

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

Bil	Berita	Media	Capaian Berita Penuh
1.	<p><a href="#"><u>Johor rejects proposals from Chinese companies to be set up waste recycling centres</u></a></p> <p>The government has introduced new sets of Standard Operating Procedures (SOP) and regulations for the application of solid waste import licenses and revoked the 114 existing licenses with immediate effect, said Energy, Technology, Science, Climate Change and Environment Minister Yeo Bee Yin earlier in the week.</p>	Edge Prop	Klik pada tajuk berita
2.	<p><a href="#"><u>Angel investors' reboot after string of financial failures</u></a></p> <p>The government is reorganising investment funds set up with the aim of boosting the modern economy, following their sub-par performance, The Star reports. Many of these funds are now the purview of the Energy, Science, Technology, Environment and Climate Change Minister Yeo Bee Yin.</p>	The Malaysian Insight	Klik pada tajuk berita
3.	<p><a href="#"><u>Non-performing funds to be moved out of MOF – report</u></a></p> <p>According to the report, the Pakatan Harapan government has placed funds such as Mavcap and those named earlier under the Energy, Science, Technology, Environment and Climate Change Ministry, led by Yeo Bee Yin.</p>	Malaysia Kini	Klik pada tajuk berita
4.	<p><a href="#"><u>Cradle Fund urges Putrajaya to develop start-up ecosystem</u></a></p> <p>“Cradle Fund as an organisation has been prepared for the challenges of reduced allocations from the government. So, in that sense, we are ready. If it means less funding, we will still try and see whether we can deliver the same amount of output. I think it can still be done,” he said. “The council also made it very clear they are not pulling out from the [start-up] space.</p>	The Edge Market	Klik pada tajuk berita

## TEMPATAN

Bil	Berita	Media	Capaian Berita Penuh
5.	<p><b><u>Minimumkan impak gas rumah hijau</u></b></p> <p>Yale Centre for Environmental Law and Policy meletakkan Malaysia di kedudukan ke- 75 daripada 178 negara dalam Indeks Alam Sekitar (EPI) 2018 baru-baru ini. Skor yang diberikan adalah 59.22 daripada 100 mata keseluruhan.</p>	KOSMO	Rujuk lampiran 1
6.	<p><b><u>Potensi, risiko teknologi rantai blok</u></b></p> <p>Pusat Kajian Pengawalseliaan Universiti Malaya (UMCoRS) di bawah Fakulti Undang-Undang dengan kerjasama Quanta RegTech Capital (QRC) Group Plc., menganjurkan Forum Laporan Pengawalseliaan Blockchain di Hotel Renaissance, Kuala Lumpur baru-baru ini.</p>	KOSMO	Rujuk lampiran 2
7.	<p><b><u>Understanding electricity charges</u></b></p> <p>There may be those who are still unclear or do not understand what are tariff, tariff rate adjustment, rebate and surcharge, as well as how these are related to the electric bill.</p>	New Straits Times	Rujuk lampiran 3
8.	<p><b><u>Jungle adventure</u></b></p> <p>The book's protagonist is a determined journalist obsessed with uncovering the secrets of the unexplored saucer-like summit in the middle of the famous real-life Maliau Basin Conservation Area (MBCA), also known as Sabah's Lost World.</p>	The Star	Rujuk lampiran 4
9.	<p><b><u>Legal rights for intelligent robots?</u></b></p> <p>CURRENTLY, intelligent robots face a public acceptance issue as some people consider them as job thieves. However, what makes it worse is the action of irresponsible individuals who vandalise the robots and leave them broken.</p>	New Straits Times	Klik pada tajuk berita
10.	<p><b><u>IT experts and educators divided on tech in schools</u></b></p> <p>Kamarozaman added that technology was constantly changing and evolving, so students should be able to adapt and be exposed to the field in a professional manner. He said that currently, Form Four students have a science and</p>	The Star	Klik pada tajuk berita

	computer subject, but some schools could not teach it because they did not have the facilities for it.		
11.	<p><b><u>Robotik asuh minat pelajar bidang automasi, robotik</u></b></p> <p>Majlis Amanah Rakyat (MARA) akan mempersiapkan semua Institut Pendidikan MARA (IPMa) untuk diperkasakan menerusi pembelajaran berteraskan teknologi tinggi supaya seiring dengan kehendak industri bagi mendepani cabaran Industri 4.0.</p>	Berita Harian	Rujuk lampiran 5
12.	<p><b><u>Lorong jadi mangsa ‘sampah terbang’</u></b></p> <p>Alam Flora Sdn. Bhd. (Alam Flora) mengenal pasti 12 kawasan yang mengalami masalah ‘sampah terbang’ di sekitar ibu kota akibat pembuangan sampah dari unit kediaman bertingkat.</p>	Utusan Malaysia	Klik pada tajuk berita
13.	<p><b><u>Sampah haram ganggu laluan</u></b></p> <p>Tindakan segelintir pihak yang membuang sampah di bahu jalan di Jalan Tok Empat Yusof dan Lorong Pasir Tuntong (PT) 5 menimbulkan rungutan penduduk setempat.</p>	Sinar Harian	Rujuk lampiran 6
14.	<p><b><u>Neverending ‘flying rubbish’ problem</u></b></p> <p>“This area is a hotspot for ‘flying rubbish’, where foreign workers fling rubbish out of the shoplots they live or work in,” said Mohd Zain during a site visit with Kuala Lumpur City Hall (DBKL) and Solid Waste and Public Cleansing Management Corporation (SWCorp) officers.</p>	The Star	Klik pada tajuk berita
15.	<p><b><u>TPM lancarkan Xplore X7, telefon satelit android pertama di dunia</u></b></p> <p>Timbalan Perdana Menteri, Datuk Seri Dr. Wan Azizah Wan Ismail hari ini melancarkan telefon satelit pintar yang diintegrasikan platform Android pertama di dunia, Xplore X7. Telefon yang dibangunkan oleh syarikat Malaysia, AdvanceTC Group Sdn. Bhd.</p>	Utusan Malaysia	Klik pada tajuk berita

16.	<p><a href="#"><u>ASEP, didik generasi muda peka terhadap alam sekitar</u></a></p> <p>Buat julung kalinya, Yayasan Alam Sekitar AEON Jepun menganjurkan Asian Students Environmental Platform (ASEP) ke-7 2018 di negara ini, sebagai usaha mendidik generasi muda lebih peka terhadap alam sekitar.</p>	Berita Harian	Klik pada tajuk berita
17.	<p><a href="#"><u>Lapan lagi kilang plastik ditutup</u></a></p> <p>“Baki 18 buah kilang haram lagi akan diserbu dan ditutup dalam masa terdekat kerana langkah itu memerlukan koordinasi daripada pelbagai pihak. Saya menjangkakan dalam tempoh sebulan, kesemua kilang terbabit akan dapat ditutup,” katanya kepada pemberita selepas operasi di lapan buah kilang terbabit semalam.</p>	KOSMO	Rujuk lampiran 7 atau klik pada tajuk berita
18.	<p><a href="#"><u>Let's have a tech stream in schools, says Gobind</u></a></p> <p>“We need to teach the schoolchildren technology-related subjects through the creation of a tech stream in schools. “I will discuss this with the Education Minister (Dr Maszlee Malik),” Gobind told <i>The Star</i> in a recent interview.</p>	The Star	Rujuk lampiran 8
19.	<p><a href="#"><u>TNB to enter broadband fray</u></a></p> <p>Telekom Malaysia (TM) may soon face stiff competition from Tenaga Nasional Berhad (TNB) in the broadband market, Communications and Multimedia Minister Gobind Singh Deo said today.</p>	The Sun Daily	Klik pada tajuk berita
20.	<p><a href="#"><u>RAM Ratings sees incentive-based rule positive for NUR Power</u></a></p> <p>It said on Thursday this framework enables NUR Power to pass through to its customers all cost fluctuations stemming from gas prices and energy supply rates for electricity purchases from Tenaga, via the imbalance cost-pass-through mechanism.</p>	The Star	Klik pada tajuk berita

