

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

Bil	Berita	Media	Capaian Berita Penuh
1.	<u>Govt to work with TNB, SPAN to cut off utilities to illegal factories/ Govt, TNB to cut off electricity supply to illegal factories</u> Energy, Technology, Science, Climate Change and Environment Minister Yeo Bee Yin said a notice had been sent on Tuesday to one such factory processing plastic here, stating that electricity supply would be cut.	New Straits Times	Rujuk lampiran 1 atau klik pada tajuk berita
2.	<u>Minister: Govt to cut off illegal waste-processing plants' utilities</u> Illegal solid waste processing plant operators will bear the brunt of cuts in the utilities supply at their premises to ensure they don't repeat their actions, said Energy, Technology, Science, Climate Change and Environment Minister Yeo Bee Yin.	Malay Mail	Klik pada tajuk berita
3.	<u>Pengusaha proses sisa pepejal haram akan dipotong bekalan air, elektrik</u> Pengusaha kilang yang memproses sisa pepejal secara haram akan berdepan dengan tindakan pemotongan bekalan utiliti di premis mereka untuk memastikan mereka tidak kembali beroperasi seperti biasa, kata Menteri Tenaga, Teknologi, Sains, Perubahan Iklim dan Alam Sekitar, Yeo Bee Yin.	Kosmo	Klik pada tajuk berita
4.	<u>Bekalan Utiliti kilang dipotong</u> Menteri Tenaga, Teknologi, Sains, Perubahan Iklim dan Alam Sekitar, Yeo Bee Yin berkata, pihaknya telah mengarahkan Tenaga Nasional Bhd. (TNB), Pengurusan Air Selangor Sdn. Bhd. dan Suruhanjaya Perkhidmatan Air Negara untuk mengambil tindakan itu.	Kosmo	Rujuk lampiran 2
5.	<u>JAS sita 32 mesin proses plastik</u> Operasi itu turut disertai Menteri Tenaga, Teknologi, Sains, Perubahan Iklim dan Alam Sekitar, Yeo Bee Yin, Ketua Pengarah JAS,	Sinar Harian	Klik pada tajuk berita

	Datuk Dr Ahmad Kamarulnajib Che Ibrahim dan Adun Banting, Lau Weng San.		
6.	<u>Tahan warga tempatan terlibat kilang proses plastik</u> Menteri Tenaga, Teknologi, Sains, Perubahan Iklim dan Alam Sekitar, Yeo Bee Yin mengarahkan Jabatan Alam Sekitar (JAS) menahan warga tempatan yang dikenali pasti terlibat dengan kilang haram memproses sisa plastik.	Sinar Harian	Klik pada tajuk berita
7.	<u>Illegal solid waste processing plants will have water and electricity supplies cut</u> Illegal solid waste processing plant operators will bear the brunt of cuts in the utilities supply at their premises to ensure they don't repeat their actions, said Minister of Energy, Technology, Science, Climate Change and Environment Minister Yeo Bee Yin.	The Edge Market	Klik pada tajuk berita
8.	Serbuan ke kilang kita semula plastik haram di Kuala Langat.	Nanyang Siang Pau	Rujuk lampiran 3
9.	<u>2 tsunametre buoys lost/ Cost of buoy upkeep almost RM500,000</u> Three deep-water buoys worth RM7.2 million, used to gather data for an early tsunami warning system, were disposed of as they were no longer functioning. Tarikh: (4 Oktober 2018)	New Straits Times	Rujuk lampiran 4
10.	<u>PM: We'll look into faulty buoys</u> Malaysian Meteorology Department director-general Alui Bahari said the buoys' contractor, Astronautic Technology (M) Sdn. Bhd. (ATSB), was forced to dispose of the buoys following the cabinet's approval.	New Straits Times	Rujuk lampiran 5
11.	<u>Kajian kerosakan boya tsunami dibuat secepat mungkin</u> Dr Wan Azizah turut memuji langkah yang diambil Jabatan Meteorologi Malaysia untuk	Sinar Harian	Klik pada tajuk berita

	membuat kajian tersebut setelah mendapati ketiga-tiga boya berkenaan tidak lagi berfungsi.		
12.	<u>Tolok pasang surut alternatif kesan amaran tsunami - MET Malaysia/ Malaysia ada alternative kesan tsunami</u> Jabatan Meteorologi Malaysia (MET Malaysia) menegaskan negara mempunyai alternatif lain bagi mendapatkan maklumat awal mengenai amaran tsunami, kata Ketua Pengarahnya, Alui Bahari.	Kosmo	Rujuk lampiran 6 atau klik pada tajuk berita
13.	<u>Boya data tsunami rosak dikaji secepatnya – TPM</u> Dr Wan Azizah turut memuji langkah yang diambil Jabatan Meteorologi Malaysia untuk membuat kajian tersebut setelah mendapati ketiga-tiga boya berkenaan tidak lagi berfungsi.	Malaysia Kini	Klik pada tajuk berita
14.	<u>Pendekatan seluruh ASEAN dalam pengurusan bencana - Wan Azizah</u> Sebelum ini, sebuah akhbar melaporkan Ketua Pengarah Jabatan Meteorologi Malaysia (METMalaysia), Alui Bahari berkata, tiga boya berharga kira-kira RM9 juta yang sepatutnya mencerpap data dan menyalurkan maklumat awal mengenai amaran tsunami telah dilupuskan sepenuhnya kerana tidak lagi berfungsi.	Astro Awani	Klik pada tajuk berita
15.	<u>Cracks in the wall, sundry shop owner blames sewerage contractor</u> Perak MCA Public Service and Complaint Bureau Chief Jimmy Loh said the project is being carried out by the Minister of Energy, Science, Technology, Environment and Climate Change.	Malay Mail	Klik pada tajuk berita
16.	<u>Gegaran di Ipoh bukan berpunca daripada gempa bumi</u> Ketua Pengarah Jabatan Meteorologi Malaysia, Alui Bahari berkata, tiada sebarang isyarat atau amaran gempa diterima melalui alat pengesan gempa bumi.	Kosmo	Rujuk lampiran 6 atau klik pada tajuk berita

17.	<u>Punca dentuman, gegaran di Ipoh masih misteri</u> Selepas Jabatan Meteorologi mengesahkan ia bukan gempa bumi, polis berkata sehingga pukul 5 petang ini tiada sebarang laporan mengenai apa-apa kejadian dilaporkan di 25 balai polis di sekitar Ipoh.	Utusan Malaysia	Rujuk lampiran 7 atau klik pada tajuk berita
18.	<u>Peralihan monsun: Awasi aktiviti luar</u> Ketua Pengarah Jabatan Meteorologi, Alui Bahari berkata, pihaknya telah mengeluarkan kenyataan untuk memaklumkan keadaan cuaca di seluruh negara sepanjang fasa peralihan tersebut pada 27 September yang lalu.	Utusan Malaysia	Rujuk lampiran 8
19.	<u>Letupan kuat, gegaran di Ipoh tiada kaitan gempa bumi</u> Ketua Pengarah Jabatan Meteorologi, Alui Bahari berkata, tiada sebarang isyarat atau amaran gempa diterima alat pengesan gempa bumi.	Utusan Malaysia	Klik pada tajuk berita
20.	<u>Gegaran, dentuman bukan gempa bumi</u> Jabatan Meteorologi Malaysia (METMalaysia) menafikan gegaran dan dentuman kuat yang berlaku di sekitar Ipoh dan daerah berdekatan berpunca daripada gempa bumi.	Berita Harian	Klik pada tajuk berita
21.	<u>Bunyi letupan, gegaran di Perak bukan gempa bumi - KP MET</u> Jabatan Meteorologi Malaysia (MET) mengesahkan bunyi letupan disusuli dengan gegaran di beberapa kawasan di Perak khususnya Ipoh bukan berpunca daripada gempa bumi.	Malaysia Kini	Klik pada tajuk berita
22.	<u>Tiada 'gempa bumi' di Ipoh</u> JABATAN Meteorologi Malaysia (METMalaysia) menafikan gegaran dan dentuman kuat yang berlaku di sekitar Ipoh dan daerah berdekatan berpunca daripada gempa bumi.	Harian Metro	Klik pada tajuk berita

23.	<u>Explosion, tremor in Perak not caused by earthquake - MET DG</u> The Malaysian Meteorological Department (MET) has confirmed that the mysterious explosion, followed by tremor that felt in several areas in Perak, particularly in Ipoh, was not caused by an earthquake.	BERNAMA	Klik pada tajuk berita
24.	<u>Pemilik kilang ditahan tawar rasuah RM1,000</u> Suruhanjaya Pencegahan Rasuah Malaysia (SPRM) menahan seorang lelaki kerana cuba memberi rasuah kepada pegawai Jabatan Alam Sekitar (JAS) di sebuah kilang besi di Batang Berjuntai, Kuala Selangor, di sini hari ini.	Utusan Malaysia	Klik pada tajuk berita
25.	<u>Bandar Baru Bangi kawasan perintis LCCF</u> Mohd Sayuthi berkata, program kerangka Perbandaran Rendah Karbon (LCCF) telah dibangunkan oleh Kementerian Tenaga, Teknologi Hijau dan Air (KETTHA) dengan kerjasama Greentech Malaysia bagi memudahkan pihak berkuasa tempatan, perancang bandar dan pemaju dalam melaksanakan pembangunan bandar rendah karbon di Negara ini.	Sinar Harian	Rujuk lampiran 9

