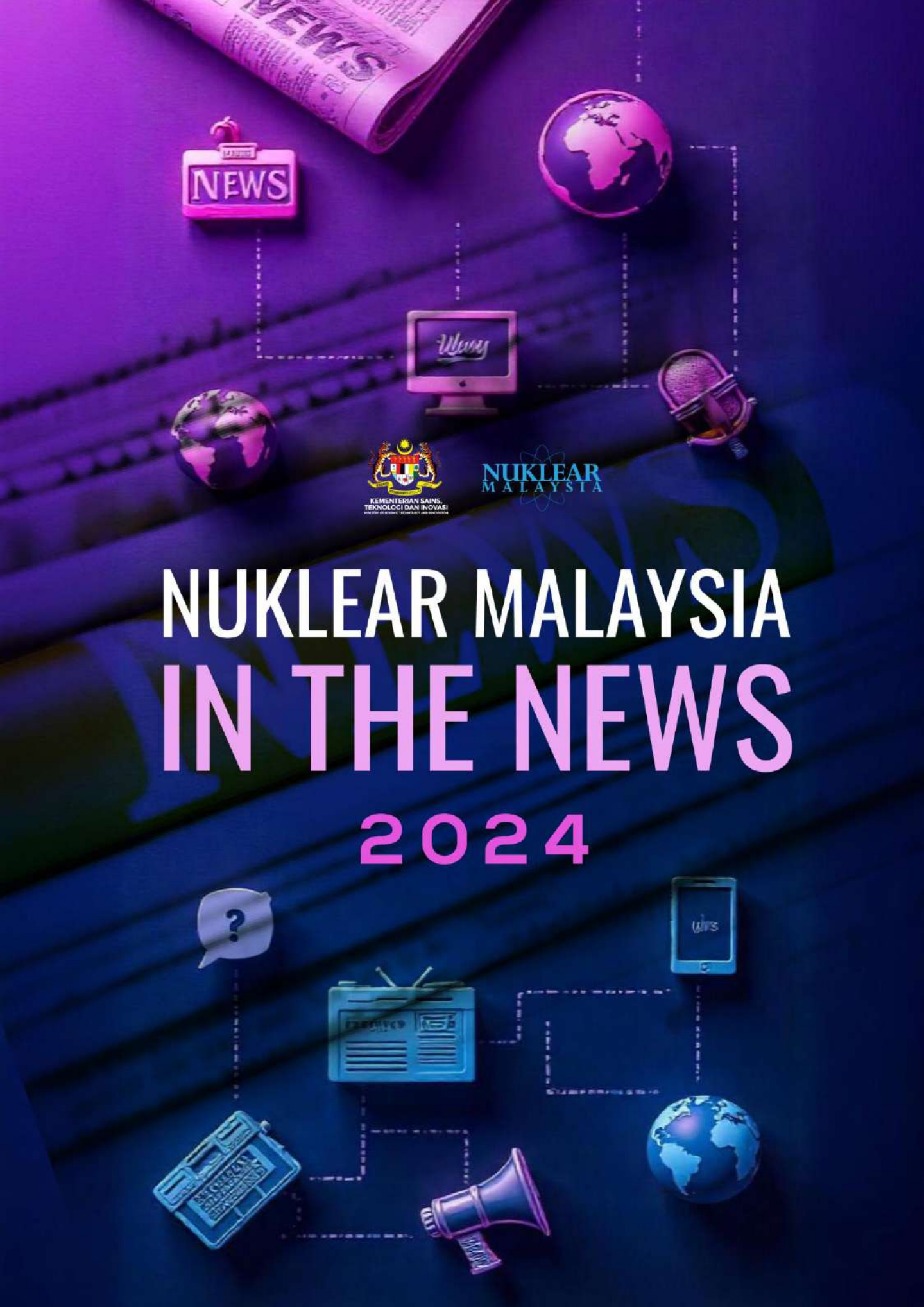


NUKLEAR MALAYSIA IN THE NEWS 2024

Advisor
YBrs. Dr. Rosli Darmawan

Coordinator
Nor Suriani Mohd Zin
Carlos Linton

Designer
Mohd Idzwan Md Zin

Corporate Communication Unit
Muhammad Asyraf Mat Siliji

Thank you notes
This is a compilation of newspaper clippings and online media to portray the successful story of Malaysian Nuclear Agency (Nuklear Malaysia) in 2024. We would like to thank to all media for the co-operation and continuous support. It is hoped that the story ties between reporters and researchers will continue to enhance Malaysia's future development in nuclear science and technology.

Newspaper

Konsep teknologi plastik ke bahan api lebih berdaya inovatif

Sisa plastik jadi bahan bakar gred tinggi

Oleh AMREE AHMAD

BANGI – Masalah kebanjiran sampah plastik di negara ini bakal dapat diatasi menerusi kerjasama dua pihak bagi mengubah sisa tersebut menjadi bahan bakar bernilai tinggi.

Ia susulan pemeteraian bersejarah melibatkan memorandum persefahaman (MoU) antara Agensi Nuklear Malaysia dengan Alam Flora Environmental Solutions Sdn. Bhd. (AFES).

Menerusi perjanjian itu, kedua-dua pihak akan melakukan kerjasama pembuktian konsep teknologi plastik ke bahan api yang julung kali dilaksanakan di Malaysia secara inovatif.

"Insya-Allah, kami sasar guna sinaran yang bukan sahaja murah malahan sisa boleh pula diubah jadi bahan baharu," kata Ketua Pengarah Nuklear Malaysia, Dr. Rosli Darmawan.

Terdahulu, beliau hadir memeterai MoU berkenaan dengan Ketua Pegawai Eksekutif Alam Flora Sdn. Bhd. yang juga Pengarah AFES, Datuk Mohd. Zain Hassan di sini semalam.

Dua tahun lalu, Malaysia gempar apabila disenaraikan saintis Belanda, Lourens Meijer sebagai negara ketiga terbesar pengeluar sisa plastik di dunia selepas Filipina dan India.

DR. ROSLI (kiri) bertukar-tukar dokumen dengan Mohd. Zain pada majlis menandatanganio Mou antara Agensi Nuklear Malaysia dan AFES di Bangi semalam.

Kajian selari dapatan Sahabat Alam Malaysia dan Persatuan Pengguna Pulau Pinang yang mendakwa lebih 1.1 juta tan sampah tersebut dibuang secara per kapita setiap tahun.

Pihak kerajaan walau bagaimanapun sudah bertindak mewartakan Pelan Hala Tuju Ke Arah Sifar Penggunaan Plastik Sekali Guna 2018-2030 sebagai langkah pemuliharaan.

Mengulas lanjut, Rosli berkata, teknologi pengurusan sisa tersebut membolehkan plastik ditukar untuk bernilai komersial termasuk dijadikan diesel bergred tinggi seperti Euro 5.

"Pada masa sama, kerjasama penyelidikan dan pembangunan (R&D) antara dua pihak ini bakal melonjak Indeks Inovasi Global (GII) negara kita diyakini pelabur asing," jelasnya.

Sementara itu, Mohd. Zain berkata, sudah tiba masa pihaknya beralih kepada teknologi baharu yang lebih lestari kepada alam sekitar dalam pengurusan pelupusan sisa pepejal.

Justeru beliau teruja bekerjasama dengan Nuklear Malaysia yang terkenal ada kepakaran dan pengalaman terbaik bertaraf dunia dalam bidang R&D meliputi pelbagai jenis sektor.

Walaupun pihaknya tidak menetapkan sebarang garis masa akhir pelaksanaan secara komersial, beliau optimis penggunaan teknologi sinaran terkini dapat pula membantu AFES.

38 Niaga!
Kosmo! KHAMIS 18 JANUARI 2024

Malakoff manfaatkan teknologi nuklear

PETALING JAYA – Malakoff Corporation Berhad (Malakoff) mempertingkat pendekatan kemampanannya melalui kerjasama strategik antara syarikat ahlinya, Alam Flora Environmental Solutions (AFES) yang juga merupakan anak syarikat Alam Flora Sdn. Bhd. bersama Agensi Nuklear Malaysia.

Ia menerusi pertukaran dokumen Memorandum Persefahaman (MoU) di pejabat Agensi Nuklear Malaysia kelmarin, bertujuan memanfaatkan teknologi nuklear termaju untuk menangani cabaran alam sekitar.

Melalui kerjasama berkenaan, teknologi *Radiation Assisted Pyrolysis* (RAP) akan digunakan untuk menukar sisa plastik kepada bahan api, selain bagi menghasilkan lebih banyak produk bernilai tinggi secara cekap pada kos yang lebih rendah.

AFES akan memikul tanggungjawab mengumpul dan menyusun sisa kitar semula, manakala Agensi Nuklear Malaysia pula memanfaatkan kepakaran inovatif mereka untuk mengubah bahan berkenaan kepada bahan api dan produk nilai tambah baharu.

Pengarah Urusan dan Ketua Pegawai Eksekutif Kumpulan Malakoff, Anwar Syahrin Abdul Ajib berkata, pihaknya percaya langkah memupuk perkongsian yang betul penting untuk membentuk masa depan lebih hijau.

"Inovasi menukar bahan kimia daripada sisa plastik kepada bahan api adalah sangat menarik kerana ia bukan sahaja menangani isu pengumpulan sisa di tapak pelupusan sampah, malah mengubahnya menjadi sumber yang berharga.

"Penyelidikan dan pembangunan mengenai perkara ini telah pun dimulakan oleh kedua-dua AFES dan Agensi Nuklear Malaysia dengan penglibatan Agensi Tenaga Atom Antarabangsa yang mana pelantar ujian telah dibina, manakala beberapa ujian eksperimen telah berjaya dilaksanakan," katanya dalam satu kenyataan.

KETUA Pengarah Agensi Nuklear Malaysia, Dr. Rosli Darmawan (kiri) dan Pengarah AFES, Datuk Mohd. Zain Hassan pada sesi pertukaran dokumen di Bangi kelmarin.

Padi farmers enjoying higher yield

By JUNAID IBRAHIM
junaid.ibrahim@thestar.com.my

SEKINCHAN: Padi farmers who used the locally-developed NMR152 seed are enjoying a higher yield between 20% and 60% since its introduction, says Science, Technology and Innovation Minister Chang Lih Kang.

The padi seed that was launched in 2021 has proven to be more resilient against extreme weather which includes drought and flood, he said.

He said the seed has become popular among farmers as it could help in reducing cost while producing higher yields.

"The NMR152 variety was developed by the Malaysian Nuclear Agency and it is more resilient against extreme weather.

"The seed has been more popular due to its higher productivity," he told reporters after visiting an NMR152 yielding site at HMN Sdn Bhd here yesterday.

Chang said his ministry would be discussing several issues with the Agriculture and Food Security Ministry, especially matters related to the new seed (NMR152) quota for farmers.

He said that currently, on average, the usage of the seeds distributed to padi farmers nationwide ranged between 10% to 20%.

"We aim to reach even greater numbers, probably at 30%."

In Selangor, he said about 24% of padi farmers have been using the NMR152 seed.

He also said that his ministry would be in talks with the Agriculture and Food Security Ministry to organise sandbox projects to expedite the development of NMR152 and increase its distribution.

"This is an important effort to be made in order to mitigate food security issues in Malaysia," he added.

Better care, better yield: A view of a padi field in Sekinchan. — FAIHAN GHANI/The Star

HMN Sdn Bhd managing director Datuk Mansor Mohd Nor said the average padi fields in Selangor are about 18,000ha.

"Out of the total, about 3,000ha to 4,000ha are using the seed. On average, farmers can yield an extra eight to 10 tonnes of the crop," he said.

Nuclear Malaysia senior research officer Dr Sobri Hussein said the higher yield can be achieved with padi field care and management.

"The higher yield could be achieved if there is proper care and management that included soil types," he said.

In LANGKAWI, Muda Agricultural Development Authority (Mada) chairman Datuk Dr Ismail Salleh said Kedah's padi fields were unaffected by the El Nino phenomenon.

"So far, half of the crops have already been harvested. El Nino can affect padi at two stages – the first 60 days of planting and the pollination stage," he said.

He said the hot weather is expected to last till June, when the new planting stage takes place.

As such, Ismail said the state had taken steps to ensure enough water supply by way of irrigation. He said that the dry spell was not expected to affect the next planting stage.