## ANTARABANGSA

Bil	Berita	Media	Capaian Berita Penuh
21.	<p><b><u>Trash Hero wira pengutip sampah Bali</u></b></p> <p>Lima tahun lalu, pemandu pelancong, Wayan Aksara menyedari bahawa semakin ramai pengunjung yang merungut terhadap lambakan sampah sarap yang mencemari pemandangan pantai di kepulauan Bali, Indonesia.</p>	KOSMO	Klik pada tajuk berita
22.	<p><b><u>Researchers develop 'electronic skin'</u></b></p> <p>When Gyorgy Levay lost parts of all four extremities, including most of his left arm, to meningitis in 2010, he resolved to make the best of a bad situation.</p>	The Star	Rujuk lampiran 9
23.	<p><b><u>Supermarket forced into backflip over plastic bags</u></b></p> <p>A leading Australian supermarket was yesterday forced into a backflip after facing a barrage of criticism for reneging on plans to phase out free plastic bags.</p>	Malay Mail	Rujuk lampiran 10
24.	<p><b><u>Myanmar endures worst of Mekong monsoon floods</u></b></p> <p>Monsoon rains have pummelled the Mekong region in recent days with Myanmar bearing the brunt of flooding that has forced 150,000 to flee and threatens to destroy levees shielding thousands of homes.</p>	The Star	Rujuk lampiran 11
25.	<p><b><u>N. Korea says heatwave causing heavy crop damage</u></b></p> <p>North Korea warned that an “unprecedented” heatwave has caused heavy damage to crops as it urged citizens to “join the struggle” to prevent drought-like conditions food production in the impoverished country.</p>	The Star	Rujuk lampiran 12
26.	<p><b><u>Extreme conditions expected to stoke California blazes</u></b></p> <p>Extreme weather conditions are expected to return and could stoke wildfires in California</p>	The Star	Rujuk lampiran 13

	where thousands of weary firefighters are battling the destructive and deadly blazes.		
27.	<a href="#"><u>Cybersecurity pact sought</u></a> Southeast Asian nations are set to announce a deal with China on a working text for negotiations over a code of conduct to ease tension in the South China Sea at a meeting that began today.	The Sun Daily	Klik pada tajuk berita
28.	<a href="#"><u>South-East Asia seek cybersecurity deal with Russia after series of hacks</u></a> South-East Asian nations hope to strike a joint agreement on cybersecurity in coming days with Russia, accused by the United States of meddling in its elections, after a series of high-profile hacks in the region.	The Star	Klik pada tajuk berita
29.	<a href="#"><u>Southeast Asia seeks Russia cybersecurity pact, S.China Sea code of conduct</u></a> Southeast Asian nations hope to strike a cybersecurity agreement soon with Russia, which the United States has accused of election meddling, after a series of high-profile hacks in the region, according to a draft document seen on Thursday.	New Straits Times	Klik pada tajuk berita
30.	<a href="#"><u>Garbage has value, so why are we throwing it away?</u></a> Hidden behind undulating sand dunes and fog rolling off the North Sea, the sprawling, gated campus of the Energy Research Center of the Netherlands (ECN) sits on a spit of land about an hour north of Amsterdam.	Washington Post	Klik pada tajuk berita
31.	<a href="#"><u>Buried UK government report finds fracking increases air pollution</u></a> A UK government report concluding that shale gas extraction increases air pollution was left unpublished for three years and only released four days after ministers approved fracking in Lancashire, it has emerged.	The Guardian	Klik pada tajuk berita

32.	<p><b><u><a href="#">Elon Musk defends plans to build a community on Mars after downbeat NASA report</a></u></b></p> <p>A new report sponsored by NASA has put Elon Musk on the defensive about his plans for building a community on Mars. Now, the billionaire tech titan and the leading government space agency are at odds on social media about how possible it is for Mars to be habitable by humans in the near future.</p>	CNBC News	Klik pada tajuk berita
33.	<p><b><u><a href="#">Green factories can give garment exporters another edge: BKMEA</a></u></b></p> <p>Green industrialisation can play a vital role in garment exporters' competitiveness as the buyers are progressively being drawn to green factories for their commitment towards the environment, a recent study found.</p>	The Daily Star	Klik pada tajuk berita
34.	<p><b><u><a href="#">Machine Learning and AI Will Disrupt All Careers According To Dell's Roese</a></u></b></p> <p>Machine learning (ML) and Artificial Intelligence (AI) represent one of the biggest disruptions to your career according to John Roese, CTO of Dell Technologies. During the Dell Technology World keynote, Roese made this bold but accurate statement.</p>	Forbes	Klik pada tajuk berita
35.	<p><b><u><a href="#">Artificial Intelligence in Singapore: pervasive, powerful and present</a></u></b></p> <p>According to Seagate Technology's latest survey of IT professionals across the Asia-Pacific, AI adoption in Singapore is already so robust that at least six in 10 organisations have already implemented AI in one form or another within areas such as information technology (60 per cent), supply chain and logistics (48 per cent), customer support (49 per cent) as well as research and development (41 per cent).</p>	Business Times	Klik pada tajuk berita
36.	<p><b><u><a href="#">The approach to high-tech innovation</a></u></b></p> <p>There are those who do not hesitate a second and embrace a technological innovation as soon as it is available — come what may. They boldly go for it, with the idea that you simply cannot go wrong if you swim with the powerful tide of</p>	The Jordan Times	Klik pada tajuk berita

	technology. This way they are certain to stay ahead of the pack.		
37.	<p><a href="#"><u>Community Choice Is Driving California's Precocious Energy Revolution</u></a></p> <p>California is on track to meet its clean-energy goals a decade early thanks in part to communities demanding and delivering renewable energy faster and cheaper than utilities can, according to a report released this morning.</p>	Forbes	Klik pada tajuk berita
38.	<p><a href="#"><u>TransCanada sheds renewable energy portfolio as pipeline giants seek to cut debt loads</u></a></p> <p>Canada's pipeline giants are gradually trimming their stakes in renewable energy assets, reversing a bullish trend among midstream operators amid soaring valuations for clean energy developments.</p>	Financial Post	Klik pada tajuk berita



# Minimumkan impak gas rumah hijau



LAILI



MOHD. AZMAN

**B**ENCANA banjir dan kemarau berpanjangan yang berlaku di beberapa kawasan di seluruh dunia ketika ini dikaitkan dengan kesan pemanasan global.

Pemanasan global adalah fenomena gas rumah hijau iaitu karbon dioksida, karbon monoksida, kloroflorokarbon, metana serta nitrogen oksida yang memerangkap haba bumi daripada terbebas keluar ke angkasa.

Kumpulan gas itu membenarkan bahang matahari menembusinya tetapi menghalang pembebasan semula bahang bumi ke atmosfera.

Gas rumah hijau terbentuk akibat aktiviti harian manusia seperti menggunakan kenderaan bermotor, memusnahkan hutan, perindustrian, pertanian dan penternakan.

Aktivist alam sekitar, **Laili Basir** berkata, sesuatu perlu dilakukan dengan kadar segera, bagi mengurangkan impak pemanasan global kepada orang ramai.

Jelasnya, antara usaha yang boleh dilakukan ialah membuat kajian secara menyeluruh sebelum sesuatu pembangunan ekonomi dilakukan terutamanya membabitkan kawasan hutan.

"Saya berharap kerajaan pada hari ini dapat meminimumkan kemusnahan alam sekitar dalam setiap perancangan pembangunan ekonomi.

"Ia penting bagi mengimbangi antara pembangunan dan alam sekitar supaya tidak berlaku



PENGUNAAN kereta hibrid mampu mengurangkan impak pemanasan global pada masa depan. - Gambar hiasan

peningkatan gas rumah hijau secara drastik," katanya ketika dihubungi *Kosmo!* baru-baru ini.

Yale Centre for Environmental Law and Policy meletakkan Malaysia di kedudukan ke-75 daripada 178 negara dalam Indeks Alam Sekitar (EPI) 2018 baru-baru ini. Skor yang diberikan adalah 59.22 daripada 100 mata keseluruhan.

Kedudukan terbaharu itu menunjukkan penurunan EPI negara berbanding tahun 2016 iaitu di posisi 63 dengan skor sebanyak 74.23.

EPI adalah sistem mengukur prestasi sesebuah negara terhadap alam sekitar dalam usaha melindungi ekosistem dan kesihatan manusia.

Tambah membimbangkan, kajian Bank Dunia menunjukkan pokok-pokok di negara ini ditebang pada kadar empat kali melebihi tahap mampan yang

dispersetujui organisasi global seperti Pertubuhan Bangsa-Bangsa Bersatu.

## Ketinggalan

Situasi itu jelas menunjukkan Malaysia masih ketinggalan dalam membantu usaha mengurangkan pembebasan gas rumah hijau.

Apakah langkah dan tindakan yang boleh dimainkan oleh kerajaan serta masyarakat dalam mengurangkan pembebasan gas rumah hijau?

Menurut Laili, sukar untuk menghalang pembangunan kerana ia penting buat negara seiring dengan perubahan demografi.

Jelasnya, rakyat di negara ini semakin bertambah setiap tahun, sekali gus memberi tekanan kepada sumber semula jadi seperti pokok, tanah dan air bersih.

"Beberapa dekad akan datang, rakyat Malaysia dijangka mencecah 40 juta. Ini menuntut lebih banyak kawasan hijau perlu dikorbankan.