TEMPATAN

Bil	Berita	Media	Capaian Berita Penuh
26.	<u>UMT, UEA meterai MoU</u> "Seiring dengan fokus utama universiti dalam bidang sains, kimia dan alam sekitar, usahasama ini bakal melonjakkan lagi pencapaian penyelidikan bidang-bidang berkaitan.	Sinar Harian	Klik pada tajuk berita
27.	<u>Foto Boja tular bukan peralatan kesan tsunami: UMT</u> "Ia adalah milik UMT yang digunakan untuk pengumpulan data seperti suhu laut, perubahan iklim dan kesannya terhadap sumber perikanan	Sinar Harian	Klik pada tajuk berita

	yang diletakkan di perairan Dungun, Terengganu pada 2015,” menurut kenyataan itu.		
28.	<u>Kajian menyeluruh</u> Kajian menyeluruh termasuk dari segi teknikal akan dibuat dalam kadar segera berhubung keperluan penggantian boya yang boleh mencerap data dan menyalurkan maklumat awal mengenai amaran tsunami.	Harian Metro	Rujuk lampiran 10
29.	<u>Kaji segera ganti boya tsunami</u> Kajian menyeluruh termasuk dari segi teknikal akan dibuat segera berhubung keperluan penggantian boya yang boleh mencerap data dan menyalurkan maklumat awal amaran tsunami.	Berita Harian	Rujuk lampiran 11
30.	<u>Tun M gesa industri bantu tingkat kualiti TVET</u> “Pemain industri utama juga diharap membantu meningkatkan kualiti tenaga kerja dan modal insan, terutama graduan dalam bidang TVET.	Berita Harian	Rujuk lampiran 12
31.	<u>FT Ministry leads by example</u> “We hope that soon, with more people using biodegradable packaging, it would push for demand (for biodegradable packaging) and bring prices down,”he added.	The Star	Rujuk lampiran 13
32.	<u>Nuclear power is our green future</u> Nuclear power is neither popular nor easy. But nuclear power, in tandem with renewable energy and long-term power storage, offers a solution for a greener future.	New Straits Times	Rujuk lampiran 14
33.	<u>Tapak sampah haram masih wujud</u> Adun Jeram, Mohd Shaid Rosli menjelaskan, pihaknya kesal apabila agensi berkaitan masih memandang remeh terhadap isu pelupusan sampah haram di kawasan itu.	Sinar Harian	Rujuk lampiran 15
34.	<u>Danger posed by microbeads</u> Pollution caused by plastic waste materials in our oceans, regardless of size, poses a threat to marine life and humans.	New Straits Times	Rujuk lampiran 16

35.	<u>No data on solid waste dumped in oceans, says department</u> The National Solid Waste Management Department does not have any data on solid waste which is dumped in the country's oceans.	New Straits Times	Rujuk lampiran 17
36.	<u>Turn to solar power</u> I fully support our PM's stand that nuclear power should never be an option for Malaysia due to the radioactive waste problem.	The Star	Rujuk lampiran 18

ANTARABANGSA

Bil	Berita	Media	Capaian Berita Penuh
37.	<u>Tsunami tiba lapan minit selepas gempa</u> Portal berita Kompas.com melaporkan, lapan minit kemudian, ombak tsunami terbentuk dan membadaai kawasan pesisir pantai.	Utusan Malaysia	Rujuk lampiran 19
38.	<u>Women scientists still 'undervalued' despite twin Nobel wins</u> "It feels like the world is waking up to the ingenuity of women scientists," Jess Wade, a physics professor at Imperial College London told AFP.	New Straits Times	Rujuk lampiran 20
39.	<u>NASA addresses mysterious space station hole</u> NASA sought on Wednesday to tamp down speculation that sabotage caused a tiny hole found last month in the side of a Russian module docked at the International Space Station, but the mystery remained unsolved.	Malay Mail	Rujuk lampiran 21
40.	<u>Lockheed Martin perkenal kapal angkasa mendarat di bulan</u> Syarikat aeroangkasa, Amerika Syarikat (AS), Lockheed Martin semalam memperkenalkan kapal angkasa terbaharu yang boleh mendarat di permukaan bulan.	Utusan Malaysia	Rujuk lampiran 22 atau klik pada tajuk berita

41.	<u>Research, innovation in fields of science and technology stressed</u> World Space Week is aimed at generating space awareness amongst the students from a large number of schools and colleges of the twin cities and surrounding areas besides general public.	The News	Klik pada tajuk berita
42.	<u>Scientists say halting deforestation 'just as urgent' as reducing emissions</u> The role of forests in combating climate change risks being overlooked by the world's governments, according to a group of scientists that has warned halting deforestation is "just as urgent" as eliminating the use of fossil fuels.	The Guardian	Klik pada tajuk berita
43.	<u>Renewable energy for Puerto Rico</u> Hurricane María brought an opportunity to move away from a fossil fuel–dominant system and establish instead a decentralized system that generates energy with clean and renewable sources.	Science Mag	Klik pada tajuk berita

LAMPIRAN 1
NEW STRAITS TIMES (NEWS): MUKA SURAT 66
TARIKH: 5 OKTOBER 2018 (JUMAAT)



Energy, Technology, Science, Climate Change and Environment Minister Yeo Bee Yin (left) visiting a plastic processing factory operating illegally in Telok Panglima Garang yesterday. PIC BY FALIQ LAJIM

STERN ACTION

Govt, TNB to cut off electricity supply to illegal factories

KUALA LANGAT: The government will work with Tenaga Nasional Bhd (TNB) and the National Water Services Commission (SPAN) to cut off utilities to illegal factories.

Energy, Technology, Science, Climate Change and Environment Minister Yeo Bee Yin said a notice had been sent on Tuesday to a factory processing plastics here.

"I will ensure that TNB cuts the electricity supply after seven days from the date of the notice so that illegal factories can no longer operate.

"We will also ensure that any illegal factory, which has been shut down, will no longer be able to operate in any other area... We will work with the authorities to ensure they don't start up again anywhere," she said.

Yeo was met during an operation to shut down an illegal plastic processing factory in Telok Panglima Garang here.

Present were Department of Environment (DoE) director-general Datuk Dr Ahmad Kamarulnajib Che Ibrahim and Banting assemblyman Lau Weng San.

The joint operation was carried out by 100 people from the Kuala Langat District Council, Immigration Department, police, Customs Department, TNB, SPAN and Syarikat Bekalan Air Selangor (Syabas).

Yeo said the plastic waste in the factory would be given to licensed factories

for processing.

"We have contacted licensed recycling factories, which follow the regulations of the Environment Act and are registered with the authorities, to process the waste.

"It would be better than sending the waste to dump sites.

"Malaysia will also stop importing plastic waste material, especially low-grade and low-quality ones," she said.

Yeo said she had also instructed the DoE and police to detain locals suspected to have broken regulations under the Environmental Quality Act 1974.

Under the act, she said, a special letter could be issued to allow the authorities to arrest suspected environmental criminals.

"The director-general (of DoE) or any officer given written authority by the director-general or police can arrest any individual without warrant if there is any reasonable belief that this individual has committed or has attempted to commit an offence under the act.

"Before this, most arrests involved foreigners, but from now on, we will also arrest Malaysians involved in such activities.

"We want to ensure that such things do not happen. I want to remind illegal factory operators to think about their actions. I will ensure that police will arrest you and that you will be charged in court."

LAMPIRAN 2
KOSMO (NEGARA): MUKA SURAT 17
TARIKH: 5 OKTOBER 2018 (JUMAAT)

Kerajaan tekad perangi kegiatan proses sisa plastik secara haram di Malaysia

Bekalan utiliti kilang dipotong

Oleh AHMAD SHAHERMAN SHAMSURI

KUALA LANGAT – Pengusaha kilang memproses sisa plastik yang beroperasi secara haram di daerah ini akan berdepan tindakan pemotongan bekalan utiliti bagi memastikan premis mereka tidak beroperasi kembali selepas ditutup pihak berkuasa.

Menteri Tenaga, Teknologi, Sains, Perubahan Iklim dan Alam Sekitar, Yeo Bee Yin berkata, pihaknya telah mengarahkan Tenaga Nasional Bhd. (TNB), Pengurusan Air Selangor Sdn. Bhd. dan Suruhanjaya Perkhidmatan Air Negara untuk mengambil tindakan itu.

Menurutnya, notis pemotongan bekalan elektrik sudah dihantar kepada pengusaha kilang haram sejak Selasa lalu dan tindakan akan dibuat selepas tujuh hari daripada tarikh notis dikeluarkan.

“Saya akan pastikan pihak TNB melakukan pemotongan bekalan selepas tarikh notis itu.

“Kita juga akan pastikan semua kilang haram yang ditutup tidak akan memindahkan operasi



BEE YIN (kiri) bersama Ahmad Kamarulnajib (dua dari kiri) melihat longgokan plastik ketika serbuan ke atas kilang sisa plastik haram di Telok Panglima Garang, Kuala Langat semalam.

mereka ke lokasi lain. Kita akan membanteras habis-habisan kilang haram ini daripada beroperasi semula,” katanya selepas menyertai Ops Bersepadu Kilang Plastik Haram di sekitar Telok Panglima Garang di sini semalam.

Hadir sama Ketua Pengarah Jabatan Alam Sekitar, Datuk Ahmad Kamarulnajib Che Ibrahim.

Dalam operasi itu, sebanyak 10 kilang diserbu dan sembilan daripada premis didapati beroperasi secara haram manakala sebuah lagi mempunyai lesen namun sudah tamat tempoh.

Bee Yin memberitahu, baki sisa plastik yang masih berada di kilang-kilang plastik haram yang ditutup itu akan diproses di kilang-kilang berlesen bagi memastikan sisa tersebut tidak memberi ke-



KERATAN Kosmo! 23 Julai 2018.

san kepada alam sekitar.

Sementara itu, Pengarah Jabatan Penguat Kuasa Majlis Daerah Kuala Langat, Nordila Yasir berkata, kesemua 34 kilang sisa plastik haram di daerah ini telah diserbu sejak 24 Julai lalu.

“Berdasarkan 54 aduan yang diterima pihak kami berkenaan kilang haram ini, 13 daripadanya mempunyai lesen dan kita kemudiannya memeriksa 41 lagi kilang yang disyaki haram.

“Daripada jumlah itu, 38 kilang didapati tiada lesen, sebuah lagi mempunyai lesen tetapi sudah tamat tempoh manakala tujuh lagi tidak terlibat dalam kegiatan memproses plastik. Ada antaranya dijadikan stor perabot,” ujarnya.

