perkara itu

belum memadai kerana sisa plastik domestik sendiri cukup banyak untuk diuruskan.

Sebelum ini, kementerian menghentikan pemberian AP sisa plastik untuk tempoh tiga bulan berkuat kuasa 23 Julai lalu.

Dalam pada itu, Zuraida berkata, mesyuarat hari ini turut bersetuju untuk mengkaji semula kriteria import plastik berkualiti seperti plastik industri, plastik homogenous dan plastik bersih.

Katanya, mesyuarat berkeinginan turut bersetuju dalam melaksanakan kajian mengenai peranan industri plastik tempatan bagi memastikan kebergantungan negara kepada industri dapat dipertingkatkan.

"Kementerian turut giat menggerakkan usaha penghapusan kilang-kilang plastik haram di seluruh negara," katanya.

LAMPIRAN 7
BERITA HARIAN (ISU): MUKA SURAT 16
TARIKH: 27 OKTOBER 2018 (SABTU)

Pengeluaran AP sampah plastik dihentikan serta-merta

Putrajaya: Kementerian Perumahan dan Kerajaan Tempatan (KPKT) menghentikan sepenuhnya pengeluaran lesen import (AP) sampah plastik berkuat kuasa, semalam, kata Menteri, Zuraida Kamaruddin.

Beliau berkata, keputusan itu susulan Mesyuarat Jawatankuasa Khas Peringkat Menteri berhubung isu lambakan sisa plastik import di Malaysia dengan tiga lagi kementerian lain.

Katanya, kementerian terbabit adalah Kementerian Tenaga, Teknologi, Sains, Perubahan Iklim dan Alam Sekitar; Kementerian Air, Ta-

nah dan Sumber Asli dan Kementerian Perdagangan Antarabangsa dan Industri.

Perkasa Industri plastik tempatan

"Langkah ini ke arah memperkasa dan mempertingkatkan kebergantungan kepada industri plastik tempatan.

"Industri plastik ini mampu membawa pulangan lumayan kepada ekonomi negara dengan pendapatan kira-kira RM30 bilion setahun di Malaysia, manakala di seluruh dunia dianggarkan RM600 bilion setahun," katanya pada si-



Zuraida Kamaruddin

darang media di sini, semalam.

Sementara itu, beliau berkata, kementeriananya giat menghapuskan kilang memproses plastik haram di negara ini dengan melaksanakan operasi 'pembersihan' di seluruh negara.

Media sebelum ini melaporkan gesaan pertubuhan bukan kerajaan (NGO) dan ahli akademik supaya kerajaan mengharamkan sepenuhnya import sampah plastik untuk dikitar semula di negara ini bagi mengelak kesan buruk kepada kesihatan awam serta alam sekitar.

Selain itu, Zuraida berkata, me-

syuarat berkenaan juga bersetuju mengkaji semula kriteria pengimportan plastik berkualiti seperti plastik industri, homogenous dan plastik bersih ke negara ini.

"Kajian mengenai peranan industri plastik tempatan akan turut dibuat ke arah memperkasa industri plastik negara supaya kebergantungan kepadanya dapat terus dipertingkatkan," katanya.

Sementara itu, beliau berkata, kementeriananya giat menghapuskan kilang memproses plastik haram di negara ini dengan melaksanakan operasi 'pembersihan' di seluruh negara.

LAMPIRAN 8

THE STAR (EVENTS): MUKA SURAT 13

TARIKH: 29 OKTOBER 2018 (ISNIN)



Carlos (left) and Pink in action during the Petrosains Science Show Competition 2018. — Photos: ONG SOON HING/The Star



The team from SMK Tun Abdul Razak, Kuching, (from centre) Carlos, Pink and Tchang receiving the trophy from Dr Ahmad Rafee (second left) as Bank Islam chief executive officer Mohamed Ibrahim Morif (left) and Fedora (right) look on.

Inspired by shape of honeycombs

Duo from Kuching school buzzing with happiness on winning science show competition

By DOUGLAS ELLIOT
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HAVE you ever wondered why honeycombs are hexagonal in shape?

The question, posed by the team of SMK Tun Abdul Razak from Kuching, Sarawak, was what eventually led them to win the Petrosains Science Show Competition 2018.

A third win for the school, the team is represented by classmates Pink Rakim and Carlos Tinus Kirip, both 19.

"We are extremely grateful for the win and we would like to thank our teacher and fellow students for supporting us," said Carlos.

The duo took about a month to prepare for the state-level championship and another month for the national level.

"Chemistry between the two presenters is important. Since we are in the same class and boarding room, it makes it easier for us to rehearse," said Pink, who also took home the special award of Best Presenter.

Presenting a topic titled "The mysterious hexagon", the students' creative use of shadow



The winning teams in the Petrosains Science Show Competition 2018 - champion SMK Tun Abdul Razak, Kuching, with first runner-up SMK Tamparuli, Sabah and third placed SMK Perempuan Putu, Kuala Lumpur at the prize-giving ceremony.

dance in their opening performance managed to grab the audience's attention.

"The idea for the topic came after I read a newspaper article on beekeeping," said the accompanying teacher Tchang Pui Mui.

"As it is related to the field of Science, Technology, Engineering and Math (STEM), we incorporate the elements into the topic."

Interestingly, both students are from the arts stream. However, that does not stop the students from learning STEM.

"Everyone can study STEM and

it should not be limited to science stream students," added the chemistry teacher.

Held at Kuala Lumpur Convention Centre (KLCC) on Oct 25, the final event saw eight secondary school teams battling it out to win the top prize of an all-expense-paid trip to the China Science and Technology Museum in Beijing.

Second place went to SMK Tamparuli while SMK Perempuan Putu took third.

Among other things, the students were judged based on content,

performance and delivery.

Organised by Petrosains, the competition is supported by the Education Ministry's Co-Curricular and Arts Division and financial partner Bank Islam.

"We have received feedback from teachers that this competition has helped students and the general public to be more motivated and inspired towards science," said Petrosains chief executive officer Fedora Zulkipli.

"It encourages students to think creatively and innovatively when presenting the science concepts in

their presentations."

Education Ministry education planning, policy and research division director Dr Ahmad Rafee Che Kassim said the competition was in line with the Government's efforts and objectives to "spark interest and engage the Malaysian public, especially students, to be interested and involved in science and technology endeavours."

The Petrosains Science Show competition 2018 will be aired on Astro TVIQ channel 610 in December.

LAMPIRAN 9
THE STAR (NEWS): MUKA SURAT 5
TARIKH: 29 OKTOBER 2018 (ISNIN)

TNB Research in joint collaboration on palm oil demonstration plant

KUALA LUMPUR: Tenaga Nasional Bhd (TNB), through TNB Research Sdn Bhd, has teamed up with two other companies to run a demonstration plant that cleans and removes impurities from palm oil empty fruit bunches (EFB) used in the production of premium biomass pellet. The pellet is manufactured as fuel for power generation.

TNB Research is a wholly-owned subsidiary and the research and development (R&D) arm of TNB.

Presently, it is undertaking research activities and providing engineering services in developing the residue of palm oil industries to convert into high value-added products, TNB said in a statement.

TNB Research, together with KEPRI, the research institute of

KEPCO, South Korea's largest electric utility and Detik Aturan Sdn Bhd (DASB), a Malaysian biomass pellet producer, last Tuesday launched the demonstration plant, Malaysia's first Biomass Water Washing Demonstration Plant.

Speaking at the launching ceremony, Detik Aturan managing director Khairil Annuar Khalid described the company's involvement in the project - by providing a location for the demonstration plant, as proof of its commitment towards a cleaner and healthier environment.

Meanwhile, KEPRI President Dr. Sung Hwan Bae said as South Korea's leading electrical technology developer, the institute was delighted to support the expansion

of the potential of commercially high-value biomass pellet as fuel supply for power generation.

TNB Research managing director Zainul Asri Mamat said: "Thanks to emerging technologies, the global biomass business is experiencing an era of rapid change."

He said the collaborative effort on the demonstration plant would ensure that the biomass pellet industry remained at the forefront in leveraging those changes.

At the launch, the three parties also signed a memorandum of understanding to promote bilateral cooperation in technology, competency and capability, as well as business opportunities on biomass business, worldwide. — Bernama

LAMPIRAN 10
BERITA HARIAN (BISNES): MUKA SURAT 20
TARIKH: 29 OKTOBER 2018 (ISNIN)

TNB jalin pakatan projek kilang biomas

Tenaga Nasional Bhd (TNB), menerusi TNB Research Sdn Bhd, menjalin kerjasama dengan dua syarikat lain bagi mengendalikan kilang demonstrasi pembersihan kekotoran tandan kosong buah sawit (EFB) yang digunakan dalam pengeluaran palet biomas premium.