"Mada has initiated rotational irrigation tailored to the specific needs of rice cultivation in each region based on the crop phases.

"We have advised farmers to use water prudently and minimise wastage to promote sustainable agricultural practices," he said.

Negara sedia perluas teknologi nuklear secara selamat

JOHOR BAHRU – Malaysia bersedia untuk memperluas penggunaan teknologi nuklear dalam pelbagai sektor harian bagi meningkatkan kualiti kehidupan rakyat termasuklah dalam sektor kesihatan dan pertanian.

Ketua Setiausaha Kementerian Sains, Teknologi dan Inovasi (Mosti), Datuk Dr. Aminuddin Hassim berkata, pihaknya telah menjalankan pelbagai penyelidikan berhubung penggunaan nuklear secara selamat bagi menjayakan hasrat itu.

Menurutnya, persepsi negatif segelintir masyarakat yang menganggap teknologi nuklear berbahaya perlu diubah, selari dengan pelaksanaan Dasar Teknologi Nuklear Negara 2030 yang diperkenalkan September tahun lalu.

"Persepsi nuklear itu bahaya adalah tidak benar, ia bergantung kepada sektor dan penggunaan.

"Kita hendak maklumkan bahawa teknologi nuklear yang kita hasilkan untuk tujuan yang aman, sesuai untuk kegunaan seharian rakyat.

"Kita boleh aplikasikan penggunaan teknologi nuklear untuk menyelesaikan masalah. Sebagai contoh, penyelidik Mosti terlibat aktif dalam usaha menyelesaikan isu berkaitan keterjaminan makanan," katanya selepas merasmikan Program Promosi Bersasar Mosti di Hotel Berjaya Waterfront, di sini semalam.

Tambahnya, Mosti mempunyai sebanyak 21 Pusat Khidmat yang menawarkan penyelesaian masalah melalui penggunaan teknologi nuklear selamat.

"Bagi mempromosikan perkhidmatan ini, kita menjalankan program *outreach* mengikut zon untuk berhubung dengan pengguna melalui 'tagline' NUR iaitu Nuklear Untuk Rakyat," jelasnya.

AMINUDDIN (dua dari kiri) melihat bongkah cendawan yang menggunakan teknologi nuklear pada Program Promosi Bersasar di Johor Bahru semalam.

USAS manfaat tanah 8.1 hektar dengan penanaman padi nuklear

Ipoh: Universiti Sultan Azlan Shah (USAS) akan memulakan penanaman padi NMR-152 atau padi nuklear di Mukim Kota Lama Kanan, Kuala Kangsar membabitkan keluasan 8.1 hektar dalam usaha memanfaatkan keluasan tanah terbiar di Perak bagi pembangunan sekuriti makanan.

Pengerusi Jawatankuasa Pembangunan Luar Bandar, Perladangan, Pertanian dan Industri Makanan negeri, Datuk Mohd Zolkafly Harun berkata fasa awal projek rintis Pembangunan Tanah Sawah Terbiar itu merangkumi penanaman seluas satu hektar di tanah terbiar membabitkan lima penduduk Kampung Kandang Hulu, Kota Lama Kanan sebelum disasar untuk diperluaskan lagi kepada keseluruhan 40.5 hektar.

Katanya, selain penanaman secara berskala besar, penanaman berskala kecil menerusi program 'Lamanku, Berasku' turut disasarkan iaitu menerusi pembekalan set lengkap penanaman padi untuk diusahakan secara penanaman polibeg di kawasan rumah masing-masing membabitkan sebanyak 20 rumah penduduk kampung itu.

MOHD Zolkafly (dua kiri) menunjukkan kawasan penanaman padi NMR-152 menerusi projek rintis Pembangunan Tanah Sawah Terbiar di Mukim Kota Lama Kanan, Kuala Kangsar.

Menurutnya, bagi penanaman berskala besar ia membabitkan tiga fasa termasuk fasa kedua di mana ia membabitkan empat plot ujian penanaman seluas 0.2 hektar bagi setiap plot dengan penyertaan lima orang komuniti setempat selain fasa ketiga yang membabitkan penanaman pada keluasan 8.1 hektar.

Mohd Zolkafly yang juga Ahli Dewan Undangan Negeri (Adun) Lintang berkata, projek rintis yang dijangka menampakkan hasil enam bulan dari sekarang itu juga turut dipersetujui dibuat di kawasan perkampungan Orang Asli dalam kawasan Dun Lintang memandangkan penanaman padi varieti berkenaan yang disifatkan tidak terlalu teknikal.

"Padi jenis NMR-152 ini tidak teknikal sangat memandangkan ia tahan cuaca ekstrim dan serangan penyakit, selain hanya memerlukan bekalan air yang minimum bagi penghasilan padi yang optimum. Malah padi boleh dituai dalam masa 110 hari yang justeru dapat mencapai sasaran penanaman padi tiga kali setahun atau lima kali dua tahun," katanya.

8.1 hektar tanah terbiar dimanfaat tanam padi nuklear

IPOH – Tanah sawah terbiar seluas 8.1 hektar di Kampung Kandang Hulu, mukim Kota Lama Kanan, Kuala Kangsar dekat sini akan usahakan semula bagi penanaman padi NMR152 atau padi nuklear oleh Agensi Nuklear Malaysia.

Pengerusi Jawatankuasa Pembangunan Luar Bandar, Perladangan, Pertanian dan Industri Makanan Perak, Datuk Mohd. Zolkafly Harun berkata, kajian projek itu dibuat oleh Stesen Penyelidikan Padi dan Beras Universiti Sultan Azlan Shah (USAS) dan akan dilaksanakan melalui beberapa fasa.

Katanya, benih padi NMR152 menjadi pilihan kerana padinya berproduktiviti tinggi selain tahan serangan penyakit, cuaca ekstrem, kemarau dan banjir.

"Benih padi ini mengambil masa tiga bulan atau 110 hari untuk dituai. Jadi, kita boleh tuai tiga musim setahun atau lima musim dalam dua tahun.

"Benih itu mampu menghasilkan pengeluaran padi lapan hingga 10 tan metrik bagi keluasan satu hektar berbanding tiga hingga lima tan metrik perhektar bagi sekali tuaian," katanya selepas mendengar taklimat wakil USAS di Bangunan Setiausaha Kerajaan Negeri di sini semalam.

MOHD. ZOLKAFLY (kiri) melihat kertas cadangan pembangunan tanah sawah terbiar di Kuala Kangsar ketika sesi taklimat di Ipoh semalam.

Menurut beliau, selain penanaman secara berskala besar di kawasan sawah terbiar, penanaman berskala kecil turut dijalankan menerusi program Lamanku, Berasku.

Menerusi program itu, peserta dibekalkan set lengkap untuk diusahakan secara penanaman polibeg di halaman rumah masing-masing.

Ia merupakan projek rintis yang akan membantu kerajaan negeri dalam memperkasakan sekuriti makanan di Perak dengan agenda Pelan Perak Sejahtera 2030.

Tambahnya, projek itu juga akan diperluaskan di kawasan lain antaranya perkampungan Orang Asli di Dewan Undangan Negeri Lintang.

"Usaha ini dilihat dapat menggalakkan penggunaan tanah terbiar di Perak yang berjumlah 11,013 hektar membabitkan 4,004 lot tanah," katanya.

Sawah terbiar ditanam padi 'nuklear'

IPOH: Seluas 8.1 hektar tanah sawah terbiar di Kampung Kandang Hulu, Mukim Kota Lama Kanan di Kuala Kangsar akan usahakan semula bagi tanaman padi 'nuklear.'

Projek rintis oleh Universiti Sultan Azlan Shah (USAS) itu membabitkan benih padi NMR152 atau lebih dikenali sebagai padi nuklear oleh Agensi Nuklear Malaysia.

Pengerusi Jawatankuasa Pembangunan Luar Bandar, Perladangan, Pertanian dan Industri Makanan negeri, Datuk Mohd. Zolkafly Harun berkata, kajian projek tersebut dilaksanakan oleh Stesen Penyelidikan Padi dan Beras USAS dan akan dijalankan melalui beberapa fasa.

Katanya, benih padi NMR152 yang digunakan itu menjadi pilihan kerana padinya berproduktiviti tinggi selain tahan serangan penyakit, cuaca ekstrem, kemarau dan banjir," katanya semalam.

LIPATAN SEJARAH

PM mahu PUSPATI jadi pusat nuklear Asia Tenggara

Saté Ria
Makanan berkhasiat
Warisan Malaysia

Sistem FM dan MPK di jabatan² kerajaan dapat elakkan penyelewengan

HADIAH EKSKLUSIF

Pandang Timur ke Bobson

PUSPATI perlu jadi pusat nuklear utama di Asia Tenggara

PADA 6 Jun 1984, *Utusan Malaysia* melaporkan Tun Dr. Mahathir Mohamad hari ini mahukan Pusat Penyelidikan Atom Tun Dr. Ismail (PUSPATI) menjadi sebuah pusat pengkajian tenaga nuklear yang terbesar di Asia Tenggara.

Perdana Menteri turut menegaskan, PUSPATI mampu mencapai tahap tersebut berdasarkan kemajuan yang telah dicapai hasil daripada penyelidikan dalam bidang perubatan, pertanian dan perindustrian.

MOSTI hasil dua lagi varieti padi baharu akhir 2026

Alor Setar: Kementerian Sains, Teknologi dan Inovasi (MOSTI) akan menghasilkan dua lagi varieti padi baharu negara penghujung 2026 dengan menggunakan titisan padi termaju.

Ketua Setiausahanya, Datuk Dr Aminuddin Hassim, berkata usaha itu mampu meningkatkan nisbah kecukupan kendiri Malaysia, di samping secara signifikan meningkatkan taraf kehidupan pesawah selaras dasar sekuriti makanan negara.

Beliau berkata, projek itu dihasilkan menerusi projek Dana Penyelidikan Strategik (SRF) MOSTI dengan kerjasama Kementerian Pertanian dan Keterjaminan Makanan (KPKM) dan universiti terkemuka negara.

Katanya, universiti terbabit ialah Universiti Putra Malaysia (UPM), Universiti Kebangsaan Malaysia (UKM) dan Universiti Teknologi MARA (UiTM), selain Agensi Nuklear Malaysia (Nuklear Malaysia).

"Semuanya terbabit secara aktif dalam kajian pembangunan varieti padi baharu yang tahan kepada perubahan cuaca yang tidak menentu," katanya ketika berucap pada Majlis Perasmian Program Promosi Bersasar Technology Preview and Showcase (TPS) Siri 2 dan Pelancaran Galeri Padi Nuklear di Muzium Padi, di sini semalam.

Majlis disempurnakan Raja Muda Kedah, Tengku Sarafudin Badlishah Sultan Sallehuddin.

Aminuddin berkata, tahun ini, kementerian memberikan fokus kepada beberapa bidang keutamaan, termasuk pembangunan teknologi hidrogen, pengembangan bakat kecerdasan buatan (AI), pembangunan sektor bioteknologi, pemupukan ekosistem perniagaan baharu melalui inisiatif tetingkap tunggal dan penerokaan teknologi angkasa lepas.

Katanya, dalam bidang berkaitan bioteknologi, khususnya dalam teknologi makanan dan perubatan jitu, kementerian berazam memenuhi permintaan keterjaminan makanan negara menerusi penyelidikan dan pembangunan teknologi tempatan.

Selain itu, katanya, Nuklear Malaysia dengan kerjasama Lembaga Muzium Negeri Kedah melancarkan Galeri Padi Nuklear, di mana pengunjung Muzium Padi Kedah berpeluang mendapatkan maklumat dan peranan agensi itu dalam penghasilan variasi benih padi baharu, NMR 152.

Kerjasama pakar luar bangunkan Akta REE

PORT DICKSON – Agensi Nuklear Malaysia bekerjasama dengan pakar luar negara bagi membangunkan akta atau perundangan khususnya dalam aktiviti membabitkan perlombongan nadir bumi (REE) di negara ini.

Ketua Pengarahnya, Dr. Rosli Darmawan berkata, langkah itu perlu memandangkan akta serta perundangan tersebut amat penting dalam menjaga kelestarian alam sekitar di masa akan datang.

Menurutnya, REE kini merupakan salah satu hasil yang sedang cuba dibangunkan kerajaan dan pihaknya mempunyai teknologi dalam memastikan cara atau kaedah melombong REE mempunyai tatacara pengendalian piawai (SOP).