"Ia bagi memenuhi keperluan masyarakat seperti penempatan, bekalan makanan, tenaga dan sumber kayu," katanya.

**Ketua Pegawai Eksekutif Kumpulan GreenTech Malaysia, Dr. Mohd. Azman Zainul Abidin** berkata, sudah tiba masanya kerajaan memberi tumpuan kepada penggunaan teknologi hijau.

Ujarnya, penggunaan teknologi hijau dalam negara perlu ditingkatkan bagi memelihara alam sekitar dan

SEMAKIN banyak hutan terpaksa dikorbankan bagi pembangunan ekonomi. - Gambar hiasan

mengawal kesan negatif aktiviti manusia.

"Teknologi hijau seperti kenderaan hibrid, bangunan hijau dan bahan bakar alternatif perlu ditingkatkan dalam kalangan masyarakat.

"Bagi menjayakan usaha tersebut, kerajaan boleh memberikan inisiatif dan galakkan kepada penggiat industri serta orang ramai yang menggunakan teknologi hijau," katanya.

Mohd. Azman menambah, tumpuan juga perlu diberikan bagi meningkatkan janaan tenaga boleh diperbaharui seperti cahaya matahari, angin, hujan dan geoterma.

Jelasnya, ia penting bagi mengurangkan kebergantungan terhadap loji jana kuasa arang batu yang meninggalkan kesan serius terhadap pelepasan gas rumah hijau.

Arang batu masih merupakan bahan api terbesar dalam penjanaan elektrik di Semenanjung iaitu 51 peratus, disusuli gas asli, termasuk gas asli cecair (45 peratus) dan tenaga hidro (4 peratus).

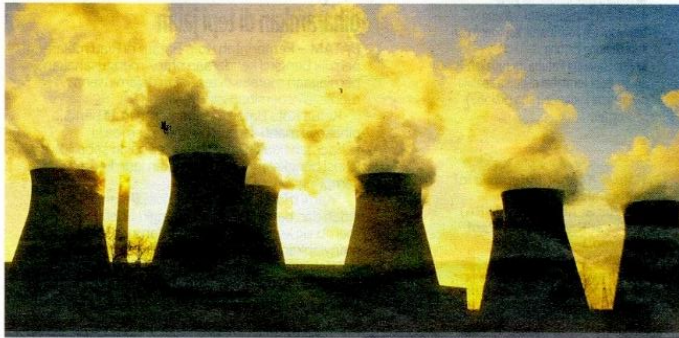
Menurut Mohd. Azman, orang ramai harus memainkan peranan dan tanggungjawab bagi mengurangkan pembebasan gas rumah hijau dalam udara.

Bellau memberitahu, peranan yang boleh dimainkan adalah mempraktikkan amalan kitar semula, menjimatkan penggunaan tenaga elektrik dan air serta menyokong pembelian produk hijau.

"Amalan hijau dalam kalangan masyarakat masih rendah kerana kurangnya kesedaran mengenai terhadap alam sekitar.

"Data SW Corp., pada tahun lalu menunjukkan hanya 17.5 peratus masyarakat di negara ini mengitar semula. Ia masih rendah berbanding Jepun dan Sweden," terangnya.

AKTIVITI perindustrian yang pesat di seluruh dunia menyumbang kepada peningkatan gas rumah hijau dalam udara. - Gambar hiasan





**LAMPIRAN 2**  
**KOSMO (VARIA): MUKA SURAT 27**  
**TARIKH: 3 OGOS 2018**

# Potensi, risiko teknologi rantaian blok

PUSAT Kajian Pengawalseliaan Universiti Malaya (UMCoRS) di bawah Fakulti Undang-Undang dengan kerjasama Quanta RegTech Capital (QRC) Group Plc., menganjurkan Forum Laporan Pengawalseliaan Blockchain di Hotel Renaissance, Kuala Lumpur baru-baru ini.

Forum selama sehari itu diadakan bagi merungkai persoalan mengenai kewajaran mengawal selia mata wang kripto di negara ini.

Mata wang kripto ialah aset digital yang direka untuk berfungsi sebagai medium pertukaran menggunakan kriptografi.

Teknologi itu mula dicadangkan sejak tahun 2008 menggunakan nama samaran Satoshi Nakamoto sebagai orang kuat dalam mata wang kripto seperti Bitcoin.

Bagaimanapun, jika tiada kawalan atau undang-undang khusus bagi pengguna rantaian blok, ia dikhuatiri boleh membawa bahaya kepada individu, masyarakat dan negara.

Pengarah Projek Laporan Kajian



**NUR HUSNA (kanan) dan Abdul Rahim (empat dari kanan) bergambar bersama buku Laporan Pengawalseliaan Blockchain di Hotel Renaissance, Kuala Lumpur baru-baru ini.**

Perundangan Berkaitan Rantaian Blok dari Fakulti Undang-Undang, Universiti Malaya, Nur Husna Zakaria berkata, rantai blok bukan sahaja digunakan dalam mata wang kripto tetapi dalam kehidupan harian.

Katanya, teknologi itu berpotensi untuk meningkatkan keselamatan komunikasi, transaksi dan rekod awam bagi mengelakkan penipuan.

"Justeru, melalui laporan ini, prospek penggunaan rantaian blok

akan menjadi lebih luas.

"Laporan ini bukanlah jawapan kepada tindakan yang boleh diambil oleh undang-undang negara, namun ia boleh dijadikan sebagai rujukan," katanya ketika ditemu bual *Kosmo!* pada Majlis Pelancaran Laporan Kajian Perundangan Berkaitan Rantaian Blok baru-baru ini.

Majlis itu dirasmikan oleh Naib Canselor Universiti Malaya, Datuk. Ir. Dr. Abdul Rahim Hashim sambil diiringi oleh Pengarah QRC, Cris D.

Tran dan Dekan Fakulti Undang-Undang Universiti Malaya, Prof. Dr. Johan Shamsuddin.

Laporan itu merupakan yang pertama di rantau ini dalam kajian berkaitan rantai blok dari sudut perundangan.

Menurut Nur Husna, kajian yang dilakukan bersama empat lagi rakannya bermula Julai tahun lalu itu bermatlamat memberi pemahaman kepada masyarakat mengenai potensi dan risiko rantaian blok.

Laporan itu akan menjadi panduan bermanfaat kepada pihak berkepentingan yang relevan dalam industri rantaian blok.

"Walaupun sebelum ini Bank Negara Malaysia telah mengeluarkan garis panduan berkaitan pengubahan wang haram, masih belum ada undang-undang berkaitan rantaian blok.

"Kehadiran rantaian blok ini akan menamatkan sistem berpusat dan amat menguntungkan jika diadaptasi dengan baik," katanya.

REBATE AND SURCHARGE

# UNDERSTANDING ELECTRICITY CHARGES

Tariff rate for every consumer category will remain unchanged till December 2020

KUALA LUMPUR

**T**HERE may be those who are still unclear or do not understand what are tariff, tariff rate adjustment, rebate and surcharge, as well as how these are related to the electricity bill.

Major questions on electricity tariffs are listed below:

**Question: Is it true that electricity tariffs were increased from last month?**

**Answer:** Not true. The average base tariff will remain at 39.45 sen/kWh until December 2020.

Accordingly, the tariff rate for every consumer category, whether residential, commercial or industrial, will remain unchanged until December 2020.

**Q: How are rebates and tariff rate adjustment connected?**

**A:** During the half-yearly review of the cost of generating electricity, the actual costs are studied, compared with the base tariff costs set. When fuel costs fall, the cost reduction will be passed on to the consumers in the form of an imbalance cost pass-through (ICPT) rebate.

However, when fuel costs es-

calate, the additional cost needs to be passed on to the consumers in the form of an ICPT surcharge.

**Q: How many times have the people in Peninsular Malaysia enjoyed rebates?**

**A:** Rebates amounting to RM6.3 billion have been given during the first seven ICPT cycles (March 2015 to June).

**Q: Why did the Energy Commission announce a surcharge (for July to December)? Why are consumers no longer enjoying rebates?**

**A:** Since July last year, the power generation and fuel costs have exceeded the cost approved by the government under the base tariffs. This cost rise cannot be fully absorbed (in the form of re-

bates). The government has used funds from the Electricity Industry Fund (EIF) to offset part of the cost for the period.

However, the government can only spend RM114 million of the EIF's monies to ensure the 7.1 million residential users (81.7 per cent of Tenaga Nasional Bhd's customers) do not have to pay the surcharge. Hence, an ICPT surcharge of 1.35 sen/kWh is imposed on the industrial and commercial categories.

**Q: What are the proactive and reactive measures to ensure electricity is generated at the most competitive prices?**

**A:** To increase the efficiency of generation using coal, all power plants built from 2011 use ultra super critical technology (USC).