Palet berkenaan digunakan dalam usaha penjaan tenaga.

"TNB Research, anak syarikat milik penuh dan cabang penyelidikan dan pembangunan (R&D) TNB pada masa ini menjalankan aktiviti penyelidikan dan menyediakan perkhidmatan kejuruteraan pembangunan membabitkan sisa industri minyak sawit yang diubah kepada produk nilai tambah tinggi," kata TNB dalam satu kenyataan, semalam.

Kilang demonstrasi

Pada Selasa lalu, TNB Research bersama dengan KEPRI, institut penyelidikan KEPCO yang adalah utiliti elektrik terbesar Korea Selatan dan Detik Aturan Sdn Bhd (DASB), pengeluar palet biomas Malaysia, melancarkan kilang demonstrasi terbabit yang adalah kemudahan demonstrasi cucian air biomas pertama seumpamanya di Malaysia.

Bercakap pada majlis pelancaran itu, Pengerah Urusan Detik Aturan, Khairil Annuar Khalid, menyifatkan pembabitan syarikat dalam projek itu dari segi penyediaan lokasi kilang berkenaan sebagai bukti komitmen terhadap persekitaran lebih bersih dan sihat.

Sementara itu, Presiden KEPRI, Dr Sung Hwan Bae, berkata sebagai pemaju teknologi elektrik terkemuka Korea Selatan, institut itu gembira kerana dapat menyokong pengembangan palet biomas bernilai tinggi yang berpotensi sebagai bahan bakar untuk penjaan kuasa.

LAMPIRAN 11
BERITA HARIAN (MUKA SEPULUH): MUKA SURAT 10
TARIKH: 29 OKTOBER 2018 (ISNIN)

Fahami faktor utama fenomena cuaca ekstrem



Prof Dr Fredolin Tangang

Pengerusi, Pusat Sains Bumi dan Alam Sekitar, Fakulti Sains & Teknologi, Universiti Kebangsaan Malaysia; & Ahli Panel Pakar Saintifik, Agensi Pengurusan Bencana Negara (NADMA)



Kefahaman mekansime fenomena cuaca ekstrem adalah penting dalam membantu peramal membuat ramalan. Atas sebab ini, mekanisme fenomena cuaca ekstrem di Pantai Timur, sudah lama menjadi subjek penyelidikan penulis dan kumpulan di UKM"

Jabatan Meteorologi Malaysia membuat pengumuman berkaitan musim monsun timur laut dengan jangkaan ia bermula pada penghujung Oktober tahun ini, sedikit awal pada kebiasaannya berbanding pertengahan November. Kebiasaannya musim monsun berpanjangan hingga Februari atau Mac dengan tempoh paling aktif dari November hingga Januari. Walaupun banjir biasa berlaku pada setiap musim monsun timur laut, kebimbangan penduduk adalah banjir besar yang melanda negeri di Pantai Timur.

Penduduk mengharapkan kejadian banjir besar sebelum ini seperti di Kelantan dan Terengganu pada Disember 2014 dan di Johor pada Disember 2006 serta Januari 2007, tidak akan berulang.

Mengikut laporan, banjir besar di Kelantan dan Terengganu pada Disember 2014 menjejaskan lebih 500,000 penduduk dan kerugian harta benda serta infrastruktur mencecah RM3 bilion.

Hakikatnya setiap kali musim monsun timur laut, kebarangkalian banjir besar berulang meningkat. Penduduk serta agensi berkaitan perlu bersiap siaga menghadapi sebarang kemungkinan.

Cuaca ekstrem sukar diramal

Pastinya jika banjir besar ini boleh diramal lokasi, tarikh dan masa ia berlaku jauh lebih awal, contohnya dua minggu lebih awal, persediaan boleh dibuat untuk memastikan impak kepada penduduk dan harta benda boleh diminimumkan.

Hakikatnya walaupun sistem ramalan iklim wujud, kecekapan ramalan jangka

panjang adalah rendah. Bagi model ramalan cuaca jangka pendek, walaupun kecekapan secara relatif lebih tinggi, menukrun secara drastik jika melebihi tiga hari dan hampir sifar bagi ramalan melebihi tujuh hari.

Begitu juga ramalan banjir, yang bergantung kepada maklumat daripada model ramalan cuaca, hampir tiada kecekapan bagi ramalan melebihi tiga hari.

Bagaimanapun, ramalan dalam jangka tempoh 24 hingga 48 jam boleh dianggap baik dan berguna kepada agensi berkenaan untuk bertindak dan membantu penduduk bersiap siaga. Sebarang amaran dikeluarkan berdasarkan ramalan dalam jangka masa ini mesti diambil perhatian secara serius oleh penduduk.

Fenomena cuaca ekstrem

Kefahaman mekansime fenomena cuaca ekstrem adalah penting dalam membantu peramal membuat ramalan. Atas sebab ini, mekanisme fenomena cuaca ekstrem di Pantai Timur, sudah lama menjadi subjek penyelidikan penulis dan kumpulan di Universiti Kebangsaan Malaysia (UKM).

Hasil penyelidikan penulis mendapati, faktor utama cuaca ekstrem dan banjir besar berlaku ekoran kewujudan kelembapan tinggi menjana sistem perolakan kuat.

Semasa musim monsun timur laut, tiupan kencang berkala angin luluran sejuk akibat pengukuhan sistem tekanan tinggi yang berpusat di Siberia, mengangkut kelembapan udara di atas Laut China Selatan, menuju ke arah Semenanjung Malaysia dan menyediakan bahan utama untuk perolakan kuat berlaku.

Bagaimanapun, terdapat beberapa faktor utama lain yang mengawal kekuatan perolakan dan kedudukan lokasi cuaca ekstrem serta banjir besar berlaku. Pada Disember 2014 banjir besar berlaku di bahagian utara Pantai Timur (Kelantan dan Terengganu), manakala pada Disember 2006 dan Januari 2007 bahagian selatan (terutamanya Johor) yang mengalami banjir.

LAMPIRAN 11 (SAMBUNGAN)
BERITA HARIAN (MUKA SEPULUH): MUKA SURAT 10
TARIKH: 29 OKTOBER 2018 (ISNIN)

3 faktor berlaku serentak punca banjir besar

- Dari MUKA SEPULUH

Seiring dengan pergerakan pahun morisun ke arah selatan, lo-barangkalian berlakunya banjir adalah tinggi di bahagian utara pada awal morisun dan sebalik-nya, di bahagian selatan pada Ja-muari.

Tetapi lokasi berlaku cuaca eks-trem ini juga dikawal oleh kedu-dukan lokasi fenomena cuaca yang dipanggil sebagai Pusaran Borneo, yang dicirikan oleh ti-upan angin berarah melawan jam dan berskala sinoptik.

Pusaran Borneo yang berkedu-dukan sedikit ke utara dan ber-dekatan Semenanjung akan me-nyebabkan penumpuan maksimu-lembapan dan seterusnya akan menjana hujan lebat di ba-

hagian utara Pantai Tirisuz.

Di sebaliknya, Pusaran Borneo yang terletak di selatan antara Jo-hor dan bahagian barat Borneo akan menyebabkan penumpuan kelembapan maksimum dan hu-jan lebat di bahagian selatan Pan-tai Timur Semenanjung Malaysia.

Jika Pusaran Borneo ini berkedudukan jauh dari Semenanjung dan di atas Pulau Borneo, ia akan membantu mengangkut kelembapan ke kawasan berkenaan dan mengelakkan hujan lebat di ma-na-mana kawasan di Pantai Ti-mur.

Faktor ketiga adalah fenomena Ayunan Madden-Julian, iaitu fenomena berkekerapan sekali dalam 20 hingga 60 hari dan di-cirikan oleh sistem pusat tekanan rendah atmosfera yang bergerak

dari Lautan Hindi ke barat Lautan Pasifik, merentasi kawasan Mala-ysia dan Indonesia. Pergerakan ini biasanya dibahagikan kepada la-pan fasa.