INFO Kronologi kilang proses plastik di Kuala Langat

23 Julai 2018 – Hampir 300,000 penduduk Kuala Langat, Selangor terutamanya di Telok Panglima Garang terdedah kepada risiko pelbagai jenis penyakit termasuk kanser apabila daerah itu dijadikan tempat longgokan plastik kitar semula dari serata dunia

24 Julai 2018 – Kerajaan mengarahkan pihak berkuasa tempatan segera menghentikan operasi kilang memproses sisa plastik di Kuala Langat ekoran rungutan penduduk

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 lapan buah kilang kitar semula plastik haram yang terletak di Banting, Jenjarom dan Teluk Panglima Garang serta menyita berjuta-juta tan timbunan sisa pepejal yang diimport dari seluruh dunia

25 September 2018 – Kerajaan akan mengenakan levi RM15 bagi setiap tan sisa plastik yang diimport ke negara ini menerusi AP yang dibuka semula pada 24 Oktober depan

30 September 2018 – Kerajaan negeri Selangor akan meminta kerajaan Persekutuan mengharamkan import sisa plastik yang telah menjejaskan kehidupan ratusan ribu rakyat negeri itu

LAMPIRAN 3
NANYANG SIANG PAU: MUKA SURAT A27
TARIKH: 5 OKTOBER 2018 (JUMAAT)

杨美盈：阻劣质塑料 拟修订废料入口准证指南

(巴生 4 日讯) 为全面禁止劣质塑料垃圾引进我国，能源、工艺、科学、气候变化与环境部拟修订 3915 编号固体废物入口准证指南。

能源、工艺、科学、气候变化和环境部长杨美盈说，3915 编号的范围广泛，没有列明垃圾和优质塑料的区别，因

此必须清楚分类塑料类型，再由关税局把关，阻止劣质塑料进入我国。

无论如何，她认为没有修订法令的必要，只是需要修订指南即可。

她今日出席瓜冷县议会与各造展开的非法洋垃圾厂第 4 次联合取缔行动时，这么向媒

体指出。

她指出，非法洋垃圾厂处理的劣质垃圾会对环境造成污染，虽说塑料有发展前景，但品质则有优劣之分。

雪柔非法洋垃圾厂严重

她说，目前雪州和柔佛州的非法洋垃圾厂情况最严重，惟不是州政府的问题，而是执照持有者引进洋垃圾后，转售给非法工厂业者。

她也说，劣质塑料即使加工循环，制成品也是低品质，于 1 月至 6 月，已有大量洋垃圾被引进我国，包括在巴生和瓜拉冷岳加工处理。

她披露，已掌握一些滥用执照的名单，这批人将被列入黑名单，包括不能继续经营塑料再循环工厂。她同时宣布成立涵盖环境部、房政部、贸工部及国家固体废物管理局的委员会，专处理洋垃圾课题。

她说，她将在委员会召开会议，与房屋及地方政府部长祖莱达商讨处理洋垃圾对策。



杨美盈宣布成立涵盖环境部、房政部、贸工部及国家固体废物管理局的委员会。

只禁劣质洋垃圾

针对中国和泰国已全面禁止进口洋垃圾，大马政府会否仿效两国做法时，杨美盈强调，我国仍需要合法塑料再循环工厂将已分类的塑料循环再生。

她说，合法塑料再循环工厂与非法洋垃圾厂运作方式有别，两者不应相提并论。有些合法工厂协助国际企业循环优质塑料，故不能完全拒绝洋垃圾，只能禁止劣质洋垃圾。

她表示，我国推广垃圾分类习惯，若没有合法塑料再循环工厂处理优质塑料，难道要把全部资源拿去土埋场？

无论如何，她说，政府要揪出背后操作工厂的业者，无论是外国人或国民营运非法工厂，都会被依法追究。

官员可逮捕污染环境者

杨美盈说，在 1974 年环境素质法令第 37 (c) 条文下，官员在获得主管赋予逮捕权力后，可将被怀疑做出污染环境行为的人士逮捕进行调查，包括本地人。

惟她不希望本地业者以为侥幸逃过被逮捕命运，就转移到其他地方继续营运。

她强调，执法单位必须揪出幕后营运者，不能让这些工厂搬迁到其他地区继续运作。

她说，当务之急，是将非法工厂内能循环的洋垃圾出售给合法工厂，不能循环的就土埋。

她也说，没有法令阐明地主需为厂家经营非法洋垃圾厂负责，所以当局主要是逮捕违法的经营者。

LAMPIRAN 4

NEW STRAITS TIMES (NEWS/ NATION): MUKA SURAT 6

TARIKH: 4 OKTOBER 2018 (KHAMIS)

6 NEWS / Nation

WORTH RM7.2 MILLION

2 TSUNAMETRE BUOYS LOST

A third early tsunami warning buoy had exploded

HIDIR REDUAN ABDUL RASHID
AND LUQMAN ARIF ABDUL KARIM
PETALING JAYA
cnews@nstp.com.my

THREE deep-water buoys worth RM7.2 million, used to gather data for an early tsunami warning system, were disposed of as they were no longer functioning.

The installation of the Norway-made equipment was done in phases since 2006 at three locations — the Andaman Sea, Sulu Sea and South China Sea.

The buoy placement was to detect early tectonic plate movements under the sea, which lead to the formation of tsunamis.

The tsunami buoy project, or tsunametre, is the result of Malaysia-Indonesia collaboration

following the 2004 Aceh earthquake, which killed more than 230,000 people from 14 nations, including Malaysia.

However, a buoy — located 500km from Langkawi and 60km from Bandar Aceh, Indonesia, in the Andaman Sea, which was placed on Dec 30, 2005 — was found not to have transmitted data every 15 minutes, as it should.

Further investigations revealed the equipment was lost from its original location.

Another buoy — placed near Layang-Layang Island, Sabah, near the South China Sea, on March 7, 2006 — suffered the same fate.

The million-plus ringgit buoy was designated as being lost, either dragged away by sea currents or through vandalism.

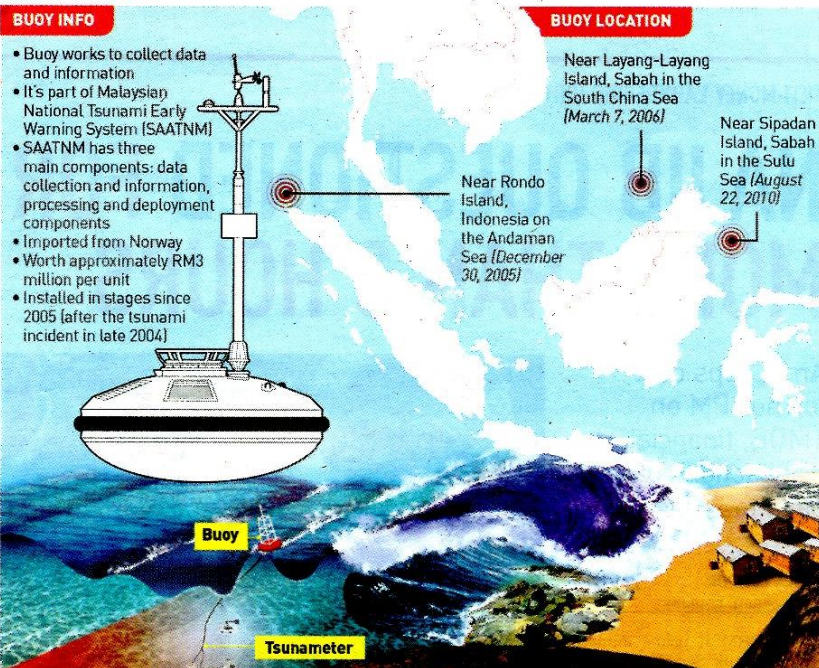
EXCLUSIVE

>> Turn to Page 14

TSUNAMI BUOY

BUOY INFO

- Buoy works to collect data and information
- It's part of Malaysian National Tsunami Early Warning System (SAATNM)
- SAATNM has three main components: data collection and information, processing and deployment components
- Imported from Norway
- Worth approximately RM3 million per unit
- Installed in stages since 2005 (after the tsunami incident in late 2004)



BUOY LOCATION

Near Layang-Layang Island, Sabah in the South China Sea (March 7, 2006)

Near Sipadan Island, Sabah in the Sulu Sea (August 22, 2010)

Near Rondo Island, Indonesia on the Andaman Sea (December 30, 2005)

BUOY FUNCTIONS

- Each buoy system is equipped with a basic structure component of balancing, pole and power supply system, anchors to be released into the water and the detector.
- It includes tsunametre seafloor mounting, acoustic telemetry system connecting tsunami and buoys and satellite data telemetry system (Inmarsat C).
- The tsunametre will be installed on the anchor using acoustic release to enable the unit's

observation when the battery is submerged in the sea after at least one year of operation.

- The tool will continue to measure and evaluate the water pressure on the seafloor and will send hourly information to the surface.

- The data obtained will be analysed and if a tsunami occurs, the tsunametre will quickly enter the data and send a series of time pressures to the buoy on the surface, which

will transmit data to the coast via satellite links (Inmarsat C).

- Operational testing to see functional buoyability is carried out to detect a comprehensive transmission and satellite communication system for data transmission using satellites.

- Data obtained from deep sea buoys and tsunameters will be shared between the Malaysian Meteorological Department and the same department from the other country involved.

INFOGRAPHIC NST

LAMPIRAN 4 (SAMBUNGAN)
NEW STRAITS TIMES (NEWS/ NATION): MUKA SURAT 14
TARIKH: 4 OKTOBER 2018 (KHAMIS)

TSUNAMI WARNING

Cost of buoy upkeep almost RM500,000

>> From Page 6

The third tsunami buoy — installed near Sipadan Island, Sabah, near the Sulu Sea in 2010 — was no longer used after it exploded during maintenance on the MV *Pendamar* vessel. The incident, which killed Norwegian head engineer Stig Erik Lyng, 53, took place when he was trying to open one of the buoy's black screws with a drill. It caused an explosion.

Malaysia Meteorology Department director-general Alui Bahari said the buoy's main contractor, Astronautic Technology (M) Sdn Bhd (ATSB), was forced to dispose of the buoy following cabinet approval.

The approval to dispose of the buoys was due to multiple factors such as maintenance cost, effectiveness and durability in its long-term operation.

He said that the buoys — each costing RM3 million — transmitted data via Immarsat C satellite via a telemetry system every 15 minutes.

However, this duration would be shortened to every minute when the buoys go into the Tsunami Mode after detecting unusual waves.

"This function is necessary to save battery power, whereby it would only be actively sending data every minute to MMD when the system records tsunami waves.

"Due to the equipment's position in the middle of the sea, the twice-a-year maintenance is costly, almost reaching RM500,000, besides being exposed to risks of vandalism, theft, damage from exposure to sea water, or drifting by powerful currents."

Alui said as a result, the buoys' role and function were taken over by an alternative system, which combined tide gauges, coastal cameras and siren system that are being installed in stages nationwide.

LAMPIRAN 5 NEW STRAITS TIMES (NEWS/ NATION): MUKA SURAT 8 TARIKH: 5 OKTOBER 2018 (JUMAAT)

TSUNAMI WARNING

PM: WE'LL LOOK INTO FAULTY BUOYS

3 buoys written off and haven't been replaced

AZURA ABAS AND
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THE government will look into reports that three deep-water buoys worth RM7.2 million, used to gather data as part of an early-tsunami warning system, have been disposed of for being dysfunctional and not replaced.