USC coal-fired power generation is more efficient and capable of producing more energy using the same amount of coal. It also complies with the more stringent environmental standards.

Manjung 4 was the first coal-fired USC plant in Asean when it began operations in April 2015. In the future, more coal-fired power stations will be built that optimise the benefits from the latest technology.

The government has announced a review of independent power producer contracts and the award of power projects via open tender.

A study will also be conducted to develop an industry focusing on renewable energy with the aim of reducing dependence on imported fuels. **Bernama**



A veteran journalist draws on his experiences working alongside scientists and researchers to write a tale set in the wilds of Sabah.

By NASHIR MANSOR

VETERAN journalist Emin Madi's new book, *The Green Gold Of Borneo* (GGoB), is not only an adventure-packed "documentary fiction", but it also provides insight into Sabah's forest conservation efforts.

The book's protagonist is a determined journalist obsessed with uncovering the secrets of the unexplored saucer-like summit in the middle of the famous real-life Maliau Basin Conservation Area (MBCA), also known as Sabah's Lost World.

The fictional journalist doesn't heed a Murut shaman's advice and continues his digging only to encounter unusual happenings and strange events.

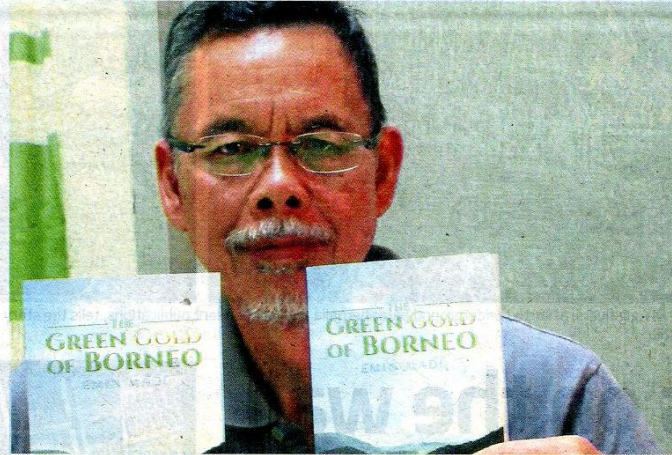
"In many ways, although the plot is mostly fictionalised, GGoB is all about the natural environment, particularly the fate of the last remaining undisturbed rainforest in Malaysia, and Sabah in particular.

"I came to realise that natural wonders, and in this case the totally protected forest in Sabah, are a very interesting topic for fiction," Emin, 69, says in a recent interview.

"I was very fortunate to have participated in many resource and wildlife surveys of Sabah's natural wonders so I thought I should write something more interesting than news reports, which is why I decided to do a documentary-adventure-fiction.

"It took me all of 2016 to complete the manuscript, after which my former colleague, Zahir Ahmad, edited the first copy

## Jungle adventure



Emin with his first book in English. Like his Malay language books, *The Green Gold Of Borneo* centres on Sabah's natural resources. — Bernama

before sending it to UK-based Austin Macauley Publishers," Emin says.

The Bernama freelance reporter and photographer's first foray into environmental reporting was in the 1980s when he participated in a scientific expedition into the now world-renowned Danum Valley Conservation Area in Lahad Datu, Sabah; the expedition involved local and foreign

researchers, including some from Britain's venerable Royal Society.

In 2013, Emin, who hails from Kampung Bayangan in Keningau, Sabah, spent 10 days in the deep jungle of the MBCA with local researchers who were carrying out a resources and wildlife survey.

"It was at Maliau Basin that I felt a deep urge to write an environmental-based story,

especially after some expedition participants related to me many mysterious events that took place in the area.

"So I got an idea to start writing GGoB using the MBCA as a central theme and also based on my own experiences working alongside scientists and researchers.

"From my observations, the findings from the field work are very important as they can be used to communicate facts about the stature of Sabah's protected forests.

"On top of that, I was also very motivated by the tremendous and commendable efforts undertaken by the Sabah Forestry Department with the strong support of the previous state government to protect the state's natural heritage.

"I hope the current government will have as strong a commitment to protect our pristine and undisturbed forest as well as to continue and encourage more research activities and international research collaborations," he says.

As of November 2016, Sabah's totally protected areas stood at more than 1.8 million hectares or 25.46% of the state's total land area.

In 1997, the Sabah State Assembly elevated the Maliau Basin Conservation Area into a Class 1 Protection Forest Reserve and increased its size from 39,000ha to 58,000ha to include the outer northern and eastern escarpments and Lake Linumunsut, the largest lake in Sabah.

According to historical records, the Maliau Basin was spotted in 1947, when a British pilot flying from the west coast of Sabah to Tawau in the east coast nearly crashed into the steep cliffs rising over 900m above the jungle floor.

Emin, a former press secretary in a Federal Ministry, has also authored two environmental-based fiction books in Malay. — Bernama



## Robofair asuh minat pelajar bidang automasi, robotik

**Bentong:** Majlis Amanah Rakyat (MARA) akan mempersiapkan semua Institut Pendidikan MARA (IPMa) untuk diperkasakan menerusi pembelajaran berteraskan teknologi tinggi supaya seiring dengan kehendak industri bagi mendepani cabaran Industri 4.0.

Antara usaha MARA ialah mengasuh minat pelajar dalam bidang automasi dan robotik yang menjadi antara teras Industri 4.0.

Bertepatan dengan usaha itu, Maktab Rendah Sains MARA (MRSM) sekali lagi mengadakan program RoboFair MRSM ke-14 yang diadakan di MRSM Bentong, Pahang, baru-baru ini.

Melalui program ini, pelajar diberi peluang meneroka dan melaksanakan projek kajian inovasi serta kreativiti. Potensi dan bakat pelajar dibangunkan serta dikembangkan secara terancang dan sistematik.

Ketua Pengarah MARA, Datuk Azhar Abdul Manaf, berkata pembangunan pendidikan yang kompetitif antara keutamaan dititikberatkan di dalam sistem pendidikan MARA dengan menyediakan pelajar pelbagai kemahiran teknikal supaya cemerlang dalam bidang diceburi, terutama dalam sains dan teknologi.

### **Kebilehpasaran graduan TVET meningkat**

Katanya, kadar kebolehpasaran graduan TVET iaitu pendidikan teknikal dan latihan vokasional meningkat dari 74.9 peratus pada 2013 kepada 91.4 peratus pada 2017.

"MARA mengambil inisiatif untuk fokus kepada TVET dengan mewujudkan program teknikal di MRSM Bentong iaitu salah satu cabang pendidikan teknikal dan latihan vokasional berkualiti yang diperkenalkan kepada pelajar Tingkatan Satu melalui subjek Sains Kejuruteraan.

"Melalui penubuhan MRSM Teknikal ini, bidang kejuruteraan menjadi pilihan utama pelajar supaya generasi muda dapat memenuhi keperluan kemahiran industri negara," katanya pada majlis penutupan Pertandingan RoboFair MRSM 2018 Ke-14, di sini, baru-baru ini.

Azhar berkata, sejak program ini diadakan, banyak anugerah dimerangi di pertandingan anjuran Institut Pengajian Tinggi tempatan dan juga peringkat antarabangsa. Antaranya pertandingan International Robot Olympiad (IRO), World Robot Olympiad (WRO), Infomatrix, Robot Pride dan lain-lain lagi.



**Pengarah Pendidikan Menengah MARA Kamaruzaman Jaffar (dua dari kanan)** merasmikan Pertandingan RoboFair MRSM 2018 Ke-14 di MRSM Bentong, Pahang, baru-baru ini.

Melalui penubuhan MRSM Teknikal ini, bidang kejuruteraan menjadi pilihan utama pelajar supaya generasi muda dapat memenuhi keperluan kemahiran industri negara"

**Azhar Abdul Manaf,**  
Ketua Pengarah MARA

"MRSM berpotensi untuk melahirkan pelajar yang kreatif, berdaya saing dan sentiasa memiliki daya cipta terhadap sesuatu.

"Program seperti ini turut membuka peluang kepada pelajar untuk mengembangkan bakat serta potensi diri dengan menyertai pertandingan berasaskan kreativiti di dalam sains dan teknologi.

"Potensi dan bakat pelajar dibangunkan dan dikembangkan secara terancang dan sistematik di mana pelajar akan menggunakan kreativiti, pengetahuan dan pelbagai kemahiran mereka cipta robot untuk menyelesaikan masalah

yang diberikan selaras dengan hasrat MARA.

"Saya berharap MRSM Bentong sebagai pusat pendidikan awal yang berteraskan kejuruteraan, dapat menganjurkan lebih banyak pertandingan seperti ini, sekali gus dapat menghasilkan lebih ramai pelajar yang mempunyai pemikiran kreatif dan kritis," katanya.