"Kita ada bekerjasama dengan pakar dari luar negara seperti dari China dan kita dalam proses bangunkan juga akta perundangan supaya melombong (REE) ada SOP serta cara menjaga kelestarian alam sekitar.

"Ini penting bagi memastikan (alam) tak tercemar dengan cara melombong seperti yang ditinggalkan penjajah terdahulu," katanya kepada pemberita selepas Majlis Perasmian Seminar dan Bengkel Penulisan dan Penerbitan Saintifik 2024, di sini semalam.

Semalam, Perdana Menteri, Datuk Seri Anwar Ibrahim menegaskan Malaysia perlu memanfaatkan sepenuhnya potensi besar industri REE terutamanya daripada sumber tempatan.

> "Aktiviti penguatkuasaan juga perlu diperkemas bagi mengelak sumber negara dieksploitasi, yang akan mengurangkan hasil kepada kerajaan dan merencat pembangunan industri REE negara."

Malah menurut beliau, aktiviti penguatkuasaan juga perlu diperkemas bagi mengelak sumber negara dieksploitasi, yang akan mengurangkan hasil kepada kerajaan dan merencat pembangunan industri REE negara.

Sementara itu, sempena program tersebut seramai 13 pakar dalam bidang penulisan dan penerbitan saintifik telah dijemput untuk melatih lebih 60 peserta terlibat bagi meningkatkan mutu serta produktiviti hasil karya dan penerbitan sainstifik.

ROSLI

Nuklear Malaysia bangunkan akta, perundangan REE

PORT DICKSON: Agensi Nuklear Malaysia (Nuklear Malaysia) kini bekerjasama dengan pakar luar negara bagi membangunkan akta atau perundangan khususnya dalam aktiviti membabitkan perlombongan unsur nadir bumi (REE) di negara ini.

Ketua Pengarahnya, Dr. Rosli Darmawan berkata, langkah itu perlu memandangkan akta serta perundangan tersebut amat penting dalam menjaga kelestarian alam sekitar di masa akan datang.

Menurutnya, REE kini merupakan salah satu hasil yang sedang dibangunkan kerajaan dan pihaknya mempunyai teknologi dalam memastikan cara atau kaedah melombong REE mempunyai prosedur operasi standard (SOP).

"Kita ada bekerjasama dengan pakar dari luar negara seperti China dan kita dalam proses bangunkan juga akta perundangan supaya melombong (REE) ada SOP serta cara menjaga kelestarian alam sekitar.

"Ini penting bagi memastikan (alam) tidak tercemar dengan cara melombong seperti yang ditinggalkan penjajah terdahulu," katanya kepada pemberita selepas Majlis Perasmian Seminar dan Bengkel Penulisan dan Penerbitan Saintifik 2024 di sini, semalam.

Semalam, Perdana Menteri, Datuk Seri Anwar Ibrahim menegaskan, Malaysia perlu memanfaatkan sepenuhnya potensi besar industri REE terutamanya daripada sumber tempatan.

Menurut beliau, aktiviti penguatkuasaan juga perlu diperkemas bagi mengelak sumber negara dieksploitasi yang akan mengurangkan hasil kepada kerajaan dan merencat pembangunan industri REE negara.

Sementara itu, seramai 13 orpakar dalam bidang penulisan dan penerbitan saintifik dijemput untuk melatih lebih 60 peserta dalam seminar dan bengkel penulisan itu bagi meningkatkan mutu serta produktiviti hasil karya dan penerbitan saintifik.

SUSULAN PENCARIAN MANGSA DI PANTAI DALAM

Cari di titik akhir loji IWK!

FASILITI IWK Unit Kuala Lumpur di Pantai Dalam lokasi terakhir bagi operasi mencari dan menyelamat seorang wanita warga India yang terlibat dalam insiden tanah jerlus di Jalan Masjid India, baru-baru ini.

Oleh Hafidzul Hilmi Mohd Noor
hafidzul@hmetro.com.my

Kuala Lumpur

Pasukan mencari dan menyelamat (SAR), semalam, memfokuskan pencarian di kawasan titik akhir di loji Indah Water Konsortium (IWK) di Pantai Dalam, di sini.

Ia susulan pemeriksaan menggunakan *push rod* dan *crawler camera* di lurang kumbahan 1 ke lurang kumbahan di hadapan Wisma Yakin bagi mengesan kebarangkalian lokasi mangsa adalah negatif.

Unit Media Jabatan Perancangan Korporat Dewan Bandaraya Kuala Lumpur (DBKL) berkata, kerja di kawasan titik akhir di loji Pantai Dalam akan diteruskan di kawasan itu.

"Pasukan SAR akan meneruskan *flushing* dan pemeriksaan fizikal ke setiap ruang yang ada kemungkinan mangsa terperangkap," katanya.

"Pasukan SAR akan meneruskan flushing dan pemeriksaan fizikal ke setiap ruang yang ada kemungkinan mangsa terperangkap"

Kenyataan Unit Media Jabatan Perancangan Korporat DBKL

Pada masa sama, Agensi Nuklear Malaysia dan pasukan teknikal Dewan Bandaraya Kuala Lumpur (DBKL) turut membantu SAR berkenaan, semalam.

Pasukan berkenaan dilihat membawa alat pengesan radar dipercayai bagi mengesan sebarang pergerakan di bawah tanah.

Alat yang sama pernah digunakan dalam insiden tanah runtuh di Batang Kali pada 2022 yang lalu.

Terdahulu, IWK memulakan aktiviti *jetting* iaitu penyemburan air bertekanan tinggi di lokasi kejadian tanah jerlus berhampiran Wisma Yakin di Masjid India di sini, kelmarin.

Operasi yang bermula jam 9.15 malam itu membabitkan pasukan IWK bersama sebuah jentera air.

GROUND PENETRATING RADAR DEPLOYED

SEARCH EFFORTS YIELD NO CLUE

High-powered jets, flushing and check of sewer unsuccessful

AUSTIN CAMOENS
KUALA LUMPUR
news@nst.com.my

As the search for Indian tourist Vijayaletchumy — who was swallowed by a sinkhole in Kuala Lumpur — entered its fifth day yesterday, a technical team from City Hall and the Malaysia Nuclear Agency arrived at the scene to lend their expertise.

Malaysia Nuclear Agency representatives wheeled a ground-penetrating radar device into the dig site. It is believed the device will be used to help locate the woman, as similar devices were used to locate victims buried in the landslide that occurred in Batang Kali in December 2022.

Yesterday, it was also revealed that authorities had conducted flow simulations to see how long it takes for an object to travel from the sinkhole to the Indah Water Konsortium (IWK) Pantai Dalam plant.

Inspector-General of Police Tan Sri Razarudin Husain said after visiting the scene yesterday: "The Fire and Rescue Department released a bottle into the sewer near the sinkhole to get an estimate of how long it takes the water to flow to the end point. It takes about four hours."

He said most of their efforts were being conducted inside the sewers between 12am and 6am to see if the Indian tourist was stuck in any of the chambers.

"During this time, cameras were placed inside to find the victim. The currents are strong in the water chamber. During the day time, the chamber is almost full," he said, adding that this was why most of the efforts were carried out late at night to early morning.

Tan Sri Razarudin Husain

Razarudin said a number of agencies had been roped into the search-and-rescue (SAR) efforts.

It was learnt that IWK conducted flushing work early yesterday. Camera equipment was also deployed into the sewer following the flushing operations to inspect the system.

An overhaul was carried out at the IWK Pantai Dalam plant, with IWK personnel working alongside the Fire and Rescue Department. High-pressure jetting was also performed to clear debris at one of the manholes near the sinkhole in hopes of finding Vijayaletchumy.

City Hall's media unit, in a statement yesterday, said the jetting work and inspection of pipelines and manholes was done at 6.30am.

"The jetting work broke up debris lodged in the sewer. However an inspection using a push rod and camera crawler at the manhole in front of Wisma Yakin did not detect the location of the victim."

It added that the SAR team will continue work at the end point area at the IWK Pantai Dalam plant by continuing flushing operations, as well as physical inspections of any space where the victim may be trapped.

SAR teams face significant challenges in the search for the missing victim.

Bernama reported that highly toxic and flammable sewer gas accumulated in a 15m-high sewage tank at the IWK Pantai Dalam plant posed a significant challenge for teams working to locate the victim.

A source told Bernama that the danger was identified after SAR team members were deployed to inspect the tank, initially with two personnel on Sunday and four on Monday.

"There are various hazardous gases in the tank, including hydrogen sulfide and methane, which are highly toxic and flammable," the source said.

Hydrogen sulfide is a colourless, highly toxic and flammable gas with a distinct smell of rotten eggs which is produced by biological activity when bacteria decomposes organic matter in the absence of oxygen.

Sources revealed that SAR personnel donned specialised single-use personal protective equipment and breathing apparatuses when entering the tank.

The source added that SAR personnel will be lowered into the tank and the filter section using a rope system to search for clues regarding the victim's whereabouts using bare hands and specialised tools.

While inside the tank, SAR team members must avoid making abrupt movements or disturbing excrement piles due to the accumulated methane gas.

Search efforts will continue in the tank and the filter area to identify any foreign objects trapped after the faeces were pumped out.

"Up to Monday, nothing has been found," the source said.

Vijayaletchumy, 48, was swallowed by a sinkhole on Friday morning. A video footage of the incident, released by the Fire and Rescue Department, shows the sinkhole suddenly forming and engulfing her.

The 31-second closed-circuit television clip captures the woman walking along the pedestrian path behind two others. As she approached a concrete bench, the ground beneath her abruptly collapsed and she vanished into the hole.

Pasukan SAR guna GPR cari Vijayaletchumy

KUALA LUMPUR – Pencarian hari keenam mangsa yang hilang akibat tanah jerlus di Jalan Masjid India, Vijayaletchumy, 48, semalam diteruskan dengan menggunakan alat pengesan Ground Penetrating Radar (GPR) atau Radar Menembusi Tanah.

Penggunaan alat GPR itu sebagai usaha membantu mengesan mangsa yang masih belum ditemui sejak dilaporkan hilang pada Jumaat lalu.

GPR berfungsi dengan memancarkan gelombang elektromagnetik ke bawah permukaan tanah menerusi pemancar dan mengesan kembali gelombang yang terpantul menggunakan sensor penerima.

Alat berkenaan sering digunakan untuk mengesan mangsa di bawah tanah selain pernah digunakan sewaktu pencarian mangsa tragedi tanah runtuh di Batang Kali pada tahun 2022.

Sementara itu, GPR dipercayai dibawa oleh Agensi Nuklear Malaysia pada pukul 11.15 pagi kelmarin selain sepasukan teknikal daripada Dewan Bandaraya Kuala Lumpur (DBKL) yang turut hadir membuat pemantauan.

KAKITANGAN Jabatan Mineral dan Geosains Malaysia menggunakan alat GPR dalam operasi SAR mangsa tertimbus semalam.

Sementara itu, operasi mencari dan menyelamat (SAR) Vijayaletchumy di kawasan 'end point' iaitu loji di Pantai Dalam, di sini kelmarin tidak menunjukkan sebarang perkembangan positif.

KERATAN Kosmo! 24 Ogos 2024.

Radar Menembusi Tanah (GPR)

- Alat atau teknik diguna mengesan mangsa tanah runtuh (tertimbus).
- Mampu jejak pada kedalaman 4 hingga 6 meter dari permukaan.
- Konsep asas memancarkan gelombang elektromagnetik dengan frekuensi tertentu ke bawah tanah.
- Gelombang ini akan dipantulkan semula ke permukaan berdasarkan perbezaan jenis material direkodkan GPR
- Lokasi berpotensi kebocoran akan dikenal pasti, kedudukan tepat kebocoran sepanjang laluan paip ditentukan dengan memeriksa data GPR dengan teliti
- GPR pernah digunakan sewaktu pencarian mangsa tragedi tanah runtuh di Batang Kali pada 2022

Sumber: *Agensi Nuklear Malaysia*

- Harga GPR antara RM50,000 sehingga RM150,000 bergantung kepada jenis dan fungsi

Sumber: *US Radar*

Pembangunan reaktor nuklear torium perlu kos tinggi

Pembangunan reaktor nuklear berbahan api torium secara teori lebih selamat dan sisa radioaktifnya lebih rendah dan tidak bertahan lama.