Kedua bertindan atau kejadi-an serentak tiga faktor ini, iaitu sistem Ayunan Madden-Julian ini berada pada fasa tiga (iaitu pusat tekanan rendah di sebelah barat Sumatera), diikuti tiupan angin luhuran sejuk dan Pusaran Borneo berkedudukan hampir dengan Se-menanjung Malaysia, akan me-nyebabkan penumpuan kelembapan menguloh dan secara drastik menyebabkan hujan lebat dan banjir besar di Pantai Timur Se-menanjung Malaysia.

Hujan lebat ketika banjir besar di Kelantan dan Terengganu pada Disember 2014 dan di Johor pada

Disember 2006 dan Januari 2007, adalah manifestasi daripada ke-jadian serentak ketiga-tiga faktor ini.

Kajian saintifik perlu diteruskan

Penulis juga mendapati kejadi-an fenomena El Nino berkeama-nan sederhana dan lemah me-nyebabkan kekerapan hujan ekstrem di bahagian selatan Se-menanjung Malaysia mening-kat.

Menurut Pusat Ramalan Iklim, Pentadbiran Lautan dan Atmosfe-ra Kebangsaan Amerika Syarikat (NOAA) yang dikeluarkan pada 22 Oktober 2018 lalu, El Nino sederhana kuat atau lemah diramalkan pada penghujung 2018 dan awal 2019.

Ini mungkin menyediakan ke-adaan yang sesuai untuk hujan lebat berlaku di bahagian selatan Semenanjung Malaysia. Peningka-tan suhu dunia akibat pemanasan global juga meningkatkan ju-mlah kelembapan di udara dan boleh menjadi faktor penting jika pemanasan global berterusan.

Hasil kajian penulis mengenai peranan faktor mempengaruhi hujan ekstrem dan banjir besar ini diterbitkan dalam artikel di jurnal *Geophysical Research Letters* pada 2008.

Bagaimanapun, kajian saintifik perlu dipergiatkan bagi mening-katkan kecakapan dan keupayaan model ramalan meramal hujan ekstrem dan banjir besar kepada melebihi dua hingga tiga minggu lebih awal.

LAMPIRAN 12
THE STAR (NATION): MUKA SURAT 9
TARIKH: 29 OKTOBER 2018 (ISNIN)

Maszlee: Green campaign to target children

SIMPANG RENGAM: The Education Ministry will start an environmental campaign next year involving kindergartens and schools in the district.

Its minister Dr Maszlee Malik said the campaign would focus on the 3R (Reduce, Reuse and Recycle) to instil environmental awareness among students.

"Among other programmes in the campaign is turning food waste into compost," he told reporters after attending a closed-door meeting with stakeholders on water

and rubbish-related issues in the district.

Dr Maszlee said the ministry would monitor the success of the campaign in schools here before extending it to other schools nationwide.

At present, he said several schools in Sabah and Sarawak had already conducted such a campaign where they turned food waste into compost fertiliser.

He said that it was important to start early to create better awareness of environmental issues.

One way to achieve this was to involve school children, he added.

Separately, Dr Maszlee said the ministry had directed state education departments to be prepared for floods during the examination period.

"We have a standard operating procedure to be followed by the state education departments should the schools be hit by floods during major national examinations towards the end of the year," he said.

LAMPIRAN 13
MALAY MAIL (TOP NEWS): MUKA SURAT 2
TARIKH: 29 OKTOBER 2018 (ISNIN)



Leiking says Sabah can become an aerospace hub and a leading centre for the industry in maintenance, repair and overhaul.
— Picture by Razak Ghazali

Minister: Sabah has huge potential to become aerospace hub

KOTA KINABALU — Sabah has a huge potential to become an aerospace hub and a leading centre for the industry, especially in maintenance, repair and overhaul (MRO), as well as in manufacturing, said International Trade and Industry Minister Datuk Darell Leiking.

Leiking said rising tourist arrivals in Sabah could pave the way for more flights into the state, hence the requirement for more aerospace services providers to cater to the needs of airlines for MRO facilities and capabilities, as well as human capital skills.

More Sabahans are needed to venture into the aerospace industry as it could create more

opportunities in the industry and attract new investments into the state, he said.

Leiking said Sabahans made up only 10 out of 230 aerospace services providers registered in the country.

"It is (the figure) very small compared to the opportunity available in the aerospace industry. We need more Sabahans to venture into the aerospace industry," he told reporters after officiating the Malaysia Aerospace Industry Seminar, here yesterday.

Themed "Building the Future of the Aerospace Ecosystem in Malaysia", the one-day seminar was organised by the Ministry of International Trade and Industry and National

Aerospace Industry Coordinating Office.

It was aimed at promoting initiatives to further enhance and highlight opportunities in the Malaysian aerospace ecosystem to attract local players to venture into the industry.

Leiking said 48 per cent of the Malaysian aerospace industry's revenue of RM13.5 billion last year was contributed by the manufacturing sector, while the MRO made up 46 per cent.

He said Malaysia has a huge potential in the global aerospace business, with its products being exported throughout the world.

— Bernama

LAMPIRAN 14
HARIAN METRO (TENGAH): MUKA SURAT 35
TARIKH: 29 OKTOBER 2018 (ISNIN)

>> Terdapat kira-kira **21,000** kawasan yang mudah berlaku tanah runtuh di seluruh negara

HARIAN METRO

Nor Afzan Mohamad Yusof
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Kuala Lumpur

Polis khas jaga alam sekitar

■ **PDRM digesa wujud pasukan khusus banteras jenayah alam sekitar semakin berleluasa**

Sebuah jabatan khas di bawah Polis Diraja Malaysia (PDRM) harus ditubuhkan dalam usaha membanteras jenayah alam sekitar yang semakin berleluasa, khususnya membabitkan kecurian dan kemusnahan khazanah alam di seluruh negara.

Pengerusi Kanan Yayasan Pencegahan Jenayah Malaysia (MCPF) Tan Sri Lee Lam Thye berkata, sebagai usaha pelaksanaan, PDRM mesti memperkernaskan sumber manusia dan mempertingkatkan asetnya bagi membanteras jenayah alam sekitar.

Katanya pembabitkan aktif dan agresif polis menerusi kerjasama dengan pelbagai agensi penguatkuasaan lain berupaya membantu kerajaan menangani isu berkaitan termasuk membanteras sindiket yang terbabit dalam pemburuan haram, kecurian balak dan kayu gaharu serta penerokaan tanah haram.

"Walaupun ada di antara

kesalahan dilakukan terletak di bawah bidang kuasa agensi lain dan kerajaan negeri, peranan PDRM mampu mengatasi jenayah alam sekitar.

"Aspek penguatkuasaan bersama PDRM dan agensi berkaitan juga dapat membantu mengatasi pembangunan tidak terkawal di kawasan cerun yang menjadi punca utama kejadian tanah runtuh sejak kebelakangan ini.

"Aspek pengawasan, penting kerana kajian dilakukan Universiti Teknologi Malaysia (UTM) menunjukkan ada kira-kira 21,000 kawasan yang mudah berlaku tanah runtuh di seluruh negara," katanya dalam kenya-

taan, semalam.

Jenayah alam sekitar merujuk kepada pelanggaran undang-undang jenayah oleh mana-mana pihak termasuk orang awam yang boleh menjejaskan alam sekitar yang dilindungi.

Laporan mendedahkan jenayah itu menjadi lebih buruk dengan pembabitkan agensi yang sepatutnya dipertanggungjawabkan memelihara kesejahteraan alam sekitar, namun bertindak sebagai tali barut demi wang.

Selain pembangunan, penerokaan tanah tidak terkawal juga menjadi antara punca beberapa kejadian tanah runtuh yang turut mengakibatkan kehilangan nyawa.

Lee berkata, langkah pencegahan jenayah alam sekitar oleh PDRM tepat pada masanya, malah selaras dengan tindakan tegas Suruhanjaya Pencegahan Rasuah Malaysia (SPRM) menangani jenayah alam sekitar yang turut dikaitkan dengan isu integriti dan amalan rasuah yang berleluasa.

Katanya, MCPF turut menyokong inisiatif PDRM untuk melindungi alam sekitar termasuk menganjurkan prog-

ram 'Selamatkan Alam Semulajadi'.

"Ia dilihat sebagai langkah pencegahan yang mampu membantu kerajaan membanteras jenayah terhadap alam semula jadi.

"Langkah proaktif PDRM menangani jenayah terhadap alam semula jadi ini amat efektif kerana turut membabitkan penyertaan masyarakat termasuk pertubuhan bukan kerajaan (NGO) dan pihak berkepentingan lain," katanya.