Pada Pertandingan RoboFair MRSM 2018 ke-14 ini, MRSM Kota Kinabalu mengungguli acara untuk juara keseluruhan, sekali gus menjuarai kategori kreatif manakala MRSM Kubang Pasu juara kategori Standard.



# Sampah haram ganggu laluan

*Dua port perlu dipantau dan tindakan tegas elak kejadian berulang*

ARZIANA MOHMAID  
AZAMAN

KAMPUNG PASIR  
TUNTONG



AMRAN



Antara lokasi pembuangan sampah haram di Jalan Tok Empat Yusof.

Tindakan segelintir pihak yang membuang sampah di bahu jalan di Jalan Tok Empat Yusof dan Lorong Pasir Tuntong (PT) 5 menimbulkan rungutan penduduk setempat.

Tinjauan Sinar Harian di Jalan Tok Empat Yusof mendapati, sampah itu bagaimanapun agak tersorok daripada pandangan orang ramai.

Meskipun tong sampah disediakan dan papan tanda larangan dipasang namun

kawasan itu berbau busuk seolah-olah tiada pemantauan.

Wakil penduduk, Amran Mohd Noor, 50, berkata, masalah itu sudah berlarutan malah membabitkan sampah pukal.

Menurutnya, penduduk mengadu sampah haram yang dibuang di tepi jalan sedangkan kawasan itu sudah dipasang papan tanda larangan.

"Saya pun hairan orang luar boleh buang sampah di kawasan ini. Ada yang bakar

sampah dalam tong sampah. Saya pun tak faham kenapa mereka buat demikian.

"Mungkin perangai kena ubah dan jangan buang sampah di kawasan itu lagi. Sebelum ini kami ada buat kerja pembersihan tapi keadaan masih sama," katanya.

Bekas ketua kampung itu turut memohon pihak berkuasa tempatan (PBT) memantau kawasan rizab jalan kereta api lama itu yang mungkin jauh daripada pan-

dangan orang ramai.

"Saya mohon PBT memantau kawasan ini dan melaksanakan kerja pembersihan bagi mengelakkan kejadian berulang."

"Kalau perlu bantuan ambil gambar individu yang buang sampah pun kami boleh usahakan sebab yang penting, kawasan ini jangan jadi port sampah haram lagi," katanya.

Katanya, satu lagi kawasan yang terjejas akibat pem-

buangan sampah haram berleluasa di Lorong PT 5 sehingga busuk dan mengundang anjing liar.

"Sedangkan ada tong sampah di Lorong PT 8 tapi individu yang tak bertanggungjawab ini buang sampah seperti tak takut kompaun."

"Perlu ada tindakan tegas terhadap pembuang sampah haram ini sebagai pengajaran sebab meskipun tidak lagi berkhidmat sebagai ketua

info

Wakil penduduk turut memohon tong sampah daripada PBT bagi menyelesaikan masalah

kampung, saya terpanggil untuk membantu menyelesaikan masalah ini," katanya.

Pihaknya turut memohon PBT menyumbangkan tong sampah untuk kegunaan penduduk kampung berikutan kutipan hanya dibuat di kawasan taman perumahan.

"Mungkin penyediaan lebih banyak tong sampah di lokasi yang sesuai dapat membantu mengurangkan isu pembuangan sampah haram khususnya di kampung."

"Perlu ada juga pihak yang turun padang dan meninjau kawasan yang menja- di port sampah haram supaya tindakan tegas diambil," katanya.



**LAMPIRAN 7**  
**KOSMO (NEGARA): MUKA SURAT 2**  
**TARIKH: 3 OGOS 2018**



WENG SAN (empat dari kiri) bersama pihak berkuasa MDKL melihat sisa plastik dalam serbuan di sebuah kilang haram di Banting, Kuala Langat semalam.



PASUKAN penguat kuasa melakukan pemeriksaan di sebuah kilang memproses sisa plastik haram di Jenjarom, Kuala Langat.



TIMBUNAN sisa plastik ditutup kain kanvas ketika serbuan dijalankan pihak berkuasa di sebuah kilang di Jenjarom, Kuala Langat.

MDKL ambil tindakan sita berjuta-juta tan sisa pepejal diimport dari seluruh dunia

## Lapan lagi kilang plastik ditutup

Oleh MOHD. HAFIZI AHMAD  
dan LUQMAN RIDHWAN MOHD. NOR

**KUALA LANGAT** – Majlis Daerah Kuala Langat (MDKL) semalam menutup lapan buah lagi kilang kitar semula plastik haram di daerah ini dan menyita berjuta-juta tan timbunan sisa pepejal itu yang diimport dari seluruh dunia.

Ahli Dewan Undangan Negeri Banting, Lau Weng San berkata, lapan kilang terbabit yang terletak di Banting, Jenjarom dan Teluk Panglima Garang di sini ditutup serta disita dalam operasi bermula pukul 10 pagi sehingga 5.30 petang semalam.

Menurutnya, operasi itu merupakan susulan daripada usaha kerajaan negeri yang bertegas mahu menutup kesemua 32 kilang plastik haram di Kuala Langat yang menyebabkan pencemaran alam sekitar kepada lebih 300,000 penduduk di situ.

"Pada 24 Julai lalu, MDKL dan

beberapa agensi melakukan serbuan ke atas enam buah kilang memproses sisa plastik haram. Operasi ke atas lapan premis haram hari ini (semalam) adalah susulan daripada serbuan minggu lalu itu.

"Baki 18 buah kilang haram lagi akan diserbui dan ditutup dalam masa terdekat kerana langkah itu memerlukan koordinasi daripada pelbagai pihak. Saya menjangkakan dalam tempoh sebulan, kesemua kilang terbabit akan dapat ditutup," katanya kepada pemberita selepas operasi di lapan buah kilang terbabit semalam.

Weng San memberitahu, dalam serbuan semalam, kebanyakan kilang tidak lagi menjalankan operasi memproses sisa plastik kerana takut penguatkuasaan yang dilakukan oleh MDKL.

"Memang ada beberapa kumpulan penduduk yang tidak berpuas hati dan mendakwa MDKL lambat mengambil tindakan na-



KERATAN Kosmo! semalam.

mun saya berharap mereka bersabar.

"Operasi ini melibatkan pelbagai agensi seperti Jabatan Imigresen, kastam, polis dan Tenaga Nasional Berhad," ujarnya.

Mengulas mengenai dakwaan terdapatnya kilang haram yang beroperasi pada waktu malam bagi mengelak dikesan pihak berkuasa, Weng San memaklumkan beliau mengetahui perkara itu dan telah meminta MDKL memantau perkara tersebut.

"Jika penduduk tahu mengenai

perkara ini, kita minta mereka laporkan terus kepada pihak berkuasa. Sekiranya boleh sertakan bersama video dan gambar yang berkaitan," ujarnya.

Tinjauan Kosmo! ketika operasi tersebut pula mendapati kesemua kilang haram yang ditutup tidak menjalankan aktiviti memproses sisa plastik pada waktu siang.

Sebahagian kilang yang diserbui dipercayai telah menamatkan operasi seminggu lalu berdasarkan keadaan premis yang tidak mempunyai kesan didiami pekerja dan hanya menyimpan stok sisa plastik lama.

Bagaimanapun, sebahagian pekerja kilang haram tersebut dipercayai telah melarikan diri ke ladang kelapa sawit sebaik sahaja menyedari kehadiran pihak berkuasa berdasarkan penemuan mi segera yang baru dimasak serta buah-buahan yang

mereka potong.

Sementara itu, Pengarah Jabatan Penguatkuasaan MDKL, Nordila Yasir berkata, seramai 12 warga Bangladesh dan Vietnam ditahan dalam operasi tersebut kerana menyalahgunakan permit pekerjaan.

Katanya, pelbagai barangan juga dirampas dan disita seperti Lori, alat penimbang, komputer, televisyen, kipas angin, peralatan membaiki mesin dan berjuta-juta tan sisa plastik.

Kosmo! semalam melaporkan penduduk mendakwa kilang-kilang memproses sisa plastik di Kuala Langat beroperasi seperti tidak putus stok sisa plastik walaupun Permit Lesen Import barang buangan itu sudah dihentikan kerajaan.

Difahamkan masih terdapat kira-kira 30 buah kilang beroperasi seperti biasa di daerah ini di sebalik kegusaran dan rungutan penduduk yang bimbang dengan pencemaran udara serta risiko kesihatan.

## Tutup timbunan sisa plastik guna kanvas elak dikesan



TIMBUNAN sisa plastik ditutup kanvas di satu lokasi pelupusan pepejal di Teluk Panglima Garang, Kuala Langat baru-baru ini.