Menteri Sains, Teknologi dan Inovasi Chang Lih Kang, berkata untuk menggunakannya sebagai bahan api memerlukan teknologi canggih dan rumit, selain kos yang tinggi.

Beliau berkata, kajian di makmal bagi projek penyelidikan dan pembangunan (R&D) berkaitan torium menunjukkan keputusan memberangsangkan.

"Kementerian giat memantau projek R&D berkenaan dan keputusan yang diperoleh mendapati pengekstrakan torium daripada lanthanide pekat mencapai 100 peratus manakala sisa *water leach purification* (WLP) mencapai 92 peratus.

"Ini keputusan amat memberangsangkan dan kita harap dapat *up scale* perkara ini kepada skala projek rintis," katanya pada sesi soal jawab di Dewan Rakyat, semalam.

Beliau menjawab soalan tambahan Datuk Ahmad Amzad Mohamed @ Hashim (PN-Kuala Terengganu) yang ingin tahu sama ada kerajaan akan membangunkan atau meneroka teknologi reaktor torium dan pengekstrakan bahan itu daripada industri unsur nadir bumi.

Pembangunan reaktor nuklear garam lebur berbahan api torium untuk menghasilkan tenaga mula mendapat perhatian dunia kerana dipercayai lebih selamat dan kurang menghasilkan kesan rumah hijau dan sisa radioaktif.

Menjawab soalan asal Ahmad Amzad mengenai rancangan kementerian untuk membina reaktor nuklear baharu dengan teknologi lebih baharu dan canggih bagi menggantikan Reaktor Triga Puspati (RTP), Lih Kang berkata, MOSTI melalui Agensi Nuklear Malaysia sedang menjalankan Kajian Teknikal Pelan Penggantian RTP yang dimulakan pada 2022 hingga 2025 menggunakan peruntukan Rancangan Malaysia Ke-12 (RMK12).

Beliau berkata, kajian itu membabitkan skop penilaian kesan sosioekonomi projek Reaktor Penyelidikan Pelbagai Guna (MPR), termasuk kos pembinaan, operasi, keselamatan, sekuriti dan kawal gunaan serta pengurusan sisa yang mematuhi piawaian antarabangsa.

"Kajian ini juga mengambil kira *input* dan cadangan pihak pemegang taruh agar projek ini memberi manfaat kepada semua pihak berkepentingan di Malaysia," katanya. BERNAMA

Kurangkan import radioisotop tujuan perubatan

KUALA LUMPUR: Kementerian Sains, Teknologi dan Inovasi (MOSTI) mahu mengurangkan kebergantungan import pelbagai jenis radioisotop sektor perubatan dengan memberi fokus kepada Dasar Teknologi Nuklear Negara (DTNN 2030).

Menterinya, Chang Lih Kang berkata, MOSTI telah membangunkan DTNN 2030 sebagai kerangka hala tuju strategik jangka panjang bagi memacu pembangunan teknologi nuklear negara untuk menyediakan ekosistem dalam penggunaan sains dan teknologi nuklear secara aman.

Kata beliau, nilai anggaran pendapatan daripada produk isotop yang dihasilkan menggunakan teknologi Reaktor TRIGA PUSPATI adalah sebanyak RM6 juta sejak 1982 yang melibatkan perkhidmatan dan kajian penyelidikan.

"MOSTI melalui Agensi Nuklear Malaysia sedang menjalankan Kajian Teknikal Pelan Penggantian Reaktor TRIGA PUSPATI yang telah dimulakan pada 2022 hingga 2025 menggunakan peruntukan Rancangan Malaysia ke-12 (RMK-12).

"Dengan adanya reaktor penyelidikan nuklear baharu ini, MOSTI berhasrat mengurangkan kebergantungan import terhadap pelbagai jenis radioisotop bagi tujuan perubatan, industri dan biosains.

"Selain itu, ia mampu menyumbang kepada peningkatan pengetahuan saintifik dan inovasi berteknologi tinggi seterusnya menyumbang kepada pembangunan sosio ekonomi negara," katanya pada sesi soal jawab di Dewan Rakyat hari ini.

Beliau menjawab soalan Datuk Ahmad Amzad Mohamed @ Hashim (PN-Kuala Terengganu) yang mahu mengetahui apakah perancangan kementerian untuk membina reaktor nuklear baharu dengan teknologi yang lebih baru dan canggih bagi menggantikan Reaktor Triga Puspati (RTP) yang sudah digunakan sejak 1982.

Online Media

Nuclear energy can help nation achieve net zero target by 2050, say experts

12 January 2024

TRIGA PUSPATI Reactor in Bangi, Selangor (Credit Pix - Nuclear Malaysia)

While renewable energy (RE) is widely touted as the future of energy to reduce greenhouse gas (GHG) emissions into the atmosphere, nuclear power is increasingly being discussed as a necessary part of the energy mix. As the world pushes towards net-zero emissions by 2050, nuclear power has been described by scientists globally as the way to bridge the energy gap as it is not only clean but also considered reliable as it addresses the intermittent nature of renewables like wind, hydro and solar power. (Net-zero emissions or net zero refers to achieving a balance between the carbon emitted into the atmosphere and the carbon removed from it.)

Furthermore, it also operates emission-free, mitigating emissions of carbon dioxide (CO2) and harmful air pollutants. Nuclear energy is also deemed pivotal to the global clean and sustainable energy transition, which is the key to achieving net-zero emissions. At the recently concluded 28th Conference of the Parties of the United Nations Framework Convention on Climate Change (COP28) in Dubai, United Arab Emirates, the UAE consensus reflected a clear commitment to triple RE and double energy efficiency by 2030, aiming to achieve net-zero GHG emissions by 2050 and keep the increase in global average temperature below 1.5 degrees Celsius above pre-industrial levels. As pointed out by Malaysian innovation and nuclear advocate Sheriffah Noor Khamseah Al-Idid Syed Ahmad Idid, the International Energy Agency (IEA) has reported that energy accounts for three-quarters of GHG emissions globally.

Thus, the energy sector holds the key to decarbonising the global economy and supporting its transition to a green economy, she told Bernama recently. "Shifting from fossil fuels to low-carbon energy systems is at the heart of a green economy and energy transition," she said, stressing that as a pathway to reach net-zero goals, nuclear power is part of strategic global solutions that are increasingly relevant today.

MALAYSIA'S NUCLEAR EVOLUTION

In Malaysia, the government aims to achieve 70 percent RE installed capacity by 2050 through the National Energy Transition Roadmap (NETR) launched in August 2023. Currently, Malaysia's energy sources are predominantly fossil fuels, with coal and natural gas contributing to over 80 percent of local electricity generation. Malaysia has vast potential for renewable energy, particularly from solar and other sources. Scientists, however, have emphasised that nuclear energy is among the best options to consider when substituting fossil fuels. According to the experts, besides being similarly rich in energy, it also complements other RE sources. Former special advisor to the director-general of the International Atomic Energy Agency (IAEA) and director of Nuclear Security at IAEA Raja Datuk Dr Abdul Aziz Raja Adnan said RE such as solar power still has limitations when used to generate base-load electric power. He said nuclear energy could support RE to make it work and to ensure energy security.

Speaking during the 'Ruang Bicara' programme aired by Bernama TV recently, he said in order to support the country's electricity requirements, "we need a stable low-carbon source like nuclear to complement RE. In the meantime, our local grid cannot support large-scale RE inclusion without massive grid upgrading. Because of this limitation, if solar panels are installed in houses to cater to the energy needs of domestic users, we will still need the supply from Tenaga Nasional Bhd's grid to ensure non-interrupted supply."

He said since 2009, Malaysia had implemented a number of important preparatory steps to pave the way for the implementation of a nuclear energy development programme, including establishing the Nuclear Power Corporation of Malaysia as the nation's first Nuclear Energy Programme Implementing Organisation.

"The history of nuclear energy in Malaysia began during the time of former deputy prime minister Tun Dr Ismail Abdul Rahman, with the establishment of the Tun Ismail Atomic Research Centre for the development of nuclear technology in 1972. "We were actually ready to seriously consider developing nuclear energy but during the era of oil and gas and the establishment of Petronas, this (nuclear energy) no longer seemed viable. "But now we know that fossil fuels cause climate change and also affect human health, so we need to move away from high carbon sources and choose renewable energy and nuclear as low-carbon sources in power generation," he said.

NEED FOR NUCLEAR ENERGY

Radiation protection consultancy Alypz Sdn Bhd managing director Jailani Mustafa urged the government to reconsider nuclear power as the solution to Malaysia's energy needs as well as its quest to achieve net zero by 2050.

He said the National Energy Policy 2022-2040, which suggests using more natural gas to replace coal in reducing fossil fuel dependence, may not succeed easily as the country's gas resources are depleting. "RE proponents including the government see RE as the solution. However, it is a daunting task because RE sources may be beyond the capability of existing grid infrastructure. It will cost around RM180 billion to make improvements," he said. Jailani said Malaysia's landscape presents a challenge for largescale RE projects, especially large solar farms which require vast land areas. "Solar panels, for example, require a land area as large as Perlis to generate one gigawatt of energy," he said, adding that experts believe RE can meet only 30 percent of Malaysia's energy needs, so the next logical solution for this country has to be nuclear power.

He said nuclear technology has evolved significantly with the emergence of small modular reactors (SMRs), which require significantly less land compared with traditional nuclear plants. "SMRs are built for modularity. These reactors can be prefabricated at a central facility and transported or assembled on-site, thus streamlining construction and potentially reducing costs. Safety features are a key feature of SMRs. Most often, they employ passive safety systems that rely on natural phenomena such as gravity and convection, rather than active components that need power or manual control. Collectively, these developments make a strong case for revisiting and potentially integrating nuclear energy into NETR," he said.

PUBLIC PERCEPTION

The prospect of implementing nuclear energy in Malaysia has generally drawn opposition from the public as people have safety concerns and are still haunted by the dark history of Hiroshima, Japan, that was destroyed by an atomic bomb in 1945 during World War 2; the accident at the Chernobyl Nuclear Power Plant in Russia in 1984; and the flooding of the reactors at the Fukushima nuclear power plant in Japan in 2011, following a tsunami triggered by a 9.0-magnitude quake. Jailani said the 2024 Budget and the NETR notably omitted references to nuclear power, which could be due to apprehensions about public opinion.

"Apprehension about nuclear energy is often based on safety concerns, nuclear waste management and concerns about nuclear proliferation. Events like the Fukushima disaster often exacerbate these concerns. Nevertheless, such incidents, when analysed, are often attributed to infrastructural deficiencies rather than inherent flaws in nuclear technology," he said.

He said a lack of informed understanding and knowledge often drives opposition to nuclear energy. This can be overcome by engaging in open, well-informed discussions and public debates. "A unified, bipartisan approach is necessary to adopt nuclear power, garnering support from all political factions," he added. In September 2018, the then Prime Minister Tun Dr Mahathir Mohamad told the 22nd Conference of the Electric Power Supply Industry that Malaysia rejected the use of nuclear power to generate electricity and that more understanding of the power source is needed.

However, during the launch of NETR in August 2023, Minister of Economy Rafizi Ramli said Malaysia is not ruling out nuclear power generation but needs to make further consideration before integrating it into the country's energy mix. Echoing Rafizi's sentiment, Natural Resources and Environmental Sustainability Minister Nik Nazmi Nik Ahmad said the government is considering nuclear in its energy mix following its zero-carbon emission policy. Commenting on the ministers' remarks, Sheriffah Noor Khamseah said it is imperative for the government to collaborate with other stakeholdersut to the Malaysian public to increase their awareness of nuclear energy.

"The recent COP28 in Dubai heralded a key turning point for nuclear energy as evidenced by several important events organised, including the statement by IAEA director-general Rafael Grossi who underscored the need for nuclear energy to reach net zero goals. "This was supported by the declaration by 22 world leaders on the need to triple installed nuclear capacity by 2050 to reach net zero goals. Malaysia participated in COP28 too and I am confident its leaders and delegation would bring these statements back to Malaysia for the government to make strategic decisions for the benefit of the people," she added.

https://www.bernama.com/en/news.php?id=2261733

Capai aspirasi sifar karbon menjelang 2050, tenaga nuklear diperlukan - Agensi Nuklear

17 January 2024

Dr. Rosli Darmawan

“Kebanyakan industri di luar juga sudah mula mempertimbangkan penggunaan tenaga nuklear secara serius”.