Menurutnya, platform berkenaan boleh digunakan dalam membincangkan isu berkaitan seperti pencero-bohan hutan, pembalakan haram dan kezaliman terhadap hidupan liar.



Peranan PDRM mampu mengatasi jenayah alam sekitar
Lee Lam Thye

LAMPIRAN 15
THE STAR (NATION): MUKA SURAT 3
TARIKH: 29 OKTOBER 2018 (ISNIN)

'Not time yet to form dept for environmental crimes'

IPOH: A special police department to combat crimes relating to the environment is not suitable at the moment, says Tan Sri Mohamad Fuzi Harun.

The Inspector-General of Police said they would have to shoulder additional cost in terms of manpower and equipment.

"The idea is good but we have to take into consideration the financial constraints faced by the government when considering new proposals," he told reporters after closing the International Practical Shooting Confederation IGP Cup at

Ulu Kinta North Brigade headquarters yesterday.

Mohamad Fuzi was commenting on a call by the Malaysian Crime Prevention Foundation to set up a special department to eradicate crimes relating to the environment, especially those involving thefts and destruction of Mother Nature.

Its senior vice-chairman Tan Sri Lee Lam Thye said active and aggressive involvement by the police with other enforcement agencies could help address issues such as poaching, timber theft and illegal land clearing.

"Although some offences are under the jurisdiction of the state government and other enforcement agencies, joint efforts would reduce environmental crimes such as pollution.

"Other areas of joint enforcement include monitoring uncontrolled development and illegal clearing on slope areas, which are among the main causes of landslides," Lee said.

On another matter, Mohamad Fuzi said they had proposed to the government to expand the Special Actions Unit (UTK) and VAT 69 commando.

"We are appealing to the government to approve the applications in the coming Budget as our elite team is very much needed in times of crisis.

"Now, we have more than 600 VAT 69 personnel and propose to increase to 992 members while we hope to raise the number of UTK to more than 800 personnel, from more than 300 members presently."

In March, Mohamad Fuzi said the applications received the approval of then prime minister Datuk Seri Najib Tun Razak. — Bernama

LAMPIRAN 16 SINAR HARIAN (SINAR SIASAT): MUKA SURAT 14 TARIKH: 29 OKTOBER 2018 (ISNIN)

Geosaintis menepis dakwaan viral di media sosial yang mendakwa Malaysia berisiko dilanda gempa bumi kerana titik gempa makin menghampiri negara ini. berikutan bencana itu kerap berlaku di Indonesia sejak akhir-akhir ini.

Profesor Madya Mustafa Kamal Shuib berkata, kedudukan titik gempa atau juga dikenali sebagai pusat gempa bumi sebenarnya tidak berubah.

"Beberapa insiden gempa berlaku di Semenanjung Malaysia yang mana titik gempa itu memang sudah ada. Misalnya dari tahun 2007 hingga 2009 beberapa titik gempa telah berlaku di Bukit Tinggi (Pahang), Marang (Perak) pada 29 April 2009 dan Jenartut (Pahang) pada Mac 2009 diikuti beberapa titik gempa telah direkodkan di Kuala Pilah, Negeri Sembilan berhampiran Ulu Bantai pada 30 November 2008.

"Sebelum itu rekod menunjukkan gempa' berlaku pada 1964 di Taak Kanyir (Terengganu) dan ia berlaku hingga 1985 dan 1986 berpunca daripada aktiviti pengisian air ke dalam tasik buatan manusia tersebut. Seterusnya pada 2010, berlaku gempa di Kanyir malakia pada 2016 berlaku gempa di Kuala Berang. Semua titik-titik gempa itu berada di Semenanjung Malaysia. Sekarang ini berlaku beberapa beberapa titik gempa direkodkan di Temenggor, Perak," katanya.

Menjelaskan secara lanjut Mustafa berkata, titik-titik gempa berlaku bermula pada tahun 2007 itu adalah selepas gempa bumi dan tsunami besar di Aceh pada 2004.

"Semasa pergerakan kerak bumi ketika berlaku gempa bumi itu, Semenanjung Malaysia telah mengalami tekanan yang kuat dan tenaga itu perlu dibebaskan. Pembebasan tenaga itu berlaku secara cepat dan mana-mana kawasan lemah terutama sesar lama diaktifkan semula lalu menghasilkan gegaran-gegaran kecil (minor) bermagnitud 3.6 ke bawah," katanya.

Selubungan itu ujar Mustafa, jelas menunjukkan titik gempa tidak berubah sebelumnya gempa yang berlaku di sempadan antara plat yang menghasilkan gempa bumi di Sumatera masih berlaku cuma zon gempa akibat proses tektonik tersebut telah diaktifkan dan sudah melampaui Sumatera, dan sampai ke Semenanjung Malaysia.

"Dulu gegaran yang kita rasa di Semenanjung Malaysia adalah akibat gempa besar di Sumatera yang mana sumber gempa bumi itu jauh dari Semenanjung Malaysia.

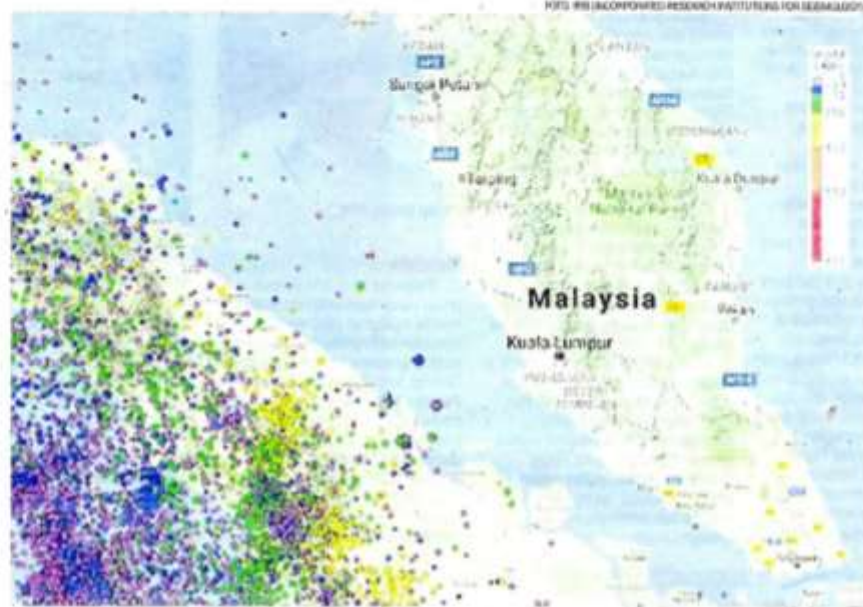
"Terapi sejak akhir-akhir ini selepas gempa bumi di Aceh pada 2004, titik gempa telah direkodkan di Semenanjung Malaysia (gempa bumi tempatan) akibat pembebasan tenaga secara cepat di mana sesotengah satu satah sesar lama diaktifkan semula. Apabila sesar lama ini patah maka terjadilah gempa bumi," katanya.

Menjelaskan lebih lanjut Mustafa berkata, semasa gempa bumi dan tsunami di Aceh dulu, plat Indo-Australia bertembung dengan plat Sunda (di mana Semenanjung Malaysia dan Sumatera berada) dan perlembungan itu menyebabkan terhasilnya satu 'megathrust' yang menghasilkan gempa serta tsunami.

Menurut pakar berkenaan, sekitar kawasan punca gempa dengan kedalaman sejauh 10 kilometer itu telah mengakibatkan arjakan kepada kerak bumi yang menghasilkan tsunami.

"Di Sumatera kesan tekanan akibat daripada pertembungan plat ini telah menyebabkan

GEMPA DI SEMENANJUNG TIDAK DAHSYAT



Peta menunjukkan titik-titik gempa yang telah melampaui Sumatera dan sampai ke Semenanjung.



MUSTAFA

tenaga dilepaskan dan sesar besar dikenali sebagai sesar Barisan yang terdapat di Sumatera sentiasa diaktifkan untuk menghasilkan sesar bermagnitud sederhana hingga besar (magitud enam ke atas), seterusnya menghasilkan gempa bumi berskala besar hingga boleh mendatangkan bencana dahsyat.

Dalam pada itu menurutnya, kita juga menasafi gegaran apabila gempa bumi berskala besar berlaku (magnitud tujuh hingga sembilan) di Sumatera.