**KUALA LANGAT** – Pengusaha kilang pelupusan sisa plastik haram didapati menggunakan taktik licik bagi mengelakkan kegiatan mereka dikesan pihak berkuasa dengan menutup timbunan bahan berbahaya itu menggunakan kain kanvas.

Tinjauan Kosmo! di satu lokasi pembakaran sisa plastik di Teluk Panglima Garang di sini semalam mendapati kain kanvas itu digunakan untuk menutup timbunan sisa plastik.

Menurut sumber, taktik licik pengusaha kilang terbabit disedari penduduk sekitar yang sering memantau lokasi tersebut sejak beberapa hari lalu. "Saya hairan dengan keberanian mereka untuk meneruskan operasi di kawasan ini biarpun pihak berkuasa telah melakukan operasi bagi memerangi kegiatan ini.

"Mereka fikir dengan menutup sisa plastik menggunakan kain kanvas ia tidak akan dapat dikesan pihak

berkuasa dan orang ramai," katanya kepada Kosmo! semalam.

Sumber itu memberitahu, penduduk juga berjaya menemui beberapa lagi lokasi kilang pelupusan plastik yang baharu di sekitar daerah ini.

Katanya, antara lokasi kilang haram yang dikesan penduduk ialah di kawasan Olak Lempit, Sri Cheeding dan Pulau Carey di sini.

"Saya amat berharap pihak berkuasa dapat membanteras kegiatan ini kerana ia mendatangkan kesan buruk kepada penduduk. Bau asap sisa plastik itu akibat pembakaran dapat dihidu dari jauh lagi dan ia begitu meleretkan," ujarnya.

Malaysia menjadi lubang baharu bagi menghimpunkan sisa plastik selepas China menghamkan pengimportan plastik

untuk dikitar semula sejak tahun lalu kerana ancaman pencemaran.

Info Solat		3 OGOS 2018				
		21 ZULKAEDAH 1439H				
		SUBUH	STURUK	ZUHRI	ASAR	MAGHRIB
K. LUMPUR	5:52	7:11	1:22	4:43	7:29	8:42
SHAH ALAM	5:52	7:11	1:22	4:43	7:29	8:42
SEREMBAN	5:52	7:12	1:21	4:41	7:26	8:39
MELAKA	5:51	7:11	1:20	4:41	7:25	8:38
JOHOR BAHRU	5:46	7:06	1:14	4:35	7:18	8:31
IPOH	5:53	7:10	1:25	4:45	7:33	8:46
P. PINANG	5:54	7:13	1:27	4:47	7:36	8:49
ALOR SETAR	5:53	7:11	1:27	4:37	7:37	8:51
K. TERENGGANU	5:43	7:04	1:16	4:36	7:25	8:38
KOTA BHARU	5:50	7:07	1:20	4:39	7:30	8:39
KUANTAN	5:47	7:05	1:16	4:37	7:25	8:35
KANGAR	5:53	7:14	1:27	4:47	7:38	8:51
TAWAU	4:46	6:07	1:18	3:38	6:26	7:38
KOTA KINABALU	4:51	6:11	1:24	3:44	6:34	7:47
KUCHING	5:21	6:41	1:49	4:10	6:53	8:06
MIRI	5:02	6:22	1:33	3:53	6:40	7:53

\*Kawasan-kawasan sewaktu denganraya



# An idea not clicking with all

The Communications and Multimedia Minister is suggesting a technology school stream to cater to the growing demand for talent in a changing digital world. The idea has got youngsters all hyped up but Gobind Singh Deo's proposal isn't going down well with parents and the Education Minister.

> See reports on Pages 2 & 4

**EXCLUSIVE**

## Let's have a tech stream in schools, says Gobind

**PUTRAJAYA:** The Communications and Multimedia Minister has suggested that a technology school stream be created to cater to the growing demand for talent in a changing digital world.

Pupils should be given exposure to technology-based education as early as possible, said Gobind Singh Deo.

"We need to teach the schoolchildren technology-related subjects through the creation of a tech stream in schools.

"I will discuss this with the Education Minister (Dr Maszlee Malik)," Gobind told *The Star* in a recent interview.

Currently, when students reach

Form Four after passing their PT3 exams, they are streamed into arts, science, commerce, or vocational and TVET (technical and vocational education and training) classes.

Gobind said the nurturing of talent for the tech industry should be a priority in a connected world where digitalisation, machine intelligence and the Internet of Things (IoT) are changing the way people work, play and live.

"We should also have a tech stream as this talent should be recognised and developed from a very early age," he said.

Gobind added that children are already exposed to computers,

smartphones, and the Internet from a very young age.

"Teaching them beyond the basics will empower them to be more creative and the chances of capturing the imagination of young students is much higher then."

"We need to talk to them on how to use these facilities, beyond just using them as a play tool.

"We need to guide them so that they can develop a keen interest when they are very young.

"Sometimes, when we wait too long and focus on other aspects on education, these children may lose interest... and you may lose that talent that you could have poten-

tially built at a young age," he argued.

Many people across the globe, Gobind said, are losing their jobs or are being misplaced by machines because they lack tech skills.

He also called for a re-skilling of the workforce apart from making technology a part of the basic education to be included in schools.

"We also cannot wait until the children reach Form Five to ask them what they are interested in."

"This has to be part of the general syllabus, perhaps even at the primary or kindergarten level," he added.

However, Gobind acknowledged that having a technology stream

would require some training first. "One of the challenges that we face with the advent of artificial intelligence and robotics is that many of our workers are going to be displaced as their jobs will be taken over by machines and computers."

"This is happening all over the world, so we will have a lot of people who are capable and a workforce that needs to be re-skilled."

"The Government needs to recognise the fact that we need to train, and in all this, we must train our teachers along technology lines so that they can become experts and actually teach the subject in schools," he said.

## Exciting to students, but not to parents

Many wonder whether it's really necessary to create a new tech stream

**PETALING JAYA:** The idea of having technology and computing as an additional stream in school may sound exciting to some children who are deeply interested in the field, but parents and policy makers have a different view about it.

Education Minister Dr Maszlee Malik said students should be exposed to all streams and disciplines, instead of being further divided.

"If you look at the way the world is moving forward now, we do not divide students into streams," he said.

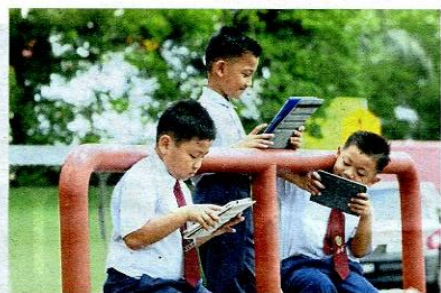
He was commenting on a suggestion by Communications and Multimedia Minister Gobind Singh Deo that schools create a "technology stream" to cater to the growing demand for digital talent.

Gobind suggested in an interview with *The Star* that other than arts, commerce, vocational and science streams, pupils should also be given exposure to technology-based education as early as possible through the creation of a "technology stream".

Dr Maszlee said that students should study all disciplines but should be given the freedom to choose their subjects for major examinations.

"Knowledge should be viewed as one, whether arts, science, tech... and students should be exposed to all those streams, all those subjects," he added.

Sunway University Bachelor of Communication student Jeremy Tey, 18, said he was excited by the suggestion.



**Tech-savvy:** Primary students busy with their tablets. The idea of having a technology stream in school may sound exciting to children who are deeply interested in this field.

Tey, who has been freelancing for seven years in graphic design, web development, filmmaking and consultation, first got interested in technology when he was 11 years old.

"It is a good idea - IT (information technology) is making a big difference... and is needed in today's society."

"I honestly would have liked to have taken this as a stream if I had the chance to do so," he said.

Tey believes it would not be too challenging for students either.

"Even the arts and science streams are challenging, there are always challenges."

"It also (depends) on how the Government implements it. What

kind of methods will they use? Are they going to teach the fundamentals?"

"Everything has got to be carefully planned."

"Technology, like other fields, can be confusing and would need skilled teachers and guidance," he said, adding that teaching the fundamentals would be essential.

SPM student Ong Zhi Ching, 17, is confident that a technology stream would be beneficial to all.

"This would be another great option for students who are more interested in technology subjects such as coding and programming rather than learning arts and science," she said.

Ong added that this would be a great opportunity for those students with an otherwise minimal exposure to technology.

International Islamic University Malaysia (IIUM) Communication Department lecturer Dr Shafizan Mohamed welcomed the idea.

"They could take it as a subject or embed it in different areas of their studies."

"I say this because technology is so vast, it touches on every area including the science and art streams."

"If coding and programming were introduced into these streams, Malaysia would be a more competitive nation as a whole," she said.

Dr Shafizan added that technology affects everyone regardless of what career they pursue.

Meanwhile, parents of school-going children also agreed that having a technology component was a good suggestion, but many wondered whether it was really necessary to create a new stream.