Prime Minister Tun Dr Mahathir Mohamad said this at the launch of the 33rd Meeting of the Asean Committee on Disaster Management, and the 6th Asean Ministerial Meeting on Disaster Management and Related Meetings yesterday.

"We will check and look into it," he said.

The *New Straits Times* reported that the installation of the Norwegian-made equipment was done in phases since 2006 in three locations: the Andaman Sea, the Sulu Sea and the South China Sea.

The buoys' placement was to detect early tectonic plate movements under the sea, which could lead to tsunamis.

The tsunami buoy project, or tsunametre, was the result of a Malaysian-Indonesian collaboration following the 2004 Aceh earthquake, which killed more than 230,000 people from 14 nations, including Malaysia.

However, one buoy — located 500km from Langkawi and 60km from Bandar Aceh, Indonesia, in the Andaman Sea, which was placed on Dec 30, 2005 — was recently found not to have transmitted data every 15 minutes, as it should.

An investigation revealed that the equipment had disappeared from its original location.

Another buoy — placed near Pulau Layang-Layang, Sabah, near the South China Sea, on March 7, 2006 — suffered the same fate.

The buoys were written off as lost, having been either dragged away by sea currents or destroyed by vandals.

The third buoy — installed near Pulau Sipadan, Sabah, near the Sulu Sea in 2010 — had exploded during maintenance on the *MV Pendarmar* vessel, and was no longer in use.



Prime Minister Tun Dr Mahathir Mohamad and Deputy Prime Minister Datuk Seri Dr Wan Azizah Wan Ismail with foreign delegations at the 6th Asean Ministerial Meeting on Disaster Management and Related Meetings in Putrajaya yesterday. BERNAMA PIC

Malaysia Meteorology Department director-general Alui Bahari said the buoys' contractor, Astronautic Technology (M) Sdn Bhd (ATSB), was forced to dispose of the buoys following the cabinet's approval.

The decision to dispose of the

buoys was made over multiple factors, including maintenance cost, effectiveness and durability.

He said the buoys, each costing RM3 million, transmitted data via Immarsat C satellite through a telemetry system every 15

minutes.

Alui added that as a result, the buoys' role and functions were taken over by an alternative system, which combined tide gauges, coastal cameras and siren systems being installed in stages nationwide.

TECHNICAL ASPECTS

DPM: Study to replace lost buoys to be done

PUTRAJAYA: A study will be carried on the need to replace the lost tsunametre buoys, said Deputy Prime Minister Datuk Seri Dr Wan Azizah Wan Ismail.

The buoys were used to gather data for an early tsunami warning system.

She said the study, to be done soon, must include technical aspects because Malaysia was also at risk of facing a tsunami, like it did in 2004.

"As what was said by the prime minister (Tun Dr Mahathir Mohamad) earlier today (yesterday),



the government has to look into the matter.

"The technical aspects must be studied as the country is at risk of being hit by the disaster.

"It's good to know now that the buoys are not working so that we can take the right measures.

"If neighbouring countries are hit by earthquakes, other surrounding countries are (also) at risk of being hit by the tsunami

just like what happened in 2004.

"Therefore, we should take precaution," she said after chairing the 6th Asean Ministerial Meeting on Disaster Management and Emergency Response yesterday.

The NSTP reported that the three buoys which were supposed to detect and transmit early warning on tsunami, were disposed of as they were no longer functioning.

NOT DETECTED

'Blast, tremor not caused by quake'

IPOH: The Malaysian Meteorological Department (MET) has confirmed that the mysterious explosion, followed by a tremor felt in Perak, particularly here, was not caused by an earthquake.

Its director-general, Alui Bahari, said the sound of the blast and the tremor had nothing to do with the earthquakes in Indonesia.

"The loud bang and tremor felt in Perak are not an earthquake as no earthquake warning was detected," he said here yesterday.

Residents in several areas panicked when they heard a loud

bang akin to an explosion, which was followed by a tremor at Ilam.

The incident went viral when Netizens claimed that it was due to the breaking of rocks at the quarry in Simpang Pulai here.

Some claimed the loud bang was due to training carried out by the Royal Malaysian Air Force (RMAF) using explosives.

However, RMAF denied such an exercise took place.

Ipoh district deputy police chief Supt Abdul Rani Alias said police would probe into the incident. **Bernama**



Alui Bahari

Flashback of the NST news report yesterday.

LAMPIRAN 6
KOSMO (NEGARA): MUKA SURAT 14
TARIKH: 5 OKTOBER 2018 (JUMAAT)

Malaysia ada alternatif kesan tsunami

KUALA LUMPUR - Jabatan Meteorologi Malaysia (METMalaysia) menegaskan negara mempunyai alternatif lain bagi mendapatkan maklumat awal mengenai amaran tsunami, kata Ketua Pengarahnya, Alui Bahari.

Beliau berkata, stesen tolok pasang surut yang mengukur perubahan paras laut untuk mengesan tsunami sudah ditempatkan di beberapa lokasi sejak tahun 2006.

Menurutnya, pemasangan tolok pasang surut itu seiring dengan tiga boya tsunami yang ditempatkan di tiga lokasi perairan iaitu Laut Andaman,

Laut Sulawesi dan Laut China Selatan.

“Sudah tentu kita mempunyai alternatif lain untuk mengesan tsunami sebelum mengambil keputusan untuk melupuskan tiga boya tersebut,” katanya ketika dihubungi *Bernama*.

Beliau berkata demikian ketika diminta mengulas laporan media berhubung tiga boya laut bernilai kira-kira RM9 juta yang menggunakan teknologi dari Norway yang sepatutnya mencerap data dan menyalurkan maklumat awal mengenai amaran tsunami kini dilupuskan sepenuhnya kerana tidak lagi berfungsi.

LAMPIRAN 7
KOSMO (NEGARA): MUKA SURAT 12
TARIKH: 5 OKTOBER 2018 (JUMAAT)

Gegaran, letupan di Ipoh bukan berpunca daripada gempa bumi

IPOH – Kejadian letupan dan gegaran kuat yang berlaku di beberapa kawasan di bandar raya ini pagi semalam bukan berpunca daripada kejadian gempa bumi.

Ketua Pengarah Jabatan Meteorologi Malaysia, Alui Bahari berkata, tiada sebarang isyarat atau amaran gempa diterima melalui alat pengesan gempa bumi.

Jabatan itu menafikan sebarang kejadian gempa bumi yang berlaku di negeri Perak dan gegaran itu tidak mempunyai kaitan dengan gempa bumi di Indonesia.

“Letupan itu bukan satu kejadian gempa bumi atau fenomena alam. Selain itu, kita juga tidak menerima sebarang isyarat gempa bumi.

“Pejabat Jabatan Meteorologi Perak di Sitiawan juga mendapat pelbagai panggilan daripada orang awam yang bertanyakan mengenai kejadian itu, namun ia bukan gempa bumi,” katanya ketika dihubungi *Kosmo!* di sini semalam.

Terdahulu, satu letupan dan gegaran berlaku di sekitar bandar raya ini kira-kira pukul 11 pagi semalam.

Kejadian tersebut juga tular di laman sosial seperti Facebook dan Twitter apabila ramai penduduk di sekitar Ipoh merasai dan mendengar letupan itu.

Sementara itu, Ketua Polis Daerah Ipoh, Asisten Komisioner Mohd. Ali Tamby berkata, tiada sebarang laporan mengenai kejadian tersebut di 25 buah balai polis di Ipoh.

Bagaimanapun, pihak polis masih berusaha untuk mendapatkan maklumat lain atau pengesahan daripada pihak berkaitan.

Dalam pada itu, Komandan Akademi Tentera Udara Diraja Malaysia, Kolonel Abdul Nazar Abdul Hamid menafikan letupan dan gegaran tersebut berpunca daripada aktiviti latihan pasukan itu seperti yang tular di media sosial.

LAMPIRAN 8
UTUSAN MALAYSIA (DALAM NEGERI): MUKA SURAT 15
TARIKH: 5 OKTOBER 2018 (JUMAAT)

Punca dentuman, gegaran di Ipoh masih misteri

IPOH 4 Okt. - Punca dentuman kuat disusuli gegaran selama beberapa saat yang dirasakan di sekitar bandar raya ini hari ini masih menjadi misteri.

Sehingga kini punca kejadian pada kira-kira pukul 11 pagi tidak dapat disahkan oleh agensi yang berkenaan apabila ramai yang mengaitkan ia disebabkan gempa bumi, letupan di kuari dan latihan tentera.

Ketua Pengarah Jabatan Meteorologi, Alui Bahari berkata, tiada sebarang isyarat atau amaran gempa diterima alat pengesan gempa bumi di sekitar negeri Perak, sekali gus tiada kaitan dengan kejadian gempa bumi di Indonesia.

"Ta bukan gempa bumi, bukan fenomena alam. Fenomena apa, kami tidak tahu kerana tiada sebarang isyarat dikesan alat pengesan gempa," katanya ketika dihubungi.

Menurut Alui, ekoran kejadian dentuman dan gegaran itu, Pejabat Meteorologi negeri di



ALUI BAHARI

Sitiawan menerima panggilan daripada orang awam bagi mendapatkan maklumat lanjut.

"Ibu pejabat di Petaling Jaya juga dihubungi ramai orang untuk mengetahui kejadian sebenar di Perak sama ada gegaran itu disebabkan oleh gempa bumi atau tidak," katanya.

Sementara itu, Ketua Polis Daerah, Asisten Komisioner Mohd. Ali Tamby berkata, se-

hingga pada pukul 5 petang ini tiada sebarang laporan mengenai apa-apa kejadian dilaporkan di 25 balai polis di sekitar Ipoh.

Katanya, usaha sedang dijalankan bagi mendapatkan maklumat dan pengesahan daripada pihak lain.

"Setakat ini tiada sebarang laporan diterima oleh balai-balai polis di Ipoh dan kita sedang berusaha mendapatkan maklumat mengenai punca kejadian," katanya.

Dalam pada itu, Komandan Akademi Tentera Udara (ATU), Kolonel Abdul Nazar Abdul Hamid ketika dihubungi menafikan dentuman dan gegaran berpunca daripada aktiviti latihan pasukan itu seperti yang tular di media sosial.

"Saya telah periksa dengan pihak kem dan dimaklumkan tiada sebarang latihan menggunakan bahan letupan dijalankan hari ini atau semalam, anggota saya sendiri turut merasai gegaran sama," katanya.