"Sila berlaku gempa bumi besar di Sumatera, Pulau Pinang, Ipoh, Kuala Lumpur hingga ke Singapura akan menasafi gegaran. Punca gegaran adalah akibat gempa di Sumatera dan bukan berasal dari Semenanjung Malaysia. Gegaran adalah bermagnitud kecil serta tidak mendatangkan kemurahan. Kita cuma rasa goyangan," katanya.

Tambah Mustafa, dapat kita rumuskan bahawa terdapat dua punca gegaran di Semenanjung Malaysia iaitu: punca gempa bumi yang berasal dari Sumatera dan satu lagi berasal dari Semenanjung Malaysia itu sendiri namun kedua-duanya tidak mendatangkan bencana kerana gempa bumi yang berlaku adalah berskala lemah.

"Gegaran ini tidak boleh membawa bencana atau kemusnahan misalnya kepada bangunan," kata beliau.

Gempa bumi di Malaysia kesan bencana Aceh

GEMPA yang berlaku di beberapa tempat di Semenanjung seperti Bukit Tinggi, Jenartut, Temerloh, Kuala Pilah, Negeri Sembilan dan Marang dikatakan mempunyai kaitan dengan gempa di Aceh, Indonesia pada tahun 2004.

Pakar Gempa dan Tsunami, Datuk Dr Mohd Rosaidi Che Abas berkata, gempa di kawasan berkenaan adalah kesan gempa yang melanda Aceh.

Justeru itu, katanya, Malaysia telah mengambil tindakan agresif membangunkan sistem gempa dan tsunami serta prosedur operasi standard (SOP) di bawah Agensi Pengurusan Bencana (Nadma).

"Agensi pelaksana, mengambil cakra dengan mengadakan latihan amaran tsunami di beberapa tempat berisiko antaranya Kudat dan Sabah.

"Bagaimanapun latihan amaran gempa masih belum dilaksanakan namun saya yakin kerajaan akan melaksanakannya tidak lama lagi," katanya.

Pada masa sama, menurutnya, kawasan Shah Alam antara lokasi yang terluasan sekiranya berlaku gempa kuat di Sumatera dan sekitarnya.

"Kekuatan tanah bergoncang di sekitar Shah Alam disebabkan gempa adalah pada skala enam.

"Ya sebelum ini kita tidak tahu, tetapi hakikatnya Shah Alam dan kawasan ke arah pantai antara kawasan terluasan.

"Sebelum Aceh, tiada gempa direkodkan di Semenanjung melainkan Tsak Kanyir pada 23 Februari 2016. Itu pun disebabkan oleh empangan," katanya.



DR MOHD ROSAIDI

LAMPIRAN 17

UTUSAN MALAYSIA (MEGA SAINS): MUKA SURAT 27

TARIKH: 29 OKTOBER 2018 (ISNIN)

Pembangunan lestari dipromosi

PEMBANGUNAN lestari didefinisikan sebagai pembangunan yang mengikut keperluan semasa tanpa kompromi atau menjejaskan peluang generasi akan datang memenuhi keperluan mereka.

Dalam maksud yang mudah, apabila melaksanakan pembangunan, ia mestilah cekap, efisien dan tidak memberi kesan kepada alam sekitar dengan penggunaan sumber yang minimum.

Sebagai contoh, apabila penggunaan sumber seperti pasir terlalu banyak, apakah akan terjadi kepada generasi akan datang yang juga memerlukan sumber berkenaan?

Datuk Ir. Ahmad Asri Abdul Hamid berkata, kaedah pembangunan yang mengamalkan konsep cekap tenaga, penggunaan air dan tenaga diperbaharui (RE) mengurangkan pembaziran dan meningkatkan kualiti hidup manusia.

"Pembinaan hijau bermula pada peringkat awal termasuklah pemilihan tapak dan susur atur bangunan.

"Sebagai contoh bangunan yang dibina (sepatutnya) tidak



ANTARA risalah mengenai komitmen CIDB menuju kepada pembangunan lebih lestari.

menghadap matahari kerana ia akan menambah haba dalam bangunan, sekali gus memerlukan penyaman udara yang kuat," ujarnya.

Satu lagi amalan penting yang kini mula diperkenalkan adalah kutipan air hujan yang boleh diguna semula dan juga penggunaan panel solar pada bumbung bangunan untuk penjanaan tenaga RE.

Justeru, amalan hijau ini sebenarnya memberi persepsi yang baik bagi pemaui dan boleh menjadi penarik kepada pembeli.

Mengenai sama ada amalan hijau akan menyebabkan kos akan meningkat, Ahmad Asri berkata, ada dua sebab menyebabkan kenaikan kos iaitu yang pertama kos pembinaan yang sebenarnya boleh ditentukan lebih awal

dan kos operasi yang boleh meningkat sehinggalah bangunan tersebut dirobohkan.

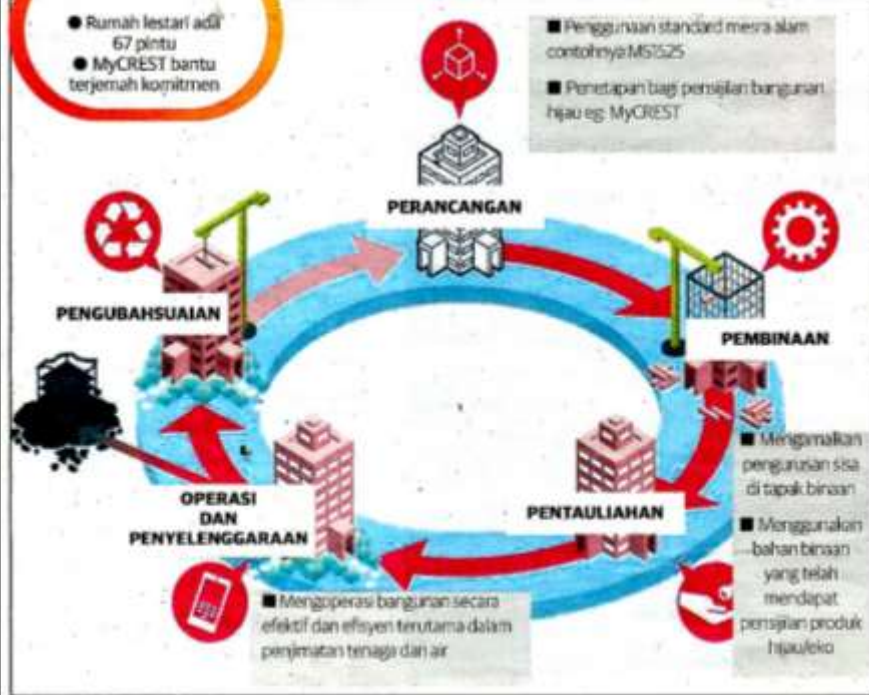
Katanya, kira-kira 40 peratus kos adalah pembinaan, manakala 60 peratus adalah kos operasi yang tinggi disebabkan oleh penggunaan tenaga semasa bangunan digunakan sehingga ia musnah atau roboh.

Kata beliau, antara contoh bangunan yang boleh dianggap hijau adalah bangunan Kementerian Kerjaraya yang baharu.

Dalam pada itu, CIDB sentiasa mempromosi amalan hijau antaranya membuat promosi menerusi pameran dan kini sebanyak 11 pameran telah dianjurkan untuk tujuan tersebut. Pihaknya juga mengadakan persidangan serta latihan kepada tenaga kerja yang terlibat.

SIRI 2: ISNIN DEPAN

- Rumah lestari ada 67 pintu
- MyCREST bantu terjemah komitmen



LAMPIRAN 18

UTUSAN MALAYSIA (MEGA SAINS): MUKA SURAT 25

TARIKH: 29 OKTOBER 2018 (ISNIN)

R&D UTM tumpu lima bidang

SECARA umumnya, bidang penyelidikan dan inovasi di Universiti Teknologi Malaysia (UTM) menerusi penyelidikan berselutu (*research alliance*) tertumpu kepada lima bidang utama iaitu Bahan Keterhadapan (FMRA), Kejuruteraan Inovatif (IERA), Komuniti Digital Pintar (SDCRA), Kesejahteraan (HWRA) dan Kelestarian Sumber (RSRA).

FMRA menjalankan penyelidikan dan pembangunan berkaitan bahan termaju, memperkasa teknologi pemrosesan dan pembuatan yang terkini, manakala IERA merupakan kumpulan utama dalam bidang kejuruteraan di UTM yang bertujuan untuk merevolusikan teknologi sedia ada dan pada masa sama, meneroka bidang infrastruktur berprestasi tinggi.