KUALA LUMPUR: Agensi Nuklear Malaysia (Nuklear Malaysia) tidak menolak kemungkinan bahawa penggunaan tenaga nuklear mungkin diperlukan bagi proses penjanaan tenaga dalam usaha merealisasikan aspirasi karbon sifar bersih menjelang 2050.

Ketua Pengarah Nuklear Malaysia, Rosli Darmawan berkata, meskipun penggunaan tenaga nuklear tidak disebut secara khusus dalam Dasar Teknologi Nuklear Negara (DTNN) 2030, namun pihaknya sentiasa bersedia untuk meneroka penjanaan tenaga menggunakan tenaga nuklear. Walaupun dalam Pelan Hala Tuju Peralihan Tenaga Negara (NETR) tidak disebut perkara itu tetapi sudah ada beberapa kenyataan daripada NRECC (Kementerian Sumber Asli, Alam Sekitar dan Perubahan Iklim) dan Menteri Ekonomi, Rafizi Ramli sebelum ini yang pernah menyebut ia dalam pertimbangan menjelang tahun 2050.

"Sebab buat masa ini, kita tiada pilihan kerana kalau ingin capai karbon sifar menggunakan teknologi tenaga boleh baharu (RE) sahaja memang tidak akan berjaya kerana ini adalah senario di peringkat global. Malah, banyak pihak sudah akui bahawa mahu atau tidak kita perlu masukkan keperluan tenaga kita menggunakan nuklear," katanya. Beliau berkata demikian pada sidang media selepas majlis menandatangani memorandum persefahaman (MoU) antara Nuklear Malaysia bersama Alam Flora Environmental Solutions Sdn Bhd (AFES) di Dewan Tun Dr Ismail, Kompleks Agensi Nuklear Malaysia, Bangi, dekat sini, pada Selasa.

Rosli berkata, kebanyakan industri di luar juga sudah mula mempertimbangkan penggunaan tenaga nuklear secara serius berikutan bahan api fosil dan arang adalah penyumbang terbesar dalam pelepasan karbon pada masa kini. "Tetapi, sama ada ia akan dilaksanakan atau tidak itu bergantung kepada pertimbangan Kementerian Tenaga (Kementerian Peralihan Tenaga dan Daya Guna Awam). Kita lihat nanti dasar bagi kementerian ini dalam dua ke tiga tahun akan datang," katanya.

Mengenai memorandum kerjasama yang dimeterai bersama AFES pada Selasa, beliau berkata ia bertujuan bagi memanfaatkan teknologi nuklear dalam menangani pencemaran alam sekitar dan memberi manfaat kepada rakyat dengan mengarusperdanakan penggunaan teknologi nuklear secara aman di Malaysia.

Katanya, skop kerjasama itu merangkumi penyelidikan penyinaran-pirolisis sisa plastik; perkembangan dan pengadaptasian tenologi nuklear dan yang berkaitan serta bersesuaian dengan industri kitar semula plastik; serta pembangunan loji berskala rintis bagi teknologi penyinaran-pirolisis. "Diharapkan juga bahan bakar bernilai tinggi yang dihasilkan kelak dapat menyumbang kepada salah satu sumber baharu kepada negara dan secara tidak langsung dapat meningkatkan ekonomi negara," katanya.

Majlis pemeteraian kerjasama itu telah menyaksikan pertukaran MoU antara Rosli yang mewakili Nuklear Malaysia dengan Ketua Pegawai Eksekutif Alam Flora Sdn Bhd merangkap Pengarah AFES, Datuk Mohd Zain Hasan. Sementara itu, Mohd Zain berkata, kolaborasi itu juga dilihat akan memanfaatkan teknologi nuklear canggih dalam pelaksanaan teknologi penukaran sisa plastik terpakai kepada bahan bakar seperti diesel serta pengitaran semula plastik terpakai secara inovatif.

https://www.astroawani.com/berita-malaysia/capai-aspirasi-sifar-karbon-menjelang-2050-tenaga-nuklear-diperlukan-agensi-nuklear-454320

The Malaysian Reserve

AFES, Nuclear Agency partner up for plastic-to-fuel conversion

17 January 2024

The partnership marks an impactful way to cut plastic pollution and a transformative effort to deploy nuclear technology for environmental gain

ALAM Flora Environmental Solutions (AFES) and the Malaysian Nuclear Agency signed a memorandum of understanding (MoU) yesterday to collaborate on an innovative plastic-to-fuel conversion technology proof of concept.

The agreement was exchanged between Nuclear Agency DG Dr Rosli Darmawan and AFES CEO and director Datuk Mohd Zain Hasan at Nuclear Agency's Bangi headquarters. Activities outlined include aggregating and processing plastic trash as well as utilising radiation-assisted pyrolysis (RAP). RAP uses heat to decompose plastics in a contained system, generating reusable byproducts. Combining it with radiation techniques can boost efficiency and cut costs.

The Nuclear Agency has already built a test rig and produced initial samples of pyrolysis oil with technical guidance from the International Atomic Energy Agency (IAEA). Rosli said the partnership marks a transformative effort to deploy nuclear technology for environmental gain. He noted that converting plastic waste into pyrolysis oil aligns with wider goals to expand peaceful nuclear applications while supporting socio-economic growth, industry competitiveness and ecological preservation.

"This collaboration is seen as a good step in mainstreaming the peaceful use of nuclear technology in Malaysia which will at once have a positive impact on Malaysians towards a better quality of life," he said at the signing ceremony.

Meanwhile, Mohd Zain framed the tie-up as an impactful way to cut plastic pollution through sustainable practices and technological advancement. He expressed hope that the cooperation can drive positive change by pooling specialised expertise.

"The result of the collaboration between the two parties, using RAP technology, has succeeded in producing fuel from plastic with an efficiency of more than 80% through the pyrolysis process with a temperature reduced below 100°C from the normal process," he said.

He added that this process can potentially reduce the use of energy to process plastic at the molecular level. "Therefore, I think that the MoU signed between AFES and the Nuclear Agency not only aims to significantly reduce plastic waste but will also be a pioneer in dealing with environmental care issues through nuclear technology that has never been explored," he said.

https://themalaysianreserve.com/2024/01/17/afes-nuclear-agency-partner-up-for-plastic-to-fuel-conversion/

NEW STRAITS TIMES

Malakoff partners Malaysian Nuclear Agency to use nuclear energy to tackle environmental issues

18 January 2024

From left – Malaysian Nuclear Agency's Director-General Dr. Rosli Darmawan and AFES' Director Datuk Mohd Zain Hassan during the MoU.

KUALA LUMPUR: Malakoff Corporation Bhd. is partnering with the Malaysian Nuclear Agency (MNA) to use advanced nuclear technology to tackle environmental issues. A Memorandum of Understanding (MoU) was signed between Malakoff's member company, Alam Flora Environmental Solutions (AFES) – a subsidiary of Alam Flora Sdn. Bhd. and MNA. The document exchange ceremony was held at the MNA office between the Director-General of MNA, Dr. Rosli Darmawan and AFES' Director, Datuk Mohd Zain Hassan.

Through the collaboration, the technology of Radiation Assisted Pyrolysis (RAP) will be used to convert plastic waste into valuable fuel and to produce high-value products more efficiently at a lower cost. AFES will assume the responsibility of collecting and sorting recyclable waste, while MNA will leverage their innovative expertise to transform these sorted materials into fuel and new value-added products. This project not only aims to significantly reduce plastic waste, but also to propel both AFES and MNA to the forefront of environmental conservation, fostering a commitment to sustainable practices and the advancement of technology.

"We believe that fostering the right partnerships is vital for shaping a greener future. Given the perpetual nature of waste, the innovation of converting chemicals from plastic waste into fuel is commendable. This not only addresses the issue of waste accumulation in landfills, but also transforms it into a valuable resource.

The research and development on this have already commenced, undertaken by both AFES and MNA with the involvement of the International Atomic Energy Agency where a test rig has been constructed and has successfully undergone several experimental tests," Malakoff's managing director and group chief executive officer Anwar Syahrin Abdul Ajib said.

This significant strategic partnership is part of Malakoff's business pillar, Malakoff Environmental Solutions' aspiration to focus on environmental management and solutions that are dedicated to serving communities and the planet. It is also in line with the United Nation Sustainable Development Goal No. 12 that ensures sustainable consumption and production patterns.

https://www.nst.com.my/business/corporate/2024/01/1002913/malakoff-partners-malaysian-nuclear-agency-use-nuclear-energy#google_vignette

Teknologi nuklear merupakan antara teknologi yang dimanfaatkan untuk mencapai matlamat SDG.

MATLAMAT Pembangunan Lestari atau Sustainable Development Goals (SDG) yang diperkenalkan pada 2015 oleh Persidangan Agung Pertubuhan Bangsa-Bangsa Bersatu merupakan satu inisiatif global ke arah masa depan yang lebih lestari. Ia mengambil kira semua cabaran pembangunan dunia moden, termasuk ekonomi, sosial, politik, dan alam sekitar. Inisiatif ini menggariskan17 matlamat dan 169 sasaran merangkumi lima bidang tumpuan iaitu kemajuan masyarakat, penjagaan bumi, kemakmuran, keamanan dan kerjasama.

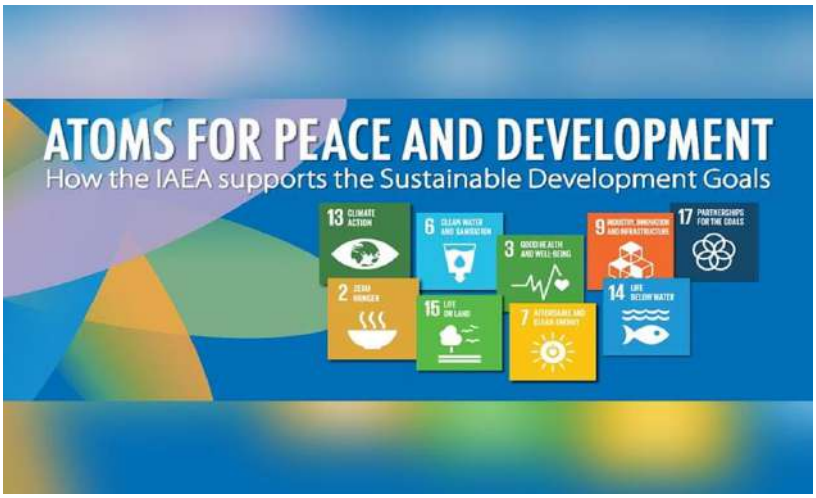
Malaysia merupakan antara 193 negara yang menyokong agenda SDG. Di peringkat nasional, SDG menjadi panduan penting dalam merangka dasar dan rancangan pembangunan negara yang mampan. Sains, teknologi, dan inovasi memainkan peranan yang penting dalam perlaksanaan SDG. Teknologi nuklear merupakan antara teknologi yang dimanfaatkan untuk mencapai matlamat SDG. Apakah yang dimaksudkan dengan teknologi nuklear ini? Teknologi nuklear adalah teknologi yang melibatkan tindak balas nuklear terhadap nukleus sesuatu atom. Tindak balas ini akan memancarkan sinaran alfa, beta, gama, x-ray dan neutron. Sinaran inilah digunakan dalam pelbagai industri secara global. Walaupun kebanyakan orang awam agak takut apabila mendengar perkataan 'nuklear' ini, teknologi menggunakan interaksi nuklear amatlah signifikan kepada pembangunan teknologi masa kini khususnya dalam mendokong agenda SDG.

Di Malaysia, teknologi nuklear mula diperkenalkan seawal tahun 1896 melalui penggunaan mesin sinar-x dalam sektor perubatan di Hospital Taiping, Perak. Seiring dengan kemajuan negara, teknologi nuklear terus berkembang pesat dalam sektor ekonomi yang lain. Kini, ia diaplikasikan dalam enam sektor utama negara iaitu perubatan dan penjagaan kesihatan, makanan dan pertanian, industri, air dan alam sekitar, keselamatan dan sekuriti nuklear, dan tenaga. Pelancaran Dasar Teknologi Nuklear Negara (DTNN) pada 20 September 2023 yang lalu bertujuan melonjakkan penggunaan teknologi ini untuk pembangunan sosio-ekonomi negara ke arah mencapai aspirasi negara maju.