LAMPIRAN 9
UTUSAN MALAYSIA (DALAM NEGERI): MUKA SURAT 15
TARIKH: 5 OKTOBER 2018 (JUMAAT)

**Peralihan
monsun:
Awasi
aktiviti luar**

KUALA LUMPUR 4

Okt. - Orang ramai dinasihatkan untuk sentiasa berwaspada dan mengawasi aktiviti ahli keluarga dalam tempoh fasa peralihan monsun ketika ini.

Ketua Pengarah Jabatan Meteorologi, Alui Bahari berkata, pihaknya telah mengeluarkan kenyataan untuk memaklumkan keadaan cuaca di seluruh negara sepanjang fasa peralihan tersebut pada 27 September yang lalu.

"Orang ramai boleh rujuk semula kenyataan yang dikeluarkan Jabatan Meteorologi minggu lalu dan perlu sentiasa mendapatkan maklumat terkini melalui laman web kami," katanya ketika dihubungi *Utusan Malaysia* di sini hari ini.

Dalam kenyataan tersebut, Jabatan Meteorologi menjangkakan tempoh peralihan monsun bermula pada 28 September dan berterusan sehingga awal November.

Jabatan Meteorologi turut menjelaskan kejadian hujan lebat dan ribut petir dalam jangka masa yang singkat serta angin kencang akan lebih kerap berlaku terutamanya pada waktu petang dan awal malam di kebanyakan negeri-negeri di pantai barat dan pedalaman Semenanjung; pantai barat Sabah serta kawasan barat dan tengah Sarawak.

"Sehubungan itu, orang ramai dinasihatkan untuk lebih berwaspada dan sentiasa mendapatkan maklumat cuaca terkini melalui laman web Jabatan Meteorologi," kata kenyataan tersebut.

"Orang ramai boleh rujuk kenyataan Jabatan Meteorologi minggu lalu dan perlu sentiasa mendapatkan maklumat terkini melalui laman web kami"

ALUI BAHARI

LAMPIRAN 10
SINAR HARIAN (AMPANG, HULU LANGAT): MUKA SURAT 36
TARIKH: 5 OKTOBER 2018 (JUMAAT)

Bandar Baru Bangi kawasan perintis LCCF

BANGI - Pusat Bandar Seksyen 9, Bandar Baru Bangi dipilih sebagai kawasan perintis dalam melaksanakan projek kerangka Perbandaran Rendah Karbon (LCCF) bagi pengiktirafan Malaysia Green Technology Corporation (Greentech Malaysia).

Yang Dipertua Majlis Perbandaran Kajang (MPKJ), Mohd Sayuthi Bakar berkata, kawasan tersebut terletak di dalam pelan tindakan Perbandaran Rendah Karbon Bandar Baru Bangi 2035 serta mempunyai data penanda aras karbon yang mencukupi.

"Ia akan menjadi contoh pelaksanaan projek LCCF yang lain di kawasan dalam pentadbiran MPKJ, khasnya

Bandar Baru Bangi pada masa akan datang," katanya.

Mohd Sayuthi berkata, program kerangka Perbandaran Rendah Karbon (LCCF) telah dibangunkan oleh Kementerian Tenaga, Teknologi Hijau dan Air (KETTHA) dengan kerjasama Greentech Malaysia bagi memudahkan pihak berkuasa tempatan, perancang bandar dan pemaju dalam melaksanakan pembangunan bandar rendah karbon di Negara ini.

"LCCF merupakan satu rangka kerja yang disesuaikan dengan mengukur impak alam sekitar yang disebabkan pembangunan dari aspek jumlah pengeluaran karbon," katanya.



Mohd Sayuthi (dua kanan) memasukkan surat khabar ke dalam tong kitar semula.

Beliau berkata, LCCF dibentuk dalam satu sistem pencapaian berdasarkan prestasi yang melibatkan em-

pat elemen iaitu persekitaran, infrastruktur, pengangkutan dan bangunan.

"Ia juga dibahagikan ke-

pada 13 kriteria dan 36 sub kriteria. Tujuan program ini adalah untuk menyeru para peniaga di pusat bandar ini

untuk membantu MPKJ dalam usaha mengurangkan karbon dari segi, pengurusan sisa pepejal dan penanaman pokok," katanya.

Menurutnya, pengukuran penanda aras bagi projek LCCF pusat bandar, Bandar Baru Bangi adalah bermula pada tahun lalu dan pengiraan kadar pengurangan karbon adalah pada tahun depan bagi membolehkan MPKJ mendapatkan Sijil Interim dan seterusnya memperoleh Sijil Berlian dari Greentech Malaysia.

"Jumlah pelepasan karbon pada tahun lalu di kawasan kajian adalah sebanyak 3,012.59 tan metrik," katanya.

LAMPIRAN 11
HARIAN METRO (SETEMPAT): MUKA SURAT 72
TARIKH: 5 OKTOBER 2018 (JUMAAT)

Kajian menyeluruh

■ Keperluan ganti boya cerap data salur amaran tsunami

Suhaila Shahrul Annuar dan
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Putrajaya

Kajian menyeluruh termasuk dari segi teknikal akan dibuat dalam kadar segera berhubung keperluan penggantian boya yang boleh mencerap data dan menyalurkan maklumat awal mengenai amaran tsunami.

Timbalan Perdana Menteri Datuk Seri Dr Wan Azizah Wan Ismail berkata, perkara itu perlu dilihat segera kerana risiko tsunami melanda Malaysia memang sentiasa ada memandangkan negara pernah mengalaminya pada 2004.

"Seperti yang Perdana Menteri (Tun Dr Mahathir Mohamad) kata dia (kerajaan) akan melihat perkara ini. Antara keperluan yang akan dilihat dari segi teknikal kerana bila kita ada risiko tsunami, memang perlu.



DR Wan Azizah pada sidang media selepas Mesyuarat Menteri-Menteri ASEAN. Hadir sama, Setiausaha Agung ASEAN, Datuk Lim Jock Hoi dan Ketua Pengarah NADMA, Datuk Mohtar Mohd Abd Rahman (kanan).

"Bagus jika kita tahu ia sudah tidak berfungsi, jadi kita boleh ambil langkah yang sewajarnya.

"Langkah berjaga-jaga mesti kita ambil, kalau gempa bumi berlaku di negara jiran, jadi negara yang berdekatan ada risiko dilanda tsunami seperti yang berlaku pada 2004 di negara ini,"

katanya pada sidang media selepas mempengerusikan Mesyuarat Menteri-Menteri ASEAN mengenai Pengurusan Bencana dan Respon Kecemasan Kali ke-6 di sini, semalam.

Laporan eksklusif NSTP semalam, mendedahkan pemasangan peralatan menggunakan teknologi dari

Norway itu dilakukan secara berfasa, sejak 2006 merangkumi tiga lokasi perairan, iaitu Laut Andaman, Laut Sulawesi dan Laut China Selatan, bagi memastikan sebarang risiko tsunami berpunca daripada pergerakan kerak bumi di tengah laut berupaya dikesan lebih awal.

LAMPIRAN 12
BERITA HARIAN (MUKA DUA): MUKA SURAT 2
TARIKH: 5 OKTOBER 2018 (JUMAAT)

Kaji segera ganti boya tsunami

Putrajaya: Kajian menyeluruh, termasuk dari segi teknikal akan dibuat segera berhubung keperluan mengganti boya yang boleh mencerap data dan menyalurkan maklumat awal mengenai amaran tsunami.

Timbalan Perdana Menteri, Datuk Seri Dr Wan Azizah Wan Ismail, berkata perkara itu perlu dilihat segera kerana risiko tsunami melanda Malaysia memang sentiasa ada memandangkan negara pernah mengalaminya pada 2004.

"Seperti yang Perdana Menteri (Tun Dr Mahathir Mohamad) kata dia (kerajaan) akan melihat perkara ini sebab kita memang ada risiko tsunami.

Langkah berjaga-jaga

"Bagus jika kita tahu ia sudah tidak berfungsi, jadi boleh ambil langkah sewajarnya. Langkah berjaga-jaga mesti diambil, jika gempa bumi berlaku di negara jiran, negara berdekatan ada risiko dilanda tsunami seperti berlaku pada 2004 di negara ini," katanya pada sidang media selepas mempengerusikan Mesyuarat Menteri-Menteri ASEAN mengenai Pengurusan Bencana dan Respon Kecemasan Kali Ke-6 di sini, semalam.

Laporan eksklusif NSTP semalam mendedahkan pemasangan peralatan menggunakan teknologi dari Norway itu dilakukan secara berfasa, sejak 2006 merangkumi tiga lokasi perairan, iaitu Laut Andaman, Laut Sulawesi dan Laut China Selatan, bagi memastikan sebarang risiko tsunami berpunca daripada pergerakan kerak bumi di tengah laut berupaya dikesan lebih awal.

Bagaimanapun, fungsi boya tsunami pertama ditempatkan kira-kira 500 kilometer (km) dari Langkawi dan kira-kira 60km dari Bandar Aceh, Indonesia di Laut Andaman pada 30 Disember 2005 didapati tidak memancarkan data setiap sela masa 15 minit, sebelum pemeriksaan lanjut mendapati alatan itu hilang daripada pusat sauh.

Alatan sama diletakkan berhampiran Pulau Layang-Layang, Sabah dekat Laut China Selatan pada 7 Mac 2006 turut menimpa nasib sama dan dikategorikan sebagai dilupuskan pertengahan tahun lalu, selepas alat berharga jutaan ringgit itu hilang, sama ada hanyut dibawa arus atau menjadi 'mangsa' perbuatan vandalisme.

LAMPIRAN 13
BERITA HARIAN (ISU): MUKA SURAT 8
TARIKH: 5 OKTOBER 2018 (JUMAAT)

Tun M gesa industri bantu tingkat kualiti TVET

➔ Sokongan penting bantu graduan bersaing dalam pasaran domestik, global

Oleh Mohd Anwar Patho Rohman
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► Kuala Lumpur

Tun Dr Mahathir Mohamad mahu pihak industri menyokong dan membantu meningkatkan kualiti Pendidikan dan Latihan Teknikal dan Vokasional Malaysia (TVET), bagi memacu Malaysia menjadi negara maju serta 'harimau dunia.'

Perdana Menteri berkata, pembabitan dan sokongan pihak industri penting untuk me-

ningkatkan kualiti latihan dan ilmu TVET, sekali gus membantu mempersiapkan graduan bersaing dalam pasaran industri domestik serta global.

Katanya, ia sebahagian daripada program pembangunan insan terancang bagi melahirkan modal insan berkompentensi dan berkualiti tinggi.