SDCRA pula terdiri daripada komuniti penyelidik UTM daripada pelbagai latar belakang yang membawa penyelidikan pelbagai disiplin yang terbaik dan memberi tumpuan kepada konsep dan penyelesaian yang digerakkan oleh data pintar.

Sementara itu, HWRA bertujuan mewujudkan platform bioekonomi berasaskan pengetahuan bagi memanfaatkan biosumber yang sedia ada yang disepadukan dengan biokejuruteraan dan teknik terkini bioinformatik.

Dengan pelbagai tekanan yang meningkat seperti kekurangan sumber dan perubahan iklim, RSRA di UTM memberi tumpuan dalam menangani permasalahan ini dan memainkan peranan

penting dalam membawa konsep kelestarian kepada masyarakat dan sumber secara keseluruhannya.

Timbalan Naib Canselor (Penyelidikan dan Inovasi) UTM, **Prof. Datuk Dr. Ahmad Fauzi Ismail** berkata, sebagai sebuah universiti penyelidikan, UTM mempunyai akses kepada geran penyelidikan bergantung kepada penganugerahan yang ditawarkan oleh Kementerian Pendidikan.

Katanya, sebagai salah sebuah satu daripada universiti penyelidikan di negara ini, UTM menerima sejumlah



insentif daripada Kementerian Pendidikan yang diperuntuk bagi mewujudkan geran penyelidikan dalam dan kembali kepada penyelidik.

Di samping itu, UTM telah menubuhkan program juara penyelidikan iaitu penyelidik yang berjaya memperoleh dana dari luar negara Eropah, Jepun, dan negara-negara lain, termasuk rakan industri dilantik sebagai juara penyelidikan untuk wilayah tersebut.

Katanya, juara penyelidikan itu kemudiannya ditugaskan untuk memberi panduan kepada

penyelidik lain, bertindak sebagai penghubung antara UTM dan penaja, serta membantu mewujudkan hubungan antara UTM dan universiti di rantau itu.

"Program tersebut berjaya melahirkan kesedaran kepada penyelidik kami mengenai kepentingan geran antarabangsa dan industri, dan ini dapat dibuktikan dengan peningkatan jumlah perolehan dana swasta dan antarabangsa iaitu dari 77 peratus (RM2.8 juta) pada tahun 2016 kepada 190 peratus (RM6.4 juta) pada tahun lalu.

"Sebagai langkah inisiatif untuk mendapatkan lebih banyak geran penyelidikan swasta, potongan cukai berganda (DTD) diperkenalkan pada tahun 2016.

"Hubungan hal ehwal korporat kami bekerja keras untuk menampilkan kit pemasaran supaya penyelidik kami dapat meningkatkan manfaat DTD kepada industri luar," ujarnya.

Selain itu, UTM juga menawarkan geran yang sesuai kepada penyelidik yang berjaya mendapatkan geran antarabangsa atau industri.

Insentif penerbitan juga diperuntuk setiap tahun untuk penerbitan yang diindeks pada *Scopus* dan *Web of Science*.

Mengenai sama ada UTM menubuhkan syarikat untuk tujuan pengkomersialan, Dr. Ahmad Fauzi berkata, terdapat beberapa pilihan cara pengkomersialan di UTM.

Katanya, kaedah yang cepat dan mudah untuk mengkomersialkan produk penyelidikan di UTM adalah menerusi syarikat-syarikat milik penuh universiti yang dikenali sebagai UTIM (sebelum ini dikenali sebagai GTIM) dan UTBS.

"Walaupun tumpuan UTBS lebih kepada projek perundingan,

"Lalu ini dapat mengurangkan beban kepada penyelidik untuk menguruskan urusan niaga kewangan, kerja perkeranian dan sebahagian

daripada tugas pengurusan pengkomersialan," ujarnya.

Tambahan lagi, penyelidik di UTM bebas untuk memohon menubuhkan syarikat terbitan (*spin-off*) mereka sendiri dengan saham dipegang oleh penyelidik individu dan bukannya pihak universiti.

Dalam kedua-dua kes ini, UTM akan menerima pulangan dari segi bayaran balik royalti, anugerah penyelidikan kontrak, sumbangan endowment dan banyak lagi.

UTM terus memberi galakan kepada kakitangannya untuk menggunakan segala kepakaran mereka dalam menjana pendapatan alternatif kepada universiti menerusi pelbagai aktiviti seperti pengkomersialan, kursus latihan, perundingan dan perkhidmatan makmal.

Pada tahun 2016, janaan pendapatan R&D di UTM menunjukkan peningkatan sebanyak lebih dari 33 peratus dari tahun sebelumnya dengan jumlah pendapatan RM37 juta, namun mencatatkan penurunan sebanyak lebih kurang RM8 juta pada tahun 2017.

Menjana pendapatan alternatif menjadi salah satu daripada agenda UTM dalam memastikan kemampanan operasi.

Secara keseluruhan, UTM berpandukan Pelan Global Universiti (Fasa III, 2018-2020) dan *enVision 2025* yang bermula pada tahun 2021.



DR. AHMAD FAUZI ISMAIL

LAMPIRAN 19
THE STAR (LETTERS): MUKA SURAT 18
TARIKH: 28 OKTOBER 2018 (AHAD)

DISPOSAL

NUCLEAR WASTE MISCONCEPTIONS

IN defending the use of nuclear power sources for electricity generation, I will focus on the science behind nuclear waste management.

Let us first define what nuclear waste is. Generally speaking, there are three categories of nuclear waste: low-level waste (LLW), intermediate-level waste (ILW) and high-level waste (HLW).

Of these, LLW makes up around 90 per cent of the waste generated by nuclear plants.

These include scrap metal, paper and plastics contaminated with radioactive material or exposed to neutron radiation.

These wastes are sent to be processed and disposed of at certain sites, which are purpose-built yet are not dissimilar to normal municipal waste disposal sites. Disposal facilities have strict limits on radioactivity for LLW.

LLW that exceeds this amount, like graphite from reactor cores, must be considered when developing long-term disposal options for higher-level wastes.

However, LLW of this type forms only a small proportion of the whole. LLW of very low levels of radioactivity can be disposed of in authorised landfill sites alongside commercial and municipal wastes, with strict limitations, of course.

Traditionally, LLW is stored in repositories by first grouting (immobilising with cement) inside metal containers. Once full, the metal containers will be fit with a cap.

However, further processing may be done before this step to reduce the amount of waste produced. These include recycling metals of low radioactivity, incineration of certain wastes (like plastics and textiles), cutting and supercompacting.

All in all, LLW can be dealt with in a straightforward, uncomplicated manner.

ILW is a little trickier. Treatment, including supercompacting, cutting and drying, may be used before packaging for storage and disposal. ILW is similarly immobilised in cement-based materials and packed into steel, concrete or ductile cast iron boxes.

Where it gets complicated is



Low-level nuclear waste makes up around 90 per cent of waste generated by nuclear power plants.

long-term management of ILW. For this, the method of disposal has to follow that for HLW.

HLW is a main concern when it comes to nuclear waste. Though it makes up a small amount of all nuclear wastes, 99 per cent of the total radioactive content is found in HLW.

Moreover, HLW is a long-lasting waste, with radioactive half-lives of some nuclei stretching thousands of years, though this doesn't mean the total level of radioactivity remains high for this long due to the decay of other nuclei.

HLW comprises spent fuel rods and other contents of the reactor post-utilisation and is stored initially underwater in pools onsite at power plants.

Water is a good retardant for radiation and also cools the rods

for about 50 years until radioactivity and temperature decrease to manageable levels.

The pools are made of thick, reinforced concrete with steel liners, designed to withstand hazards, such as flooding and earthquakes, and will hold all of the used fuel produced over the lifetime of the reactor.

Some of the HLW can be transferred into dry casks with air circulation inside concrete shielding after a minimum of five years inside the water tanks.

Others remain indefinitely in the tanks for about 50 years.

HLW may also be treated through vitrification to facilitate transport.

This includes mixing it with glass-forming materials and heated to high temperatures, which will immobilise HLW in

glass. This is then sealed in stainless steel canisters to be stored temporarily.

Permanent disposal of HLW is a bone of contention between professionals and the public, especially because the most viable method of disposal is geological disposal.

This requires disposing of radioactive wastes deep inside a suitable rock volume, for example, hill ranges, that will ensure long-term safety and environmental sustainability.

However, the public is usually opposed to this solution as it is believed burying nuclear waste would irradiate soil, cause massive pollution and health complications.