Dari perspektif SDG, tahukah anda bahawa teknologi nuklear berpotensi memberi sumbangan kepada sembilan matlamat SDG iaitu SDG 2: Kelaparan sifar, SDG 3: Kesihatan yang baik dan kesejahteraan, SDG 6: Air bersih dan sanitasi, SDG 7: Tenaga mampu milik dan bersih, SDG 9: Industri, inovasi dan infrastruktur, SDG 13: Tindakan iklim, SDG 14: Kehidupan di bawah air, SDG 15: Kehidupan di darat, dan SDG 17: Kerjasama demi matlamat. Jadi tidak hairanlah badan antarabanga seperti International Atomic Energy Agency (IAEA) bersungguh-sungguh memastikan bahawa penggunaan teknologi nuklear dapat diadaptasi mengikut keperluan dan kehendak negara masing-masing.

Berdasarkan tinjauan oleh Bloomberg pada 2014, sektor kesihatan negara berada dalam 30 negara terbaik dunia. Namun begitu, sektor ini sentiasa menghadapi tekanan disebabkan peningkatan penyakit tidak berjangkit seperti kanser, kencing manis, penyakit pernafasan kronik dan sakit jantung. Data kesihatan oleh Organisasi Kesihatan Sedunia (World Health Organization, WHO) pada 2018 mendapati hampir tiga suku kematian di Malaysia adalah disebabkan oleh penyakit tersebut. Bagi menangani cabaran tersebut, teknologi nuklear dimanfaatkan sepenuhnya dalam sektor kesihatan negara. Pada 2020, terdapat 39 pusat radioterapi, 33 pusat perubatan nuklear serta 552 hospital dan klinik dilengkapi dengan fasiliti radiologi yang menyediakan perkhidmatan kesihatan berteraskan teknologi nuklear kepada rakyat. Fasiliti kesihatan ini dioperasikan oleh kerajaan dan swasta serta dilesenkan oleh Kementerian Kesihatan Malaysia.

Selain itu, negara juga mempunyai lima fasiliti siklotron dan satu reaktor penyelidikan nuklear iaitu Reaktor TRIGA PUSPATI yang digunakan untuk menghasilkan radioisotop bagi perubatan nuklear untuk tujuan diagnostik dan rawatan penyakit kanser seperti Iodin-131 dan Samarium-153. Saya juga mengetuai penyelidikan dalam penghasilan radioisotop Yttrium-90 bagi merawat kanser hati menggunakan reaktor penyelidikan tersebut. Infrastruktur ini membolehkan perkhidmatan perubatan berkualiti tinggi dan kos efektif dapat diberikan kepada rakyat seterusnya menjadikan negara sebagai destinasi perlancongan perubatan di rantau ini. Penggunaan teknologi nuklear dalam sektor ini membolehkan kehidupan sihat dan kesejahteraan pada semua peringkat umur seperti yang digariskan dalam SDG 3 dapat dicapai.



Sumbangan teknologi nuklear kepada 9 SDG.

Keterjaminan makanan merupakan isu global termasuk di Malaysia. Pelbagai faktor menyumbang kepada gangguan penghasilan makanan termasuklah perubahan iklim, kekangan pengeluaran hasil pertanian dan peningkatan harga bahan mentah. Justeru, wujud keperluan untuk meningkatkan tahap sara diri (self-sufficiency level) makanan negara dengan memanfaatkan teknologi baru serta memodenkan sektor pertanian. Selaras dengan hasrat tersebut, teknologi nuklear diguna pakai untuk penghasilan varieti baru benih dan tanaman, pengurusan tanah, tanaman dan ternakan, kawalan serangga perosak serta peningkatan produktiviti dan kualiti makanan.

Sehingga kini, lebih daripada 30 jenis benih dan tanaman baharu dengan ciri yang lebih baik berjaya dihasilkan penyelidik tempatan menggunakan kaedah penyinaran. Antaranya termasuklah penghasilan varieti baru benih padi IS21 oleh Agensi Nuklear Malaysia (Nuklear Malaysia) yang mampu meningkatkan pendapatan petani melalui peningkatan hasil tuaian diantara 35 hingga 50 peratus.

Disamping itu, kaedah penyinaran juga digunakan untuk menyahcemar makanan, herba dan makanan haiwan serta membasmi serangga dalam komoditi pertanian negara sebelum dieksport ke pasaran antarabangsa. Teknik nuklear melibatkan penggunaan isotop stabil pula sudah mula mendapat perhatian sebagai kaedah inovatif dalam penentuan ketulenan dan penjejakan makanan. Inovasi ini membantu pihak berkuasa mencegah kes penipuan dan pemalsuan makanan. Usaha juga giat dilaksanakan oleh pelbagai pihak untuk mengintegrasikan teknologi nuklear dengan teknologi lain seperti pertanian pintar, teknologi digital dan sebagainya bagi meningkatkan daya saing dan kemampanan sektor pertanian dalam misi mencapai sasaran SDG 2 negara.

Sektor industri merupakan penggerak utama ekonomi negara dengan menyumbang 35 hingga 40 peratus daripada keluaran dalam negara kasar (KDNK). Sejak berdekad lalu, teknologi nuklear diaplikasikan untuk pelbagai industri tempatan seperti industri minyak dan gas, penjanaan kuasa, pengangkutan, aeroangkasa, perubatan dan pembuatan. Teknologi pemprosesan sinaran digunakan oleh industri untuk pensterilan peranti perubatan dan nyahcemar makanan dan produk makanan. Sebagai contoh, syarikat pengeluar sarung tangan terbesar dunia iaitu Top Glove Corporation Berhad menggunakan sinaran gama dalam proses pensterilan sarung tangan getah keluarannya supaya bebas daripada kuman dan bahan kimia. Teknologi ini juga dimanfaatkan untuk menghasilkan barangan berkualiti tinggi bagi kegunaan industri. Syarikat pembuatan kereta nasional, Proton Holdings Berhad menjalinkan kerjasama dengan Nuklear Malaysia dalam penyelidikan aplikasi teknologi nuklear dalam industri automotif.

Pembangunan industri gas dan minyak negara pada awal 1980-an telah membina keupayaan anak tempatan dalam ujian tanpa musnah (Non-destructive test). Ia merupakan teknik yang digunakan oleh industri dalam penilaian integriti sesuatu bahan, komponen dan sistem tanpa merosakkannya. Hasil usaha berterusan dalam bidang ini, Malaysia kini diiktiraf sebagai negara peneraju NDT di rantau ini dan menjadi rujukan negara-negara lain. Selain NDT, tolok nuklear juga digunakan secara meluas dalam industri tempatan bagi tujuan pengukuran dan kawalan kualiti seperti tolok ketebalan, tolok ketumpatan dan lain-lain lagi. Penggunaan teknologi nuklear terus meMarchu kemajuan sektor industri negara selaras dengan sasaran SDG 9.

Kemudahan utama teknologi nuklear negara. - Sumber: Nuklear Malaysia.

Sumbangan teknologi nuklear dalam mencapai matlamat pembangunan lestari di Malaysia

Malaysia sentiasa menekankan kepentingan pengurusan alam sekitar dan sumber asli yang lestari bagi mencapai sasaran SDG 6, 13, 14 dan 15. Bagi merealisasikan hasrat tersebut, teknik nuklear menawarkan metodologi yang unik dengan memberi maklumat pelengkap kepada teknik konvensional bagi memperkasa aktiviti pemantauan dan pengurusan alam sekitar dan sumber asli negara. Ini termasuklah pemantauan perubahan iklim, pengurusan sumber air dan sumber asli serta pemuliharaan alam sekitar. Dengan menggunakan teknik analisis nuklear, data kandungan unsur radioaktif dalam atmosfera, lautan, saliran, sungai, tanih dan sebagainya dapat diperoleh. Bukan itu sahaja, data kandungan unsur nadir bumi atau Rare Earth Elements (REE) yang terdapat di Malaysia juga dapat ditentukan antaranya menggunakan teknik neutron activation analysis (NAA).

Selain itu IAEA juga telah mencadangkan penggunaan teknik nuklear dalam mengesan microplastic yang tercemar di lautan Malaysia. Malah pendedahan kepada sinar gama juga boleh mengubah struktrur plastik buangan untuk menjadi bahan baru yang lebih baik atau menjadi plastik yang terbiodegradasi. Kumpulan penyelidikan dari Univerisiti Kebangsaan Malaysia (UKM) yang diketuai oleh saya sendiri juga sedang membuat kajian penggunaan Cosmic-ray Neutron Sensor (CRNS) dengan kerjasama Nuklear Malaysia dan IAEA dalam menentukan kandungan air dalam tanah bagi pembangunan pengurusan air pintar. Kesemua teknik ini membolehkan pangkalan data alam sekitar yang komprehensif dapat dibangunkan serta membantu pihak berwajib untuk memantau persekitaran negara terhadap pencemaran alam sekitar daripada industri, terutamanya yang melibatkan pelepasan bahan radioaktif.

Selain itu, teknologi nuklear juga membolehkan hakisan tanah yang berlaku di pantai, sungai, empangan dan sebagainya dapat dianggarkan dengan lebih tepat dengan menggunakan penyurih radioaktif. Maklumat tersebut memudahcara pihak berwajib merangka tindakan yang lebih berkesan.

Sektor keselamatan dan sekuriti nuklear memainkan peranan penting untuk memastikan teknologi nuklear sentiasa digunakan secara selamat dan untuk tujuan aman seperti yang termaktub dalam Akta Perlesenan Tenaga Atom 1984 (Akta 304). Sektor ini melibatkan pelbagai pihak berkepentingan termasuk Majlis Keselamatan Negara, Agensi Pengurusan Bencana Negara, Polis Diraja Malaysia, Jabatan Tenaga Atom, Nuklear Malaysia dan universiti tempatan. Sektor ini juga mendapat manfaat melalui aplikasi teknologi nuklear. Contohnya, kebanyakkan bangunan dan lapangan terbang dilengkapi mesin pengimbas sinar-x untuk imbasan kargo dan bagasi bagi menjamin keselamatan orang awam.

Selain itu, pergerakan keluar masuk bahan nuklear dan bahan radioaktif di Malaysia sentiasa dipantau menggunakan 82 portal pemantauan sinaran yang dipasang di pintu masuk dan keluar seluruh negara bagi mencegah penyeludupan bahan tersebut. Disamping itu, negara juga mempunyai lapan Stesen Pemantauan Sinaran Alam Sekitar (ERMS) untuk memantau tahap sinaran alam sekitar. Bidang forensik nuklear pula semakin mendapat tempat di negara ini kerana keupayaannya untuk mencegah dan bertindak balas terhadap kejadian sekuriti nuklear. Di peringkat global, Malaysia aktif menjalinkan kerjasama dengan rakan antarabangsa dan serantau seperti IAEA, Forum for Nuclear Cooperation in Asia (FNCA) dan ASEANTOM dalam usaha membangunkan kepakaran tempatan dalam bidang ini.

Teknologi nuklear sangat sinonim dengan loji janakuasa nuklear yang digunakan untuk penjanaan tenaga elektrik. Tenaga nuklear merupakan sumber tenaga yang mampan dan bersih berbanding teknologi penjanaan tenaga yang lain kerana ia hampir tidak mengeluarkan karbon dioksida. Namun begitu, sehingga kini, Malaysia tidak mempunyai loji janakuasa nuklear selain reaktor penyelidikan. Fokus negara pada masa ini adalah tertumpu kepada pembangunan modal insan dan kepakaran tempatan dalam bidang sains dan kejuruteraan nuklear. Kerjasama antara Nuklear Malaysia dan universiti tempatan seperti UKM membolehkan Reaktor TRIGA PUSPATI dimanfaatkan sebagai bahan pembelajaran dan latihan untuk mendalami bidang tersebut. Di peringkat global, pembangunan teknologi reaktor nuklear inovatif seperti reaktor modular kecil (small modular reactor, SMR) yang mampu menjana sejumlah besar tenaga elektrik dengan pelepasan karbon dioksida yang sangat rendah telah menarik minat kebanyakkan negara untuk meneroka teknologi tersebut termasuklah Malaysia kerana ia lebih murah, selamat dan fleksibel. Selaras dengan dasar pelepasan karbon sifar negara, SMR berpotensi memainkan peranan dalam sektor penjanaan tenaga negara pada masa hadapan.