"Saya sarankan lebih banyak pihak industri di Malaysia bergiat aktif dalam pembangunan modal insan dan menyokong pendidikan TVET.

"Pemain industri utama juga diharap membantu meningkatkan kualiti tenaga kerja dan modal insan, terutama graduan dalam bidang TVET.

Bangunkan semula negara

"Saya yakin dan percaya komitmen serta iltizam tinggi pihak berkepentingan di bawah TVET dan sokongan penuh pihak industri, kita berjaya memulihkan dan membangunkan semula Malaysia menjadi negara maju dihormati serta disegani sebagai harimau dunia,"

katanya pada majlis Anugerah Tangan Emas Perdana Menteri (ATEPM) anjuran bersama Kementerian Sumber Manusia dan Kementerian Kerja Raya di sini, semalam.

Pemenang ATEPM bagi kategori pengajar dimenangi Mohd Alim Nulhakim dari Institut Latihan Perindustrian (ILP) Jitra, Kedah.

Bagi kategori pelajar, ia dimenangi Simon Wong Tian Bing dari DRB-HICOM University of Automotive.

Kedua-dua pemenang menerima piala dan hadiah wang berjumlah RM10,000 disampaikan Dr Mahathir.

Yang turut hadir, Menteri Sumber Manusia, M Kulasegaran bersama timbalannya, Datuk Mahfuz Omar; Timbalan Menteri Kerja Raya, Mohd Anuar Mohd Tahir serta Timbalan Menteri Belia dan Sukan, Steven Sim Chee Keong.

Dr Mahathir berkata, pendidikan TVET bukan sahaja menyumbang kepada pembangunan negara, malah penting un-

tuk Malaysia menghadapi Revolusi Industri 4.0 (IR4.0).

Dalam aspek ini, Perdana Menteri merujuk kemampuan graduan dan tenaga pengajar TVET di institusi latihan industri yang mampu menghasilkan ciptaan belum pernah dihasilkan sebelum ini.

Penuntut TVET raih hadiah

"Saya kagum dengan hasil karya tangan penuntut TVET. Banyak hadiah mereka raih, banyak barang yang sebelum ini belum pernah dicipta, kini ada.

"Saya yakin mereka akan berjaya memasarkan barang ciptaan mereka.

"Ini sepatutnya diberi perhatian untuk memajukan negara dan menghadapi IR 4.0," katanya.

Perdana Menteri turut menggariskan tiga nilai murni perlu dipegang dan diamalkan rakyat menjadi maju dan berjaya dalam sesuatu bidang diceburi termasuk industri iaitu rajin, amanah dan berdisiplin.

LAMPIRAN 14
THE STAR (NEWS): MUKA SURAT 4
TARIKH: 5 OKTOBER 2018 (JUMAAT)

FT Ministry leads by example

Its own canteen operator fined for not using biodegradable food containers

By BAVANI M
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THE Federal Territories Ministry has fined its own canteen operator for not using biodegradable products, a move ministry officials say reinforces their commitment to ban all forms of plastic that are harmful to the environment.

The ministry's Strategic Development Division secretary Lokman Jamaan said imposing the fine on their canteen shows that they were serious in pushing forward the green agenda.

"We are not going to stop there. In fact, all canteen and cafe operators in all three local authorities – Kuala Lumpur City Hall (DBKL), Putrajaya Corporation (PPJ) and Labuan Corporation – will have to adhere to the ministry's policy on the use of biodegradable materials."

This includes food truck operators and government-run food courts and any businesses that require licence from the local authority.

Earlier, Lokman and DBKL senior officers and staff led by Federal Territories Minister Khalid Abdul Samad went on a one-hour walkabout at Bangsar Village shopping mall in Jalan Telawi, Bangsar.

Khalid was extremely attentive and thorough with the operators manning the outlets, asking them questions as they brought out their biodegradable plastic bags, cups and utensils.

At a bookshop, he picked up a plastic bag and enquired how many books the bag could hold.

At a cafe, he asked whether they were using biodegradable straws and paper cups. When the staff showed him a paper cup, Khalid was quick to point out that the cup's cover was plastic, and advised the staff to use alternative products that are more environmentally friendly.

When asked how he would rate the mall's effort in going green, Khalid said he would give Bangsar



Khalid (right) looking at paper bags during his walkabout in Bangsar Village as Federal Territories Ministry secretary-general Datuk Seri Adnan Ikhsan (second from right) looks on.

Village an A+ rating.

"From what I have seen, they deserve it for their effort," he said, adding that most of the mall's operators were already using paper and cloth bags.

"I was told that some have even been using it for 20 years since most of their brands are from overseas; so it's a good practice. I believe based on what I have seen today, we should not have any problem pushing the green message forward," he said.

"We hope that soon, with more people using biodegradable packaging, it would push for demand (for

biodegradable packaging) and bring prices down," he added.

The ministry banned the use of plastic and polystyrene food packaging in January last year with enforcement kicking off in September the same year.

"From Jan 1 to September, we issued summonses to 211 operators for not using biodegradable packaging," Khalid said, adding that from September till now, 32 outlets were fined.

"My hope is that the numbers will gradually decrease," he said.

Khalid also advised operators to migrate from using plastic straws to

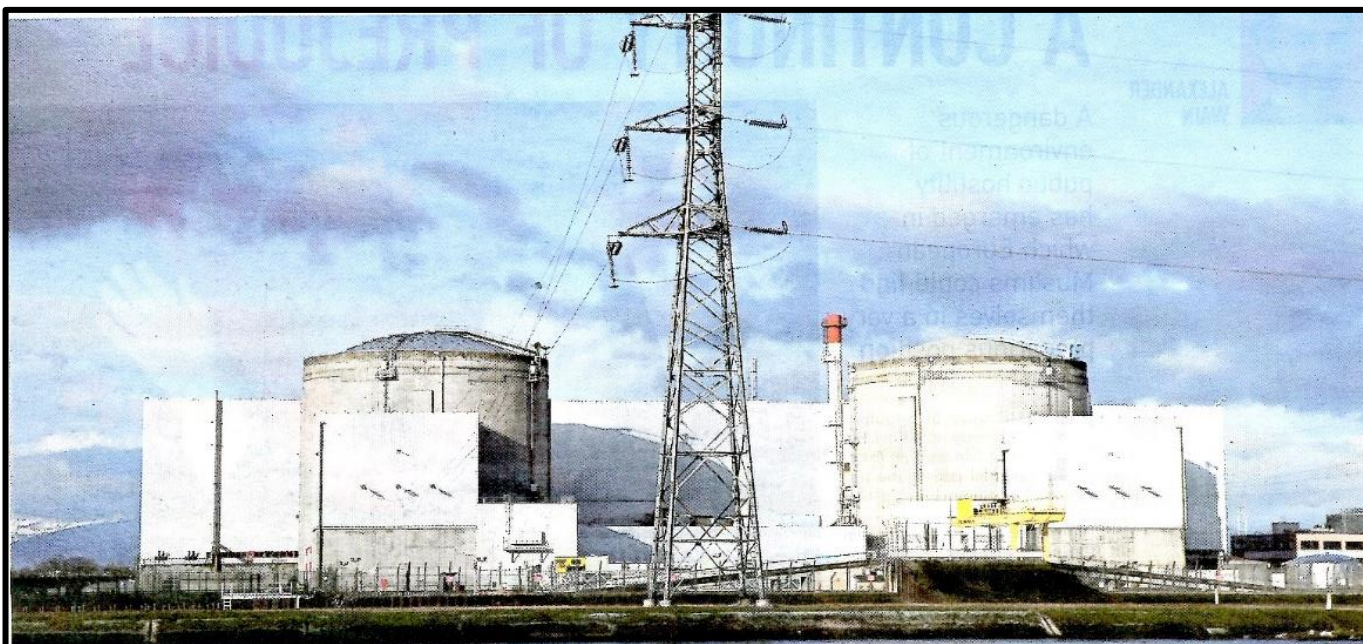
those made of paper, bamboo or even steel. "That's why we have included this as one of the criteria when applying for a premises licence."

"Those who don't comply with this, risk having their licence terminated," he said.

"This change is happening globally and we cannot afford to be left behind," Khalid added.

Recently, the ministry announced its ban on plastic straws in the Federal Territories of Kuala Lumpur, Putrajaya and Labuan for 2019 with enforcement to start in 2020.

LAMPIRAN 15
NEW STRAITS TIMES (LETTERS): MUKA SURAT 20
TARIKH: 5 OKTOBER 2018 (JUMAAT)



France's oldest Electricite de France nuclear power station is in the eastern village of Fessenheim. Nuclear power should remain an option for Malaysia. REUTERS PIC

CLIMATE CHANGE

NUCLEAR POWER IS OUR GREEN FUTURE

NUCLEAR power was Malaysia's last energy option during Tun Dr Mahathir Mohamad's first tenure as prime minister. The policy was rescinded by his two successors, who studied nuclear as a possible part of our energy mix in the peninsula.

However, now that Dr Mahathir is back at the helm, nuclear power is again out of any energy policy consideration.

He declared during his address at the Conference of the Electric Power Supply Industry (Cepsi 2018) that Malaysia would instead explore full use of domestic coal reserves for baseload power generation.

His stand against nuclear power is not surprising. In a number of his blog posts, he lamented over disturbing experiences with radioactive materials called "amang" during the Asian Rare Earth Bukit Merah controversy.

He claimed that until today, scientists had failed to offer an acceptable solution to the radioactive waste conundrum.

Be it in office or out, he said that nuclear power should never be an option for Malaysia.

It, however, feels like we are unwittingly turning the clock back to the 1980s.

When he opts for coal, a number of prominent people — such as Bill Gates, former United States president Barack Obama and former Greenpeace Canada president Patrick Moir — embrace nuclear power.

This is because nuclear power is accepted as the only proven solution for a carbon-free baseload electricity generation.

Nuclear power was so unexpectedly popular in the last decade that there was even a brief period of global nuclear renaissance when climate change felt inevitable and crude oil price hikes seemed unending.

Almost immediately, unfortunately, the Fukushima nuclear accident occurred in 2011.

In spite of the accident, 436 nuclear power reactors are in operation in 31 countries, while 55 new reactors are under construction.

Even Japan, which experienced Fukushima first hand, as well as the Hiroshima and Nagasaki atomic bombings, is gradually restarting its nuclear power plants to meet domestic electricity demands.

Germany, on the other hand, shut down nuclear-powered plants post-Fukushima.