This is wrong as the methods of disposal are sufficient to ensure any safety or pollution concerns

are addressed.

Even so, there is no dedicated deep geological repository site that is in operation anywhere in the world.

Steps to create them were proposed, but most were shot down, again due to public perception.

The most famous among these is the Yucca Mountain nuclear waste repository in Nevada, a huge deep geological repository project approved in 2002 by the United States Congress, but it had to be closed for political reasons.

This leaves nuclear power plants to store their waste through indefinite onsite dry cask storage instead until a long-term solution is found.

All is not lost, though, as Finland and Sweden pave the way forward. Proper inclusion of the public has smoothened efforts in Finland to open a deep geological repository for waste management.

Now, the Onkalo spent nuclear fuel repository is being built and the process of burying nuclear waste is projected to begin in 2020.

It is based on the Swedish KBS-3 method of nuclear waste burial. Ironically, the Swedish have not begun construction of their own spent fuel repository.

All of this shows nuclear waste disposal is a multifaceted, complex process, but is well-established and robust as well.

As before, political and social misconceptions have established nuclear waste as too difficult to handle whereas for over 50 years, it has been dealt with quite well.

In this regard, let us first establish how much waste the technology produces.

If electricity was provided through nuclear fission alone, only 40g of fuel per person is produced.

For coal and fossil fuel-heavy energy production, CO2 emissions run in tonnes per capita. This is not inclusive of particulate matter generation, toxic emissions and other environmental pollutants such as sulphur dioxide.

ARVEENT KATHIRTELAVAN
 Chief coordinator, #Liberasi
 Kuala Lumpur

LAMPIRAN 20
THE STAR (OPINION): MUKA SURAT 14
TARIKH: 27 OKTOBER 2018 (SABTU)

CLIMATE CHANGE

RUNNING HOT

Taking a big chunk of carbon dioxide that is already in the atmosphere may be necessary to avoid significant further warming, writes **BRAD PLUMER**

WITH time running out to avoid dangerous global warming, the nation's leading scientific body on Wednesday urged the federal government to begin a research programme focused on developing technologies that can remove vast quantities of carbon dioxide from the atmosphere to help slow climate change.

The 369-page report, written by a panel of the National Academies of Sciences, Engineering and Medicine, underscores an important shift. For decades, experts said that nations could prevent large temperature increases mainly by reducing reliance on fossil fuels and moving to cleaner sources like solar, wind and nuclear power.

But at this point, nations have delayed so long in cutting their carbon dioxide emissions that even a breakthrough shift towards clean energy would most likely not be enough. According to a landmark scientific report issued by the United Nations this month, taking out a big chunk of the carbon dioxide already loaded into the atmosphere may be necessary to avoid significant further warming, even though researchers haven't yet figured out how to do so economically, or at sufficient scale.

And we'll have to do it fast. To meet the climate goals laid out under the Paris Agreement, humanity may have to start removing around 10 billion tonnes of carbon dioxide from the air each year by midcentury, in addition to reducing industrial emissions, said Stephen Pacala, a Princeton climate scientist who led the panel. That's nearly as much carbon as all the world's forests and soils currently absorb each year.

The panel's members conceded that the Trump administration may not find the climate change argument all that compelling,

A coal plant in Colstrip, Montana, the United States. The nation's leading scientific body has urged the federal government to begin a research programme to develop technologies that can remove vast quantities of carbon dioxide from the atmosphere. NYT PIC

since the president has disavowed the Paris Agreement. But, Pacala said, it's quite likely other countries will be interested in carbon removal. The United States could take a leading role in developing technologies that could one day be worth billions of dollars.

Right now, there are plenty of ideas for carbon removal kicking around. Countries could plant more trees that pull carbon dioxide out of the air and lock it in their wood. Farmers could adopt techniques, such as no-till agriculture, that would keep more carbon trapped in the soil. A few companies are building "direct air capture" plants that use chemical agents to scrub trace amounts of carbon dioxide from the air, allowing them to sell the gas to industrial customers or bury it underground.

But, the National Academies panel warned, many of these methods are still unproven or face serious limitations. There's only so much land available to plant new trees. Scientists are still unsure how much carbon can realistically be stored in agricultural soils. And direct air capture plants are still too expensive for mass deployment.

In theory, it might be possible to collect wood or other plant matter that has absorbed carbon dioxide from the air, burn it in biomass power plants for energy

and then capture the carbon released from combustion and bury it deep underground, creating, in essence, a power plant that has negative emissions. While no such facilities are operating commercially today, the technology to build them exists.

But one potential problem with this approach, the National Academies panel said, is that the land required to grow biomass for these power plants could run into conflicts with the need for farmland for food. The panel estimated this method might one day be able to remove three billion to five billion tonnes of carbon dioxide from the air each year, but possibly much less, depending on land constraints.

That's a far cry from the 10 billion to 20 billion tonnes of carbon dioxide we may need to pull out of the air by the end of the century to limit overall global warming to around 1.5°C (2.7° Fahrenheit), according to the recent UN report. That figure assumes nations manage to decarbonise their energy and industrial systems almost entirely by 2050.

If nations fail to hold global warming below that 1.5°C level, the UN report warned, tens of millions more people could be exposed to life-threatening heat waves and water shortages, and the world's coral reefs could disappear almost entirely.

The National Academies panel recommended a dual strategy. The US could set up programmes to start testing and deploying carbon removal methods that look ready to go, such as negative emissions biomass plants, new forest management techniques or carbon farming programmes.

At the same time, federal agencies would need to fund research into early-stage carbon removal techniques, to explore whether they may one day be ready for widespread use.

For instance, scientists have long known that certain minerals, like peridotite, can bind with carbon dioxide in the air and essentially convert the gas into solid rock. Researchers in Oman have been exploring the potential to use the country's vast mineral deposits for carbon removal, but there are still major questions about whether this can be done feasibly on a large scale.

In its report, the panel laid out a detailed research agenda that could ultimately cost billions of dollars. But given that carbon removal could "solve a substantial fraction of the climate problem", the report said, those costs are modest. For comparison, the federal government spent US\$22 billion (RM91.62 billion) on renewable energy research between 1978 and 2013. NYT

To meet the climate goals laid out under the Paris Agreement, humanity may have to start removing around 10 billion tonnes of carbon dioxide from the air each year by mid-century, in addition to reducing industrial emissions...

LAMPIRAN 21
BERITA HARIAN (PENDIDIKAN): MUKA SURAT 21
TARIKH: 27 OKTOBER 2018 (SABTU)

UniMAP komited laksana amalan lestari

Galak warga
kampus kitar
semula, kempen
larangan guna
polisterin, straw

Oleh Muhammad
Mustakim Ramli
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Arau

Universiti Malaysia Perlis (UniMAP) terus komited dalam usaha mewujudkan persekitaran pembelajaran yang sihat dan kondusif melalui pelaksanaan amalan lestari membabitkan warga kampus.

Melalui usaha yang dimulakan sekitar 10 tahun lalu itu, UniMAP memberi penekanan kepada bebe-

rapa aspek utama iaitu menghidupkan kawasan kampus, menjimatkan sumber tenaga, menggalakkan amalan kitar semula dan memupuk kesedaran umum mengenai kepentingan menjaga alam sekitar.

Terbaru, UniMAP mengambil langkah mengaharamkan penggunaan bekas makanan polisterin dan straw plastik di seluruh kampus dan mengenakan denda bagi kesalahan berkenaan.

Denda dikenakan mulai 1 Januari

Prof Datin Dr Zuraidah Mohd Zin yang mewakili Pasukan Kampus Lestari UniMAP, berkata kempen larangan penggunaan polisterin sudah lama dilakukan dan tindakan denda akan dikenakan pada individu yang ingkar mulai 1 Januari depan selepas mendapat keputusan Lembaga Pengarah Universiti (LPU).

"Denda ditetapkan ialah RM300 tetapi belum diputuskan adakah

denda dikenakan kepada penjual sahaja atau pembeli turut dikenakan denda.

"Ini sebahagian daripada usaha kita untuk melestarikan kampus. Kita akui sebelum ini ada kekangan kerana masih ada segelintir belum memahaminya. Saya yakin menerusi kempen berterusan, lama-kelamaan semua pihak akan memahami kepentingan usaha kita ini," katanya.

Beliau berkata, UniMAP juga beruntung kerana mendapat sokongan daripada Raja Muda Perlis, Tuanku Syed Faizuddin Putra Jamalullail iaitu Canselor UniMAP dalam usaha menjayakan agenda kampus lestari ini.