Secara keseluruhannya, teknologi nuklear tidak asing di negara ini. Ia bukan sahaja digunakan secara meluas di pelbagai sektor ekonomi tetapi juga membantu negara mencapai sasaran SDG dan dasar negara yang berkaitan. Perlaksaanan DTNN sehingga 2023 dijangka akan meningkatkan lagi penggunaan dan memaksimunkan manfaat teknologi nuklear untuk pembangunan sosio-ekonomi negara. Aplikasi teknologi nuklear bersama teknologi lain seperti bioteknologi, nanoteknologi, teknologi digital dan sebagainya akan memberikan faedah yang lebih besar kepada negara pada masa hadapan dan memberi jaminan kepada kesejahteraan masyarakat Malaysia khususnya.

https://www.astroawani.com/berita-malaysia/kolumnis-sumbangan-teknologi-nuklear-dalam-mencapai-matlamat-pembangunan-lestari-di-malaysia-458261

KKM jawab isu lambakan madu tiruan di pasaran

14 February 2024

KKM turut menjalankan kerjasama dengan Agensi Nuklear Malaysia serta Jabatan Pertanian bagi menentukan ketulenan madu menggunakan teknik terkini.

KUALA LUMPUR: Kementerian Kesihatan Malaysia (KKM) mengambil maklum artikel bertajuk "Lambakan 90 peratus madu tiruan di pasaran, bagaimana nak tahu mana yang asli" yang disiarkan oleh akhbar Berita Harian pada 13 February 2024. Artikel berkenaan turut memberi maklumat berkaitan madu kelulut.

Di Malaysia, madu diklasifikasikan berdasarkan spesies lebah yang menghasilkannya iaitu "madu" yang dihasilkan oleh lebah madu *apis dorsata* atau "madu kelulut" yang dihasilkan dari *stingless bee*.

Berdasarkan Peraturan 130, Peraturan-Peraturan Makanan 1985, produk madu perlu mengikut standard yang telah ditetapkan iaitu antaranya adalah mengandungi tidak kurang daripada 60 peratus gula penurunan, mempunyai kandungan sukrosa tidak lebih daripada 10 peratus dan tidak boleh mengandungi hydroxymethylfurfural (HMF) lebih daripada 80 mg/kg.

KKM melalui Program Keselamatan dan Kualiti Makanan (PKKM) sentiasa menjalankan pemantauan produk madu di pasaran. Sebanyak 769 sampel produk madu dengan pelbagai jenama telah diambil dari tahun 2016 sehingga kini. Hasil pemantauan mendapati 45 sampel (5.85%) produk madu tidak mematuhi standard yang ditetapkan di bawah Peraturan-Peraturan Makanan 1985 dan tindakan penguatkuasaan telah diambil ke atas syarikat dan produk terlibat.

Seksyen 13(2)(e) memperuntukkan tiada seorangpun boleh menyediakan atau menjual apa-apa makanan yang diadukkan jika tidak mematuhi standard atau spesifikasi yang ditetapkan oleh mana-mana peraturan yang dibuat di bawah akta ini. Seseorang yang didapati melanggar peruntukan ini dan apabila disabitkan kesalahan boleh dikenakan denda tidak melebihi RM20,000 atau penjara selama tempoh tidak melebihi 5 tahun atau kedua-duanya.

KKM turut menawarkan Skim Pensijilan Makanan Autentik yang bertujuan memberikan pengiktirafan ke atas produk makanan yang disahkan autentik/tulen dan memenuhi kriteria yang ditetapkan di dalam skim pensijilan ini. Ini termasuklah produk madu, daging, kopi dan sarang burung walit. Sehingga kini, tujuh (7) syarikat telah memperolehi Pensijilan Autentik untuk produk madu dari KKM.

Pada masa ini KKM sedang menjalankan kerjasama dengan Agensi Nuklear Malaysia serta Jabatan Pertanian bagi menentukan ketulenan madu menggunakan teknik terkini iaitu menggunakan teknik isotop sebagaimana disarankan oleh standard makanan antarabangsa Codex.

KKM sentiasa peka dan prihatin terhadap perkara-perkara yang boleh mengancam kesihatan pengguna. Pengguna adalah disaran membaca label dan memilih produk makanan yang mempunyai logo Program Jaminan Keselamatan Makanan (PJKM) seperti Autentik, MeSTI, GMP dan HACCP dari KKM. Sebarang kemusykilan berhubung isu keselamatan makanan, pengguna boleh menghubungi Pejabat Kesihatan Daerah atau Jabatan Kesihatan Negeri terdekat atau melalui laman sesawang http://moh.spab.gov.my atau facebook Bahagian Keselamatan dan Kualiti Makanan (BKKM).

https://www.astroawani.com/berita-malaysia/kkm-jawab-isu-lambakan-madu-tiruan-di-pasaran-458202

SARAWAK TRIBUNE

5G not a health threat, say experts

15 February 2024

KUALA LUMPUR: If you own a smartphone or a similar device, you could be using 5G. 5G, or fifth generation, is the latest wireless mobile phone technology that was first widely deployed in 2019, which provides high-speed wireless connections and improves on the capabilities of 4G. Besides faster connectivity speeds, it also opens new use cases in the Internet of Things (IoT) due to its high bandwidth and low latency, enhances performance and offers a wide range of new applications, including strengthening e-Health, such as telemedicine, remote surveillance and telesurgery.

In Malaysia, 80.2 per cent of the country's 5G coverage has been achieved in populated areas as of Jan 1 this year, according to Communications Minister Fahmi Fadzil on Jan 10. However, the rollout of 5G using super high-frequency radio airwaves has reignited old fears that it might increase total exposure to radiofrequency (RF) radiation.

"If you are worried about electromagnetic radiation being connected to cancer or other health problems, all you have to do is to find out everything you need to know about how 5G works," said Prof Emeritus Dr Tharek Abd Rahman from the Faculty of Electrical Engineering, Universiti Teknologi Malaysia (UTM). Indeed, so far there is no concrete evidence or conclusive findings that prove 5G could harm human's health," he told a media briefing at My5G Portal Digital Nasional Bhd (DNB) recently.

Benefits of 5G

Currently, DNB is continuing its rollout of the 5G network, having already achieved its 80 per cent coverage of populated areas (COPA) target at the end of 2023, as well as maintaining the network in terms of performance and service level agreements in the signed access agreements as well as serving all of its customers.

Tharek, who is also an advisor for the Malaysian Communications and Multimedia Commission (MCMC) Academy, said 5G uses electromagnetic wave with higher frequencies than previous wireless networks, making it faster and more efficient.

"The radiofrequency of 5G uses is higher than the previous iterations of wireless communication, including 4G and 3G. Compared to the 4G which provides 1 Gigabit per second (Gbps) fast speed, 5G is 10 times faster than that which provides 10 to 20 Gbps speed. When it comes to 5G, greater speed means greater connectivity. The 5G mobile broadband will be able to support up to a million connected devices per square kilometre compared to 4G which only supports 10,000 per square kilometre. This will be a revolutionary enhancement for industrial plants with thousands of connected devices sending and receiving information in real-time," he said.

In his talk titled '5G Towers, Are They a Health Risk' Tharek said besides that, it also allows smart cities, autonomous cars and high-tech commercial complexes to operate seamlessly through IoT. He said the improved broadband bandwidth means 5G will carry a lot more data and transfer it much quicker than 4G.

"All traffic data which is sent over 5G radio network is encrypted, as well as the user's identity and location, with its integrity protected and subject to mutual authentication. From home devices to construction, mining and manufacturing facilities with thousands of high-tech Marchhinery, 5G is set to lay the foundation for all things connected. The same goes to doctors who would now be able to have consultation and pre-diagnosis sessions with their patients through video call without needing to physically be with them," he added.

Health threat?

On the misconception that 5G is harmful to one's health, he said that within the electromagnetic spectrum, everyday devices such as radio, microwaves, mobile phones, remote controls, and ultrasound instruments emit non-ionising radiation, which poses no threat to one's health.

"Radiofrequency Electromagnetic Fields (RF-EMF) is categorised under non-ionising radiation, which means that the electromagnetic waves do not carry enough quantum that could break bonds between molecules and ionise atoms, as opposed to ionising radiation. In this context, exposure to non-ionising radiation would only cause thermal effects, but not enough to cause long-term defect to human tissues; while ionising radiation is more capable of causing health effects due to the ionising process. Some examples that are categorised as ionising radiation are Xrays and Gamma light, which are used for medical purpose," he said.

He said that sunlight, with its ultraviolet rays, can be more harmful to one's health than everyday devices or the telco towers that are built in residential areas. "The radiation from the sun is a thousand times stronger than the radiation emitted by these devices, which can also cause skin cancer due to its heat directly to our skin," he added.

5G not a health threat, say experts

15 February 2024

Research by Nuklear Malaysia

Meanwhile, Malaysian Nuclear Agency (Nuklear Malaysia) Radiation Health and Safety Division Manager, Roha Tukimin said the organisation has been collaborating with the Malaysian Communications and Multimedia Commission (MCMC) on continuous research on 5G RF-EMF exposure in urban, sub-urban and rural areas since early 2000.

"When 5G was first rolled out, the people were concerned over telcos' 5G towers being built near residential areas as they feared that it was radioactive and would be harmful to their health," she said, noting that other countries have also raised similar concerns over 5G's health risks.

Roha, who is also the non-ionising radiation group researcher, said RM-EMF exposure from the telco structure is far below the permissible exposure limit (PEL) and complied with the MCMC Mandatory Standard and International Guidelines (ICNIRP). "In Malaysia, in regulating the RF-EMF compliance, three documents that we shall refer to namely Mandatory standard (MS) for Electromagnetic Field Emission from Radiocommunication Infrastructure; Determination No.5 of 2021 Technical Code (TC); and Prediction and Measurement of RF-EMF Exposure from Base Station. The objective is to achieve EMF Compliance and applicable to all Network Service Providers (NSP) and Network Facilities Providers (NFP)," she said.

Roha said the PEL set for 3.5 gigahertz (GHz) is at 61 v/m (volt per metre), yet Kuala Lumpur recorded 1.72 v/m, Johor Bahru 0.12v/m, and Penang is at 0.08v/m. Citing the World Health Organisation (WHO), she said current evidence does not confirm the existence of any health consequences from exposure to low levels of electromagnetic fields (RF). "The total Electromagnetic Fields measured for the study sites were only below 10 per cent of the limit, and well below the recommended exposure limit stipulated by the MCMC Mandatory Standard. The results of RF-EMF emitted by 5G transmitters are in compliance with the permissible exposure limits for the public," she explained.

Limit exposure to electronic devices

Meanwhile, Datuk Dr Chang Kian Meng, a haematologist from Sunway Medical Centre advised the public, especially those who are consistently exposed to radiation from devices such as computers and electronic devices, to take precautions to limit their exposure. "I believe it is a good practice to minimise exposure to environmental chemicals and pollutants as a preventive measure against cancer. I don't think there is a clear correlation to assert that excessive use of mobile phones can cause brain cancer or that prolonged use of computers with radiation can lead to cancer," he told Bernama at Sunway Cancer Centre recently. – BERNAMA

https://www.sarawaktribune.com/5g-not-a-health-threat-say-experts/

Benarkah 5G ada ancaman radiasi untuk kesihatan manusia?

Dr. Chang menasihatkan orang awam, terutama mereka yang secara konsisten terdedah kepada radiasi seperti komputer dan peranti elektronik, untuk lebih berhati-hati dan mengehadkan pendedahan.

Sekiranya anda memiliki telefon pintar atau peranti yang sama, anda mungkin menggunakan 5G. 5G, atau generasi kelima adalah teknologi sambungan tanpa wayar terkini telefon pintar yang pertama kali digunakan secara meluas pada tahun 2019. Teknologi 5G ini menyediakan sambungan tanpa wayar berkelajuan tinggi serta meningkatkan kemampuan 4G.

Selain daripada kelajuan sambungan yang lebih tinggi, ia juga membuka penggunaan baharu dalam Internet Benda (IoT) kerana jalur lebar yang tinggi dan kadar lengahan yang rendah. Ia juga meningkatkan pencapaian serta menawarkan pelbagai aplikasi baharu yang meluas, termasuk memperkukuhkan e-Kesihatan, seperti teleperubatan, pengawasan jarak jauh dan telesurgeri.