In place of the domestic nuclear power, Germany imports electricity from, ironically, nuclear-powered France, while sweating over a creeping increment of carbon index due to their higher reliance on fossil fuels.

All these demonstrate the importance of nuclear power in advancing the national interest while mitigating climate change.

It is worrying when we opt for coal in the midst of a global war against climate change.

While coal is cheap and abundant, making it the most widely-used source of energy for power generation, one cannot but notice greyish thick smog arising from the chimneys of coal-fired power plants in operation.

The smoke pollutes surrounding air and water, and affects the health of the neighbouring communities.

Exposure to coal and its by-product at these plants possibly contaminates the food chain.

The burning of coal emits humongous amount of greenhouse gases to the atmosphere.

Even the "clean coal" technology, according to the guidelines of International Finance Corporation and the World Bank, as championed by Tenaga Nasional Bhd, is not clean as it emits poisonous greenhouse gases, albeit at a much reduced amount.

Since we are fast approaching the breaking point of greenhouse gases at 425 parts per million, we should accept only zero carbon emission instead of a mere reduction.

Coal is not the answer for our future energy needs.

On the other hand, nuclear industry offers proven solutions to radioactive waste problems.

The first approach is by closing the fuel cycle loop as in recycling

nuclear spent fuels as what France has done for decades and what Gates' TerraPower is working on.

The second option is by storing the high-level radioactive wastes in a long-term underground repository, just like in Finland, Sweden and France.

One should note that this radioactive-waste repository is like a treatment facility where we store and monitor the activated nuclear materials.

Unlike chemical waste, which remains the same forever, radioactive waste decays according to its various half-lives. With time, its radioactivity abates and becomes manageable.

Nuclear power is neither popular nor easy. But nuclear power, in tandem with renewable energy and long-term power storage, offers a solution for a greener future.

It should, therefore, remain an option for Malaysia.

DR MOHD SYUKRI YAHYA
 Bandar Baru Bangi, Selangor

LAMPIRAN 16

SINAR HARIAN (KUALA SELANGOR/ TG KARANG): MUKA SURAT 33
TARIKH: 5 OKTOBER 2018 (JUMAAT)



Mohd Shaid (kanan) meninjau kawasan tapak pelupusan sampah haram.

Tapak sampah haram masih wujud

IJOK - Pusat pelupusan sampah haram di Kampung Seri Sentosa, di sini masih beroperasi seperti biasa meskipun ada 'penguatkuasaan' dan gesaan wakil rakyat supaya tempat itu ditutup serta merta.

Adun Jeram, Mohd Shaid Rosli menjelaskan, pihaknya kesal apabila agensi berkaitan masih memandangkan remeh terhadap isu pelupusan sampah haram di kawasan itu.

"Sebelum ini saya ada panggil agensi terbabit untuk bincang isu ini tapi bagi banyak alasan jarak jauh dan kakitangan tak cukup menyebabkan isu ini tiada penyelesaian.

"Hanya bidang kuasa agensi terbabit boleh menutup kawasan pelupusan sampah haram itu memandangkan pihak berkuasa tempatan (PBT) yang lain hanya

boleh kompaun kenderaan yang keluar masuk," katanya.

Mohd Shaid menegaskan, pihaknya turut meninjau kawasan terbabit buat kali kedua berikutan masih ada lori muatan sampah pelbagai saiz yang keluar masuk tanpa sebarang sekatan.

"Masih ada lori sampah keluar masuk ke kawasan tanah milik persendirian ini sedangkan tapak ini adalah untuk penempatan dan menyebabkan penduduk lain berdepan isu bau busuk.

"Isu sudah dipanjangkan kepada pihak berkenaan malah perbincangan sudah dibuat bersama wakil Pejabat Tanah dan Daerah Kuala Selangor dan Majlis Daerah Kuala Selangor (MDKS).

"Saya difahamkan, tanah ini akan dirampas selepas tempoh 90 hari," katanya.

LAMPIRAN 17

NEW STRAITS TIMES (NEWS/ NATION): MUKA SURAT 64

TARIKH: 5 OKTOBER 2018 (JUMAAT)

POLLUTION

DANGER POSED BY MICROBEADS

Bio accumulation in marine life may cause plastic to enter people's bodies

BADRUL KAMAL ZAKARIA
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POLLUTION caused by plastic waste materials in our oceans, regardless of size, poses a threat to marine life and humans.

Oceanography expert Datuk Dr Sukarno Wagiman said a major problem had been occurring in the oceans worldwide due to the existence of marine debris comprising microplastic or microbeads.

He said the garbage that polluted the world's oceans was divided into two categories: biodegradable garbage that included things such as logs and wood and non-biodegradable garbage consisting of plastic, microplastic and microbeads.

"Scientists worldwide are worried about non-biodegradable garbage, especially plastic, which are made from chemicals. These items take a very long time to decompose.

"What is more worrying is that

the garbage, categorised as marine debris, will be drifted at sea according to currents or the wind direction. In Malaysia, areas in the peninsula's west coast will have a lot of garbage concentrated along its coastlines when the southwestern monsoon winds blow.

"A similar thing will occur along the peninsula's east coast during the northeastern monsoon season.

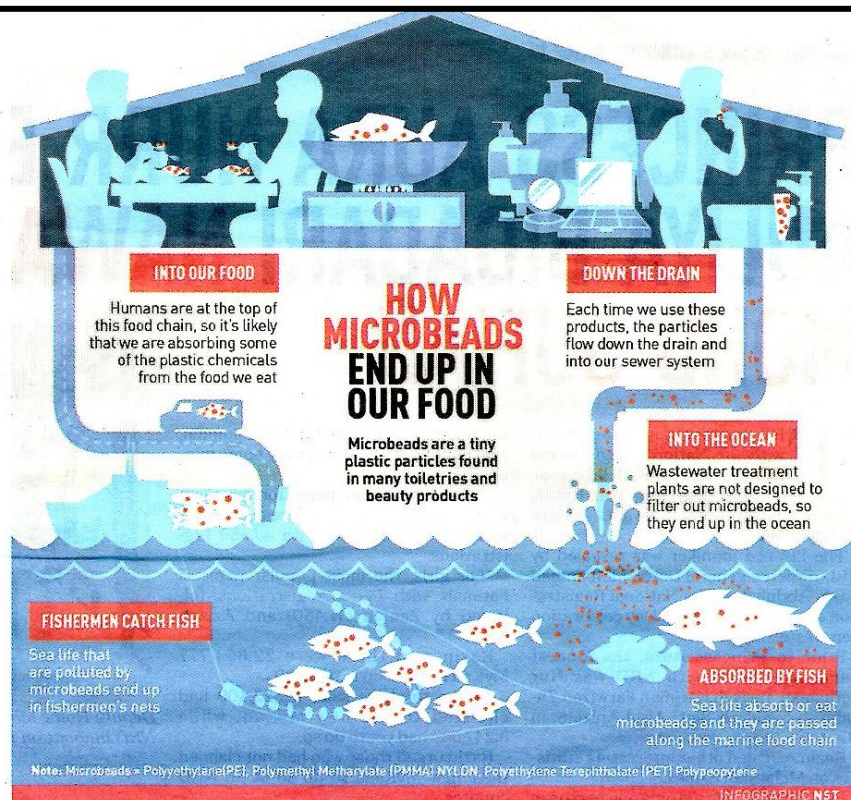
"Garbage will be blown towards the coastline.

"When there are no winds, the garbage will drift according to ocean currents and it could end up anywhere," he told the New StraitsTimes Press.

Sukarno, who is a former department of marine park Malaysia director-general, said the drifted garbage could kill any life form in the ocean.

"The plastic is made from chemical substances. These plastic-based garbage will be torn apart, but they will not disintegrate totally in the water. Instead, it will become smaller particles. At a glance, we do not see these particles, but it is there in the water.

"Scientists are concerned about how these small particles of plastic will become food for marine life such as fish. This situation is referred to as bio accumulation and (the waste) will



be absorbed into the tissue of marine life."

Sukarno said when people consumed seafood such as fish, the garbage or plastic would enter the people's body or the body of other marine life that fed on those fish.

He said in addition to microplastic pollution in the ocean, the existence of microbeads had become the latest concern among scientists.

"Microbeads are largely used in cosmetics such as sunblock and body lotions. Many countries have banned this substance in toiletry products.

"These bans are due to concerns over microbeads entering

the water system and disturbing marine life such as plankton, which is eaten by other marine life.

"The dangers of these microbeads is similar to the dangers of microplastic," he said.

Sukarno urged the government to conduct awareness campaigns for the community to ensure that people would take better care of the environment, especially the oceans.

"We cannot take this matter lightly. There is no data on this issue. There are some countries which are not concerned about such environmental matter and they may regard the ocean as their garbage dumps.

"What's worse is that ships contribute to the garbage problem in oceans.

"This garbage could drift out to anywhere, even to our country's coastline," he said, adding that efforts needed to be done to correct people's perception about garbage disposal and to step up efforts to promote recycling.

"There must be more awareness as this problem leads to pollution. It poses a danger to shipping activities too as it could become the cause of accidents at sea.

"Big and small debris from garbage can harm marine organisms, either in the open seas or along the coast."

LAMPIRAN 18
NEW STRAITS TIMES (NEWS): MUKA SURAT 64
TARIKH: 5 OKTOBER 2018 (JUMAAT)

No data on solid waste dumped in oceans, says department

MUAR: The National Solid Waste Management Department does not have any data on solid waste which is dumped in the country's oceans

This is because the department's scope, only covers land areas. Sources from the department told the New Straits Times Press that no research has been made on the matter so far.

However, the source did not de-

ny the existence of such forms of pollution.

He admitted that the dumping of plastic waste into the oceans was likely due to the lack of upgrades made on the current solid waste management system and the usage of plastic by people.

"The garbage and solid waste like plastic come from places outside of Malaysia. This happens as our country is surrounded by the sea.

"Rubbish from surrounding countries flow into our waters. There are some other countries which do not make any effort to dispose of their waste properly," the source said, while admitting that the issue could not be solved in the short term.

"It is also possible that we (the department) face certain problems when it comes to this matter.

"There are areas which are be-

yond our publicity scope and those areas do not have any recycling campaigns or waste separation.

"We need to tackle this problem immediately, or else it will become worse and we will have more difficulty solving it in the future," he said.

The source revealed that Malaysians threw away 42,000 tonnes of solid waste on a daily basis or approximately 1.2 million

tonnes every month.

He said of the total solid waste thrown away, 12 per cent involved solid waste made out of plastic.

"Despite the high amounts of solid waste in the country, people have began to accept recycling campaigns and put them into practice.