Kristina Azmi, a mother of four, said she was not too concerned whether the Government implemented the new stream but is worried about her son's lack of interest in technology.

"Looking at my son, who is in Year Four now, he is more interested in sports than in technology."

"But, if you talk about hand-phones and mobile games then, yes, he absorbs them very fast," she said.

Desonny Tuzan, a father of four himself, also liked the idea of a technology stream, but wondered

whether the syllabus could remain relevant a few years down the road given the rapid pace of technological advancement.

"I will definitely encourage my children to join the technology stream. I think it is good as well to be learning something that is way ahead, but they must pick a syllabus that will not be outdated so quickly," he said.

Parent Action Group for Education Malaysia (PAGE) chairman Datin Noor Azimah Abdul Rahim was behind the idea of a technology stream, but was cautious and suggested a pilot programme to first assess its effectiveness and success.

She also suggested that those with industry experience be roped in to teach, but acknowledged that this might be costly.

"The related infrastructure and resources have to be state-of-the-art to be attractive."

"We had many issues with 1BestariNet," she added, referring to the project that was supposed to provide a virtual learning environment (VLE) in schools.

Noor Azimah also said that teachers should be trained appropriately and that universal terminology be used in teaching technology.

"There is no need to reinvent complicated words that no one understands in the end."

Noor Azimah believes it is worth investing in creating a technology stream though, and that this could be a way to make national schools the first choice of Malaysian parents.

## IT experts and educators divided on tech in schools

**PETALING JAYA:** Educators and IT experts are divided on the move to have a technology stream in schools.

National Union of the Teaching Profession (NUTP) president Kamarozaman Abd Razak said that it was good if students could be exposed to technology-based subjects, but said that the Government should look at the need for proper training.

"Right now, the training programmes for teachers are very limited."

"There is no budget, which consequently affects teachers' performance and ability to catch up with the IT world," he said.

Kamarozaman added that technology was constantly changing and evolving, so students should be

able to adapt and be exposed to the field in a professional manner.

He said that currently, Form Four students have a science and computer subject, but some schools could not teach it because they did not have the facilities for it.

"If the Malaysian Communications and Multimedia Commission (MCMC) can help the Education Ministry to supply computers to all schools, then we can have the science and computer subject," he said.

He also said the country suffered from slow broadband speeds which prevented the proper teaching of technology classes in schools, adding that it was even worse in Sabah and Sarawak.

Universiti Sains Malaysia (USM)

School of Computer Sciences senior lecturer Dr Syaheerah Lebai Lutfi felt that a technology stream in secondary or primary schools should not be the main concern.

"Technology has a bright side which lets us optimise information delivery."

"However, the dark side is when we get too dependent on it."

"In universities, there are those seeking counselling due to Internet addiction," he said.

Dr Syaheerah added that moderation is key.

"People think that there's an ultimatum with technology, that you either have to keep up with it or become redundant."

"But seldom do they research what is really relevant, required

and practical."

"Furthermore, policies are made without asking the end users like teachers who are obliged to use software in schools," she said.

Although the technology industry has ample job opportunities, Sunway University's School of Science and Technology associate dean and associate professor Dr Lau Sian Lun suggested that the science stream will do for now.

"I don't believe that early exposure (to technology) will necessarily accelerate learning," he said.

Dr Lau acknowledged that digital technology is already part of our everyday lives, but believes that technology literacy and innovation should be the main concern of the Government.

"Literacy allows generations to make good and full use of technology."

"Innovation allows new technology to be created for the future," he said.

IT experts hailed the technology stream suggestion, with C.F. Fong saying that having technology-based subjects would further enhance students' interest in IT.

Fong, founder of cybersecurity firm LGMS, said this can be seen in the younger generation who were already tech-savvy.

He said such subjects should take on a more practical approach in schools, such as teaching them how to code, and analyse data.



## Expert: Biggest concern is whether we have the teachers

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However, he also wondered if Malaysia had the necessary resources to teach such subjects.

"I would say that the biggest concern is whether we have the people to teach the next generation," he said.

Technology entrepreneur Dalbir Singh said that having a stream dedicated to technology was a good idea, but said its success would be dependent on collaboration with the other streams and also support from the technology sector to ensure the course content is relevant and sustainable.

"People in the arts and sciences should also have some basic technology subjects in their curriculum as technology is inevitable, irrespective of which business vertical you end up in.

"What would be excellent is to have a final-year project for students that will make it mandatory for the group to consist of students from the different streams.

"This would ensure cross-collaboration," he said.

Dalbir added that such integration was essential as today's workplace was moving away from silos to a "metric organisation", where a person with a specific skill set can be used for projects as and when required.

"Having this kind of collaboration with different streams will kickstart them from the very beginning and set a good foundation up to the university level itself," he said.



WHEN Gyorgy Levay lost parts of all four extremities, including most of his left arm, to meningitis in 2010, he resolved to make the best of a bad situation.

He mastered his state-of-the-art prosthetic replacements. He switched the focus of his graduate studies from electrical to biomedical engineering. The native Hungarian even found it interesting how he continued to feel sensations from the hand he no longer possessed.

But like most amputees, he felt something was missing. Because his prostheses had no sense of touch, they felt to him like alien attachments.

Thanks to a team of researchers at Johns Hopkins University, he has learned what they might feel like if they were part of him.

Levay was the principal volunteer subject in a two-year study at the university that endowed an artificial limb with the capacity to feel pressure and pain.

Led by Luke Osborn and Nitish Thakor, a graduate student and professor in Johns Hopkins' biomedical engineering department, the team developed a form of "electronic skin" that registers touch in much the same way the human body does.

Wearing that "skin", a fabric-and-rubber sheath laced with sensors that the team called e-dermis, on the fingertips of his prosthetic left hand, Levay picked up several small, rounded objects, then did the same with a sharply pointed object.

When picking up the rounded objects, he felt various levels of physical pressure; when holding the pointed object, he felt pain.

To Levay, it felt as though a lifeless appendage – his left hand and arm – were being born again.

"Normally my 'hand' feels a bit like a hollow shell," he said in a phone interview from his hometown of Budapest. "When these electronic stimulations started happening, it felt a bit like filling a glove with water, almost as though it were filling up with life."

The experiment marked the first time an amputee could feel a range of benign physical pressures through a prosthetic device – and the first time any has felt pain.

"For the first time, a prosthesis can provide a range of perceptions, from fine touch to noxious touch, to an amputee, and this makes it much more like a human hand," said Thakor, the co-founder of Infinite Biomedical Technologies, a small Baltimore, US-based company that supplied the prosthetic hardware for the study.

A paper on the study appeared in the journal *Science Robotics* recently.

### Touch of technology

The advances are the latest in an area of research that has expanded rapidly over the past decade and a half, thanks in no small part to work done at Johns Hopkins.

It wasn't until about four years ago, though, that researchers at Case Western Reserve University in Cleveland and elsewhere began taking steps toward imbuing prosthetic devices with touch.

Those researchers achieved their results by affixing electronic sensors to prosthetic limbs. These tiny devices could register touch, translate it into electronic signals and send the signals across a set of wires to the appropriate locations in what remained of the users' limbs.

Every pioneering experiment has its limitations, and these were no exception. The process required invasive surgery – electrodes had to be implanted in the residual limbs to receive the signals and transmit them across the nervous system – and the work provided only a narrow range of pressure sensations.

The Hopkins team set out to expand the menu of sensations provided, up to and including pain – a category of feeling that, while always unpleasant, serves a crucial survival function.

"Pain is a sensation we use to protect our bodies," Osborn said. "We can take it for granted, and we certainly don't always like it, but it serves as a warning system, helping us avoid harmful events."

The team, which included members from the Johns Hopkins departments of electrical engineering, computer engineering and neurology, turned to biology for its model.

The sensory receptor cells in human skin, they observed, are actually situated at various levels, with those responsible for painful

# Researchers develop 'electronic skin'

For the first time amputees are able to feel sensations with their prosthetic hands, making them feel like living body parts.



The Hopkins team is expanding the menu of sensations provided, up to and including pain – a feeling that, while always unpleasant, serves a crucial survival function. — TNS

sensation (nociceptors) primarily near the surface of the skin and those responsible for sensing pressure (mechanoreceptors) set deeper.

To replicate this system, they designed e-dermis to have sensors arrayed in two layers, instead of one like earlier engineers.

Then the challenge was to "teach" the sensors in each layer to generate the sensations appropriate to that layer.

Again, they turned to biology.

### Mapping the senses

The team studied the frequencies, amplitudes and wavelengths of the signals the body normally sends when generating sensations of pressure and pain. Then they calibrated the sensory apparatus to mimic those variables.