"Langkah beberapa kerajaan negeri memberi penumpuan terhadap dasar pengaharaman penggunaan polisterin dan beg plastik pakai-buang di negeri masing-masing sebelum ini juga memudahkan warga kampus memahami lebih jelas usaha yang dilakukan pi-



UniMAP tidak lagi membenarkan penggunaan polisterin dan straw di kampus UniMAP Pauh, Arau.

hak universiti.

Hasrat kita dalam mendidik warga kampus dan pihak yang berurusan dengan UniMAP nampaknya sudah membuahkan hasil, di mana jumlah penggunaan polisterin sudah berkurangan.

"Ini dapat dilihat pada Majlis Konvokesyen tahun lalu iaitu daripada lebih 10 pengusaha makanan hanya dua sahaja masih menggunakan polisterin, itu pun kerana mereka peniaga luar. Bagi peniaga di dalam kampus, mereka

tidak lagi menggunakan bahan plastik berkenaan.

Malah, ada juga pengusaha kafe di dalam kampus memberi diskaun 20 sen kepada pelanggan yang membeli makanan secara bungkus dengan membawa bekas sendiri," katanya.

Beliau berkata, diharapkan kejayaan konsep kampus lestari itu menjadi titik tolak memupuk kesedaran umum dalam kalangan masyarakat mengenai kepentingan menjaga alam sekitar.

LAMPIRAN 22
THE STAR (FOREIGN NEWS): MUKA SURAT 11
TARIKH: 29 OKTOBER 2018 (ISNIN)

Israel startup rolls out solar panels for smart electronics

A STARTUP in Israel is implanting tiny solar panels on electronic devices that allows the devices to sustainably generate their own power, the latest sign that falling costs are pushing renewable energy technologies deeper into everyday use.

Closely held 3GSolar Photovoltaics Ltd was founded in 2010 and is based in Jerusalem. It recently started supplying electronics manufacturers in Europe, China and Israel and plans to build a factory to produce millions of its miniature solar cells by 2020.

"Our cell is made specially for

indoor light and low light, it's not a typical silicon solar panel that works outside," said Barry Breen, chief executive officer, in a phone interview.

"It uses a kind of dye made from organic compounds that we make in the lab to generate electricity," he adds.

The company is targeting smart home devices, from sensors that transmit information about light and humidity to thermostats that regulate heating and air conditioning. Buildings are increasingly becoming digitised to increase energy efficiency. The number of

Internet-connected devices is expected to grow 12% annually to 125 billion in 2030, according to forecasts from IHS Markit Ltd.

Once considered an expensive form of renewable generation, costs for solar have plummeted on the back of Chinese mass production of equipment. The innovations by 3GSolar are another indication that the technology is becoming increasingly affordable.

Adding one of its cells to a device is expected to raise the product's overall cost by an average of US\$1, Breen said.

Many smart-home devices run

on batteries that need replacing every year or so. 3GSolar's cells would last the lifetime of the product, which is estimated to be around 10 to 15 years, Breen said.

His company is also targeting wearable electronics such as smart watches as well as cargo tracking. Eventually, Breen also plans to make a larger version of his solar panel that can replace glass windows on buildings.

"They're semi-transparent and could be used to generate power for the building. You'd sell the excess to the grid," he said. "This isn't in the business plan now, but

it's a future vision."

Now, the focus is on building a production line in Israel, where 3GSolar currently has a pilot project. The company has raised US\$9m to-date and is looking for another US\$7.5m to fund the expansion.

In 2020, they're targeting production of 36 million cells.

"We're preparing for more customers and more products," Breen said. "When you get a large order from one of the big electronics manufacturers, you have to be ready to scale up by 10 times." — Bloomberg

LAMPIRAN 23
THE STAR (FOREIGN NEWS): MUKA SURAT 13
TARIKH: 29 OKTOBER 2018 (ISNIN)

Robots to make robots at ABB's new factory in China

Swiss group to spend US\$150mil on new Shanghai site

ZURICH: Robots will make robots at a new ABB factory in China, which the Swiss engineering group said it planned to build for US\$150mil in Shanghai as it defends its place as the country's largest maker of industrial robots.

The factory, located near ABB's China robotics campus, is due to be operating by the end of 2020 and will produce robots for China as well as for export elsewhere in Asia. China is ABB's No. 2 market after the United States.

"Shanghai has become a vital centre for advanced technology leadership - for ABB and the world," ABB chief executive Ulrich Spiesshofer said in a statement announcing the project.

With the expansion, ABB is banking on Chinese robots sales defying concerns over trade tensions with the United States that some fear could dent demand for electronics, auto parts and other items that require automated manufacturing and robots.

China is expanding its robot workforce, as wages for human workers there rise and the country seeks to compete with lower-cost countries via greater automation.

In 2017, one of every three robots sold in the world went to China, which purchased nearly 138,000 units, ABB said.

ABB's new 75,000-sq-ft factory would use software meant to allow people and robots to work safely in close proximity, the company



High-tech: Humanoid robot YuMi conducts the Lucca Philharmonic Orchestra at the Verdi Theatre in Pisa, Italy. ABB says its YuMi robots will be deployed on many of the small parts assembly tasks needed to manufacture its robot. — Reuters

said, adding its YuMi robots - designed to work side-by-side with people - would also be deployed on many of the small parts assembly tasks needed to manufacture an ABB robot.

Rival Kuka, taken over in 2016 by China's Midea two years ago, has also been expanding in the country, including by building a robot park in Shunde near Hong Kong.

ABB, whose industrial robots are used, among other things, to build automobiles as well as to assemble electronic devices, would build robots for numerous industries at the Shanghai factory, a spokesman said.

It did not give a new employee count for the factory, but said it would boost robotics employment that now sits at more than 2,000 ABB workers in China. — Reuters

LAMPIRAN 24

THE STAR (WORLD): MUKA SURAT 29

TARIKH: 28 OKTOBER 2018 (AHAD)

Typhoon Yutu with 245kph winds heading for Philippines

MANILA: A powerful typhoon is barrelling towards the northern Philippines, days before millions of Filipinos were due to visit cemeteries in an annual tradition to pay respect to the dead.

Typhoon Yutu was packing maximum winds of 200kph and gusts of up to 245kph as it neared the Philippines north-eastern coast, the weather bureau said.

It was moving west at a speed of 20kph and expected to make land-fall over the border of the northern provinces of Cagayan and Isabela by Tuesday, the bureau added.

Yutu is expected to bring moderate to heavy rains and strong to very strong winds over the northern region of Luzon from Monday evening, the bureau said, adding that sea travel will be risky.

The typhoon comes as Filipinos prepared to honour their dead during All Saints Day and All Souls Day on Nov 1 and Nov 2.

Some Filipinos visit cemeteries as early as Oct 31. Authorities urged the public to visit cemeteries earlier, while emergency teams have been placed on alert.

In September, more than 100 people were killed in landslides, floods and accidents caused by Typhoon Mangkhut, the strongest cyclone to hit the Philippines this year. — dpa

LAMPIRAN 25
NEW STRAITS TIMES (WORLD): MUKA SURAT 61
TARIKH: 27 OKTOBER 2018 (SABTU)

TOURIST HOTSPOT

Strong 6.8 magnitude quake strikes off Greece

ATHENS: A powerful 6.8-magnitude earthquake struck off Greece yesterday and was felt strongly in the tourist hotspot island of Zante.

Electricity in the main town, also called Zante, was down while the fire service reported damage to the road network caused by landslides.

It hit off the southern part of the island, also known as Zakynthos, in the Ionian Sea at 1.50am, according to the US Geological Survey (USGS).

"There has been no damage to houses, according to the first reports," a spokesman for the fire service said.

A 12th-century Byzantine monument on a small island near Zante has been severely damaged. The earthquake was also felt on mainland Greece, including in the western town of Pyrgos.

USGS said the quake, which struck at a depth of 16.6km, was preceded by a shake of 5.0 and followed by a series of smaller aftershocks. It said there was a low likelihood of casualties.

The Athens earthquake observatory said the tremor was felt strongly in Zante.

Greece lies on major fault lines and is regularly hit by earthquakes, but they rarely cause casualties.

However, in July last year a magnitude 6.7 earthquake killed two people on the island of Kos in the Aegean sea, causing significant damage.

Zante island experienced a major earthquake in 1953 of 6.4, killing hundreds of victims and injuring thousands, leaving the island in ruins. **AFP**