"At least 21 per cent of our solid waste is recycled now, and we hope the campaign will continue in the future."

LAMPIRAN 19
THE STAR (VIEWS): MUKA SURAT 45
TARIKH: 5 OKTOBER 2018 (JUMAAT)

> Turn to solar power

I fully support our PM's stand that nuclear power should never be an option for Malaysia due to the radioactive waste problem. Germany and now China have actively promoted and are now relying more and more on solar energy. Malaysia should also do the same. – Jeff Yeoh, Selangor

LAMPIRAN 20
UTUSAN MALAYSIA (LUAR NEGARA): MUKA SURAT 50
TARIKH: 5 OKTOBER 2018 (JUMAAT)

Tsunami tiba lapan minit selepas gempa

PALU 4 Okt. - Data yang diperoleh daripada Badan Maklumat Geospasial (BIG) Indonesia mendedahkan kejadian tsunami yang melanda bandar Palu pada Jumaat lalu bermula dengan fenomena air laut surut sekitar pukul 6.08 petang waktu tempatan.

Portal berita *Kompas.com* melaporkan, lapan minit kemudian, ombak tsunami terbentuk dan membadai kawasan pesisir pantai.

Jurucakap BIG, Mohamed Arief Syafil berkata, tsunami direkodkan mula terbentuk enam minit selepas gempa melanda Palu dan pada pukul 6.10 petang waktu tempatan, ombak besar itu sudah melanda pelabuhan Palu di Pantoloan.

Jarak dari bandar ke Pelabuhan Palu hanya sekitar 28 kilometer dengan tempoh tsunami



PEMANDANGAN dari udara sebahagian kawasan yang musnah selepas dilanda gempa bumi dan tsunami di daerah Tondo, Palu, Indonesia. - REUTERS

yang melanda kedua-dua kawasan tersebut tidak sampai satu minit.

"Tinggi maksimum ombak

tsunami yang direkodkan di Pantoloan adalah dua meter dan ukurannya dijangka lebih tinggi ketika membadai bandar

Palu yang terletak di kawasan teluk," katanya.

Badan Pengurusan Nasional Bencana (BNPB) sebelum ini menyatakan ombak tsunami di bandar Palu berukuran enam meter.

Dalam pada itu, seorang pengkaji di Institut Sains Indonesia (LIPI), Eko Yulianto memaklumkan langkah-langkah pencegahan akibat tsunami perlu seiring dengan usaha mendidik masyarakat mengenai gempa bumi.

"Kami pernah temu bual seorang mangsa yang terselamat dalam bencana tsunami di Mentawai pada 25 Oktober 2010. Mangsa memberitahu dia melarikan diri selepas melihat berita yang melaporkan risiko berlaku tsunami selepas gempa bumi berlaku ketika itu," jelasnya.

LAMPIRAN 21 NEW STRAITS TIMES (WORLD): MUKA SURAT 70 TARIKH: 5 OKTOBER 2018 (JUMAAT)

GENDER BARRIER

Women scientists still 'undervalued' despite twin Nobel wins

PARIS: With two Nobel prize winners in as many days, women scientists have welcomed the research community "waking up" to the feats of their female peers, but insist they remain underpaid and undervalued compared with men.

On Tuesday, Canadian scientist Donna Strickland became the third woman in history to win the Nobel Physics Prize. Twenty-four hours later, United States biochemist Frances Arnold was awarded the chemistry prize, the fifth woman to receive the honour.

"It feels like the world is waking up to the ingenuity of women scientists," Jess Wade, a physics professor at Imperial College London, said.

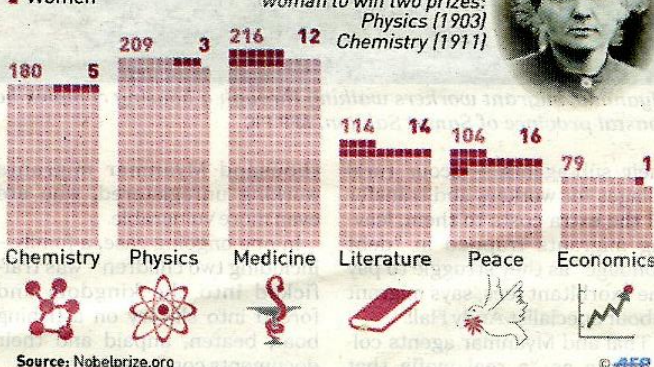
"It is an honour to be working in science at the same time as such inspirational women."

Despite the relatively strong showing at the Nobels this year — historically, just 19 of more than 600 science laureates have been female — others pointed out sev-

WOMEN IN NOBEL PRIZE HISTORY

■ People who have received at least one prize, by category

■ Women



eral persistent barriers for women in the world of science.

"Things are much better than they were decades ago, but we still have a long way to go," said Meg Urry, professor of physics at

Yale University.

"Women starting out in physics in college already notice they are being treated differently than men, and for women of colour it is even worse."

Indeed, while almost exactly half of science PhDs in the US last year were submitted by women, for chemistry just 39 per cent were.

For physics, that figure dropped to 18 per cent, according to the American Physics Society.

Roisin Owens, biochemical engineer at the University of Cambridge, said institutions need to do more to fix what she called the "leaky pipeline" of women dropping out of science for reasons men are less likely to encounter.

"There are these tremendous women scientists who are almost equal numbers in these fields, then all of a sudden we get to professors and it's down to 30 per cent or in some places 10 per cent," she said.

Although she welcomed the acclaim received by Strickland and Arnold this week, "people should resist the temptation to think that these prizes are being given now simply because they are women". **AFP**

LAMPIRAN 22
MALAY MAIL (WORLD): MUKA SURAT 17
TARIKH: 5 OKTOBER 2018 (JUMAAT)

Nasa addresses mysterious space station hole

LOS ANGELES — Nasa sought on Wednesday to tamp down speculation that sabotage caused a tiny hole found last month in the side of a Russian module docked at the International Space Station, but the mystery remained unsolved.

Nasa stressed in a brief statement issued from its Washington headquarters that Dimitri Rogozin, general director of the Russian space agency Roscosmos, had in public comments this week ruled out a manufacturing defect as the cause.

However, Nasa added, "this conclusion does not necessarily mean the hole was created intentionally or with mal-intent", as some media outlets interpreted Rogozin's remarks as suggesting.

Rather than giving greater credence to foul play, the elimination of a manufacturing defect as causing the hole "indicates that this is an isolated issue which does not categorically affect future production", Nasa said.

Roscosmos and Nasa have each opened

their own investigations of the 2mm-wide hole detected in late August on the exterior wall of a Russian Soyuz capsule docked to the space station after ground operators reported slight dips in pressure levels.

The puncture has since been patched with tape and sealant, halting the oxygen leak, and officials said the current crew, consisting of three US astronauts, two Russian cosmonauts and one German, were never in any danger.

Rogozin previously raised the possibility

of a deliberate act in comments reported by the Russian news agency RIA Novosti, which quoted him earlier this month as saying it appeared that a drill had been used by an "unsteady hand", leaving metal around the hole scraped.

The agency's spokeswoman Megan Powers said on Wednesday renewed media reports about the possibility of intentional damage to the Soyuz module stemmed from "rough translation" by some Western news outlets of Rogozin's latest comments. — Reuters

LAMPIRAN 23 UTUSAN MALAYSIA (LUAR NEGARA): MUKA SURAT 51 TARIKH: 5 OKTOBER 2018 (JUMAAT)

Lockheed Martin perkenal kapal angkasa mendarat di bulan

WASHINGTON 3 Okt. - Syarikat aeroangkasa, Amerika Syarikat (AS), Lockheed Martin semalam memperkenalkan kapal angkasa terbaharu yang boleh mendarat di permukaan bulan.

Syarikat itu turut merancang menghantar angkasawan ke bulan buat pertama kali sejak 1972 sebagai langkah awal untuk menerokai Marikh, iaitu sebahagian daripada dasar rasmi AS yang ditetapkan oleh Presidennya, Donald Trump.

Bagi merealisasikan matlamat ini, Pentadbiran Angkasa dan Aeronautik Negara (NASA) meminta pengeluar industri angkasa lepas membentangkan rancangan membina sebuah stesen angkasa lepas yang mengelilingi bulan, dikenali sebagai Lunar

Gateway dan juga kapal angkasa yang akan mendarat di bulan.

Stesen angkasa lepas itu dirancang dibina dengan bantuan negara-negara lain pada 2020-an dan mampu memuatkan empat orang menjelang 2026, mengikut kalender NASA pada Ogos lalu.

Kapal angkasa Lockheed Martin direka untuk berulang-alik di antara permukaan Bulan dan mengorbit Lunar Gateway itu diperkenalkan ketika Kongres Angkasawan Sedunia di Bremen, Jerman.

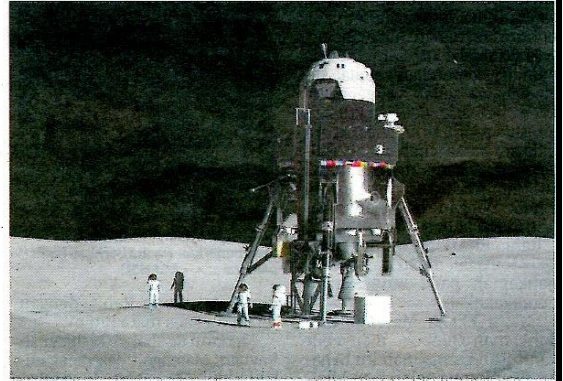
Kapal angkasa itu boleh memuatkan empat penumpang, membawa satu tan peralatan dan boleh tinggal di bulan sehingga dua minggu tanpa mengisi semula minyak sebe-

lum kembali ke stesen.

Secara kasarnya, kapal angkasa berkaki empat itu kelihatan seperti kapal angkasa digunakan angkasawan pertama yang berjalan ke bulan pada 1969 tetapi versinya lebih tinggi.

Sebelum itu, NASA mahu menghantar angkasawan mengelilingi Bulan selama lapan hari pada 2023 dengan menaiki kapal angkasa The Orion, kapal angkasa keluaran Lockheed Martin.

Kapal angkasa tersebut akan dihantar ke angkasa lepas menggunakan Sistem Pelancaran Angkasa Lepas (SLS), masih dalam pembinaan dan direka agar menjadi roket paling berkuasa pernah dibina. - AFP



KAPAL angkasa yang didakwa boleh mendarat di permukaan bulan mampu memuatkan empat penumpang. - AGENSI