Osborn elaborated on this "neuromorphic" approach – that is, the creation of technology that mimics biological patterns.

"We knew what an electrical pulse for pain looks like, as well as pulses that convey information of pressure, texture and so forth," he said. "We created similar pulses and matched them against what the subjects actually perceive."

The next challenge was to ensure that the system was spatially accurate – that is, that if contact occurs on the prosthetic index finger, the brain perceives it as coming from that spot.

They achieved this through "sensory mapping" – probing every square centimetre of the subject's residual limb and noting where the subject "felt" each of those touches on his "phantom" hand.

The process allowed Osborn and company to wire the sensor on the index finger, for example, directly to the nerve in the residual limb that ordinarily would connect to the real index finger.

"Those nerves that used to go to your hand are still there, they're just not connected to the hand anymore," Osborn said. "By stimulating each of those nerves, we activate the location in the brain that says 'pinky finger', or 'index finger', or 'thumb', and the sensation should ideally feel as it would have before the amputation."

### From electrodes to wires Wired up

Having mapped the nerve patterns so precisely, the team was able to avoid requiring the invasive implantation of metal electrodes in the residual limb.

They did attach wires from the prosthesis to the appropriate locations on the limb, but they did so on the surface of the skin, a process that is far easier on the subject.

Levay said he appreciated that on many levels.

He happened to be studying biomedical engineering on a Fulbright scholarship at Johns Hopkins when Thakor and Osborn

began their research in 2015.

Because he was interested on a personal and professional level, and physically nearby, he made the ideal volunteer subject for the study, which was funded by grants from the Johns Hopkins Applied Physics Laboratory and the National Institute of Biomedical Imaging and Engineering, a division of the National Institutes of Health, among other sources.

The group worked with a number of volunteer amputees during the study, but because he was consistently available over a course of months, Levay emerged as the central, unnamed subject of the paper, titled "Prosthesis with neuromorphic multi-layered e-dermis perceives touch and pain".

The experiments were painful at first, Levay said with a laugh, as Osborn sought to find the right match between the shocks he delivered and the sensations Levay felt.

The longer they worked together, though, the closer the correlation became, until the only pain he felt during the sessions came when he picked up the pointy object, signaling that the experiment had achieved its goal.

That, he said, was pain he was only too happy to feel.

"E-dermis doesn't work perfectly yet," Levay said, "but it's definitely a step further in bringing sensations back to the hand." – The Baltimore Sun/Tribune News Service



# Supermarket forced into backflip over plastic bags

**SYDNEY** —A leading Australian supermarket was yesterday forced into a backflip after facing a barrage of criticism for reneging on plans to phase out free plastic bags.

The nation's two major grocery chains, Coles and Woolworths, banned lightweight single-use plastic bags from their stores nationally last month in response to mounting community calls for change.

Instead, they began offering more environmentally-friendly reusable bags for 15 Australian cents (45 sen) each, with Coles supplying them without charge until last Tuesday to help people adjust to the

new regime.

But on Wednesday Coles said the change in habit had proven to be "big and difficult" for customers and it intended to hand out its thick, reusable plastic bags for free indefinitely.

The decision sparked claims the company was "making a mockery of their stated commitment to reduce plastic waste".

"It is a betrayal of the millions of their customers who want the supermarket to do the right thing in favour of a vocal minority," Greenpeace Australia Pacific campaigner Zoe Deans said.

Social media also lit up, with many

accusing Coles of buckling under pressure from recalcitrant shoppers.

"This is insane @Coles. The only good part of this was the 15c charge, which would change people's behaviour over time. Without it you have ONLY brought in thicker plastic bags," Craig Reucassel said in Twitter.

Another, John Wren, said: "Dear @Coles, I will be shopping exclusively at @woolworths & @ALDIAustralia until you enforce your plastic-bags ban."

With a PR disaster looming and calls for a boycott mounting, Coles yesterday backflipped again, saying the 15 cent bags

would only be free until Aug 29.

"Offering complimentary bags was always an interim measure to help our customers adjust their shopping habits and Coles will no longer be providing Better Bags free of charge from 29 August," it said.

Woolworths said it had no plans to change its original decision to charge for the reusable bags.

"We've found the majority of our customers across Australia have embraced the move to a more sustainable way of shopping," it said, adding that it would take 3.2 billion single-use bags out of circulation each year. — AFP

## Myanmar endures worst of Mekong monsoon floods

**BAGO (Myanmar):** Monsoon rains have pummelled the Mekong region in recent days with Myanmar bearing the brunt of flooding that has forced 150,000 to flee and threatens to destroy levees shielding thousands of homes.

The swirling inundations have started to recede in some areas in the low-lying southeast but the country is only just entering peak monsoon season and more downpours are expected in the coming weeks.

Thousands were either unable or have refused to leave their half-submerged homes, peering out from

upper floor windows as they waited for relief boats bringing food and supplies.

Evacuation orders are still in place across Bago, Karen, Mon and Taninthari provinces with dozens of dams and reservoirs overflowing.

In Madauk town in Bago region, warnings that key levees are at breaking point sparked fear among residents.

"When the authorities warned us over the microphone, we didn't know where to run. Children and elderly people were crying," 43-year-old Ma Wai said yesterday.

State media reported that nearly 150,000 people have been forced to seek refuge in 327 camps while nearly 28,000 are clinging on in their flooded homes. At least a dozen people have been killed.

Tin Tun, 50, said he and his family decided they had no choice but to escape what he described as the worst flooding they had ever experienced.

"We had to flee, taking people and our animals by boat. The water was up to our waists in our house when we left," he said.

The heavy monsoon is also lashing Myanmar's neighbours.

Laos is still searching for scores of people missing after a dam collapsed last month, wiping out entire villages and killing at least 11.

Floodwaters from the disaster seeped into Cambodia and forced thousands from their homes.

Thailand said yesterday that seven of its northeastern provinces have been hit by flooding, affecting at least 30,000 people.

Heavy flooding has also submerged swathes of farmland near Vietnam's capital Hanoi this week, with water reaching the roofs of some homes causing 4,000 residents to scramble to dry ground. — AFP

## N. Korea says heatwave causing heavy crop damage

SEOUL: North Korea warned that an "unprecedented" heatwave has caused heavy damage to crops as it urged citizens to "join the struggle" to prevent drought-like conditions from worsening and hampering food production in the impoverished country.

The Korean peninsula has been gripped by a scorching heatwave in recent weeks, with dozens of deaths in the South blamed on soaring temperatures that have hit all-time highs.

The temperature in North Korea's capital Pyongyang climbed to a record high of 37.8°C on Wednesday, with state TV warning that it was "taking a toll on the economy".

It did not elaborate on the scale of the damage.

But the rising temperatures have already inflicted heavy losses on the richer South, which has reported more than three million deaths of livestock and a fivefold increase in deaths from heat-related illnesses, while vegetable prices have doubled due to supplies being affected.

The North's state-run *Rodong* yesterday said that curbing further damage to the agriculture sector was an "extremely important and urgent task".

"Rural areas across the country are reporting damages to crops including rice and corn due to extremely high temperatures and drought," it said in an editorial. — AFP



**Fighting fatigue:**  
Firefighters resting  
during a break in  
Upper Lake,  
California.  
— Reuters



## Extreme conditions expected to stoke California blazes

**REDDING (California):** Extreme weather conditions are expected to return and could stoke wildfires in California where thousands of weary firefighters are battling the destructive and deadly blazes.

In the Redding area, where the Carr Fire has killed six people, including two firefighters, fierce winds of 40kph, temperatures above 35°C and extremely low humidity were in the forecast until tomorrow, the National Weather Service said.

This could lead to "dangerous and rapid irregular spreading of a large wildfire", the service said.

The Carr Fire has destroyed more than 1,546 structures in and around Redding, a city of 90,000 people about 260km north of the state capital, Sacramento.

Authorities on Wednesday reopened more evacuated neighbourhoods as ground crews, aided by diminished winds, extended buffer lines carved out of thick, dry brush along the fire's edge to 35% of its

perimeter, officials said.

California Department of Forestry and Fire Protection (CalFire) commanders said on Wednesday the fire, sparked by a vehicle on July 23, was burning with far less intensity this week and posed little immediate threat to populated areas.

Despite the outlook, strong gusts along the upper ridge lines were a concern on the fire's rugged western flanks.

More than 4,200 firefighters have spent 11 days battling the blaze,

which has scorched 49,000ha, laying waste to entire neighbourhoods in the scenic Shasta-Trinity region.

Law enforcement officials said the last four people reported as missing among a list of 20 whose names were published on Tuesday were located safe on Wednesday.

The Carr Fire was one of eight large wildfires burning in the state and 93 burning in the United States, mostly in the West, according to the National Interagency Fire Center.  
— Reuters