Menteri Komunikasi Fahmi Fadzil mengumumkan pada 10 January lepas, perkhidmatan rangkaian 5G di Malaysia mencapai 80.2 peratus liputan di kawasan berpenduduk setakat 31 December 2023. Bagaimanapun, kemunculan 5G yang menggunakan gelombang udara radio berfrekuensi tinggi mencetuskan kembali kebimbangan risiko radiasi telefon bimbit yang pernah menular sebelum ini. Sememangnya boleh menjadi cemas jika memikirkan apa yang disalurkan menerusi udara yang kita tidak dapat melihat, terutamanya jika terdapat kebimbangan bahawa 5G mungkin memberi kesan kepada kesejahteraan manusia.

"Sekiranya anda bimbang tentang radiasi elektromagnet yang dikaitkan dengan kanser atau masalah kesihatan lain, apa yang perlu anda lakukan ialah cari semua maklumat untuk anda faham bagaimana 5G berfungsi. Hakikatnya, setakat ini, tidak ada sebarang bukti kukuh atau dapatan muktamad yang membuktikan 5G boleh membahayakan kesihatan manusia," kata Prof Emeritus Dr Tharek Abd Rahman dari Fakulti Kejuruteraan Elektrikal, Universiti Teknologi Malaysia (UTM) sewaktu majlis taklimat media di My5G Portal Digital Nasional Bhd (DNB) baru-baru ini.

MANFAAT 5G

Ketika ini, DNB meneruskan pelancaran rangkaian 5G, setelah mencapai sasaran 80 peratus liputan kawasan berpenduduk (COPA) pada penghuJuneg tahun 2023, di samping memastikan rangkaian dari segi pencapaian dan perjanjian tahap perkhidmatan, seperti terkandung di dalam perjanjian akses, serta memberi khidmat kepada semua pelanggannya.

Tharek, yang juga Penasihat Akademi Suruhanjaya Komunikasi dan Multimedia Malaysia (MCMC) berkata, 5G menggunakan gelombang elektromagnet dengan frekuensi lebih tinggi berbanding jaringan tanpa wayar sebelumnya, menjadikan ia lebih laju dan cekap.

"Penggunaan frekuensi radio 5G adalah lebih tinggi berbanding lelaran komunikasi tanpa wayar sebelum ini, termasuk 4G dan 3G. Berbanding 4G yang menyediakan kelajuan pantas 1 Gigabit sesaat (Gbps), 5G adalah 10 kali lebih pantas yang menyediakan kelajuan 10 hingga 20 Gbps. Untuk 5G, kelajuan yang lebih pantas bermakna penyambungan yang lebih berkualiti. Jalur lebar mudah alih 5G dijangka mampu menyokong sehingga sejuta peranti bagi keluasan satu kilometer persegi, berbanding 4G yang hanya menyokong 10,000 peranti bagi keluasan yang sama. Peningkatan ini sudah tentu memberi manfaat besar kepada loji perindustrian dengan ribuan peranti, menghantar serta menerima maklumat dalam masa nyata," katanya.

Dalam ceramahnya bertajuk '5G towers, are they a health risk' (Menara 5G: Adakah ia pencetus risiko kesihatan) berkata, di samping itu, ia membolehkan bandar pintar, kereta autonomi dan kompleks komersial berteknologi tinggi beroperasi dengan lancar menerusi IoT. Menurut beliau, dengan jalur lebar yang dipertingkatkan, ini bermakna 5G akan membawa lebih banyak data dan memindahkannya dengan lebih cepat, berbanding 4G.

"Semua data trafik yang dihantar menerusi rangkaian radio 5G adalah disulitkan, begitu juga identiti dan lokasi pengguna, yang bermakna integritinya dilindungi dan tertakluk kepada pengesahan bersama. Daripada peranti kediaman kepada fasiliti pembinaan, perlombongan dan pengilangan dengan ribuan jentera berteknologi tinggi, 5G bersiap sedia menyediakan asas untuk semua yang berkaitan. Keadaan sama bagi para doktor yang kini mampu mengadakan rundingan dan sesi pra-diagnosis dengan pesakit menerusi panggilan video tanpa memerlukan mereka hadir secara fizikal," katanya.

ANCAMAN KESIHATAN?

Bagaimanapun, menurut Tharek, ada yang berpandangan 5G membawa kesan negatif ke atas kehidupan mereka, terutamanya yang berkaitan dengan kesihatan. Beliau menjelaskan, dalam spektrum elektromagnet, peranti harian seperti radio, ketuhar mikro, telefon bimbit, alat kawalan jauh dan instrumen ultrasound, mengeluarkan radiasi 'non-ionising' yang tidak memberi sebarang ancaman kepada kesihatan manusia.

"Medan Elektromagnet Frekuensiradio (RF-EMF) dikategorikan di bawah radiasi non-ionising, yang bermakna gelombang elektromagnet tidak membawa kuantum yang mencukupi yang boleh memecah talian antara molekul dan atom ionise, berbanding radiasi ionising. Dalam konteks ini, pendedahan kepada radiasi non-ionising akan hanya menyebabkan kesan haba, tetapi tidak cukup kuat untuk menyebabkan kecacatan jangka panjang kepada tisu manusia, sementara radiasi ionising lebih mampu menyebabkan kesan kesihatan akibat proses ionising. Beberapa contoh yang dikategorikan sebagai radiasi ionising adalah Xray dan cahaya Gamma, yang digunakan untuk tujuan perubatan," katanya.

Beliau berkata, cahaya matahari dengan sinaran ultravioletnya boleh membahayakan kesihatan seseorang berbanding peranti harian atau menara telekomunikasi yang dibina di kawasan kediaman. "Radiasi dari matahari adalah ribuan kali lebih kuat daripada radiasi yang dipancarkan oleh peranti berkenaan, yang boleh menyebabkan kanser kulit akibat haba yang memancar terus ke kulit kita," katanya.

PENYELIDIKAN OLEH NUKLEAR MALAYSIA

Sementara itu, Roha Tukimin, pengurus Bahagian Keselamatan dan Kesihatan Radiasi Agensi Nuklear Malaysia (NUKLEAR Malaysia) berkata, pertubuhan itu bekerjasama dengan MCMC untuk menjalankan penyelidikan berterusan mengenai pendedahan 5G RF-EMF di kawasan bandar, pinggir bandar dan kampung sejak awal tahun 2000.

"Apabila muncul 5G, apa yang menjadi kebimbangan ialah struktur telko yang dibina hampir dengan kawasan kediaman, yang mereka anggap mempunyai radioaktif dan akan membahayakan kesihatan mereka. Ini bukan sahaja berlaku di Malaysia tetapi juga negara lain," katanya.

Roha, yang juga penyelidik kumpulan radiasi non-ionosing berkata, pendedahan RM-EMF dari struktur telko adalah jauh di bawah had pendedahan yang dibenarkan (PEL) dan mematuhi Garis Panduan Standard dan Antarabangsa Mandatori (ICNIRP) MCMC.

"Di Malaysia, dalam mengawal pematuhan RF-EMF, tiga dokumen yang jadi rujukan iaitu Standard Mandatori (MS) untuk Pelepasan Medan Elektrimagnet dari Infrastruktur Radiokomunikasi; Penentuan No 5 dari Kod Teknikal 2021 (TC); dan Ramalan serta Ukuran Pendedahan dari Stesen Pangkalan RF-EMF. Matlamatnya adalah untuk mencapai Pematuhan EMF dan terpakai untuk semua Penyedia Perkhidmatan Rangkaian (NSP) dan Pembekal Fasiliti Rangkaian (NFP)," katanya.

Menurut Roha, PEL yang ditetapkan untuk 3.5 gigahertz (GHz) adalah pada 61 v/m (volt semeter), namun Kuala Lumpur mencatat 1.72 v/m, Johor Bahru 0.12v/m, dan Pulau Pinang, 0.08v/m. Memetik Pertubuhan Kesihatan Sedunia(WHO), beliau berkata, bukti semasa tidak mengesahkah kewujudan mana-mana kesan kesihatan daripada pendedahan kepada paras rendah medah elektromagnet (RF).

"Jumlah Medan Elektromagnet diukur untuk tapak kajian hanya berada di bawah had 10 peratus dan jauh di bawah had pendedahan yang disyorkan, seperti ditetapkan Standard Mandatori MCMC. Hasil RF-EMF dilepaskan oleh pemancar 5G mematuhi had pendedahan yang dibenarkan untuk orang awam," katanya.

HADKAN PENDEDAHAN KEPADA PERANTI ELEKTRONIK

Sementara itu, Datuk Dr. Chang Kian Meng, pakar hematologi dari Pusat Perubatan Sunway menasihatkan orang awam, terutama mereka yang secara konsistennya terdedah kepada radiasi seperti komputer dan peranti elektronik, untuk lebih berhati-hati dan mengehadkan pendedahan itu.

"Saya percaya amalan baik untuk meminimumkan pendedahan kepada kimia dan polutan persekitaran sebagai langkah pencegahan kanser. Saya tidak fikir ada hubungan jelas untuk menekankan bahawa penggunaan berlebihan telefon bimbit boleh menyebabkan kanser otak atau penggunaan berpanjangan komputer dengan radiasi boleh menyebabkan kanser," beliau memberitahu Bernama di Pusat Kanser Sunway baru-baru ini.

https://www.astroawani.com/berita-malaysia/benarkah-5g-ada-ancaman-radiasi-untuk-kesihatan-manusia-458326

Agensi Nuklear Malaysia sahkan kadar radiasi 5G di Sarawak tidak merbahaya

KUCHING, 19 Feb: Kajian Agensi Nuklear Malaysia (ANM) mendapati kadar radiasi daripada telekomunikasi 5G di seluruh Sarawak tidak melebihi dua peratus dan diklasifikasikan sebagai tidak merbahaya.

Pengurus Bahagian Keselamatan dan Kesihatan Radiasi ANM, Roha Tukimin berkata kadar bahaya radias ialah 10 peratus yang menambah, pihaknya telah menjalankan penilaian radiasi di semua bahagian di Sarawak termasuk jauh ke pedalaman di Bario. “Kita mula membuat kajian mengenai radiasi di Sarawak pada 2016 dan disusuli dengan menandatangani MoU dengan SMA pada 2019. Bagaimanapun, kita ingin memperbaharui MoU dengan SMA untuk pembangunan 5G di Sarawak agar kerjasama kita terus diperkukuhkan,” katanya menerusi kenyataan dikeluarkan Lembaga Multimedia Sarawak (SMA) hari ini.

Dalam pada itu, Pemangku Pengurus Besar SMA Ng Hong Ping berkata, pihaknya akan terus memperkukuhkan kerjasama dengan ANM dalam menyebar luas maklumat sahih kepada orang ramai mengenai pembangunan telekomunikasi 5G. Menurutnya, satu kertas kerja akan diusahakan oleh ANM agar kerjasama terbabit diperkukuhkan dengan memorandum persefahaman (MoU). “Kami amat mengalu-alukan kerjasama dengan ANM terutamanya memberitahu masyarakat dengan maklumat yang tepat dan sahih mengenai Pembangunan telekomunikasi 5G.

“Malah kita juga memerlukan kepakaran daripada ANM untuk menyakinkan orang ramai berkaitan isu-isu berbangkit kerana pembangunan 5G merupakan agenda nasional,” katanya.

Sementara itu, pada Khamis lepas, ANM dan SMA bersama-sama beberapa agensi lain turut turun padang untuk menguji kadar radiasi di kawasan Stutong dengan bacaan kurang daripada 0.5 peratus.

https://www.tvsarawak.my/2024/02/19/agensi-nuklear-malaysia-sahkan-kadar-radiasi-5g-di-sarawak-tidak-merbahaya/

Lawatan kerja KSU MOSTI ke Agensi Nuklear Malaysia

4 March 2024

04 March 2024, Selangor – YBhg. Dato Ts. Dr. Hj. Aminuddin bin Hassim, Ketua Setiausaha Kementerian Sains, Teknologi dan Inovasi (MOSTI) telah mengadakan Lawatan Turun Padang ke Agensi Nuklear Malaysia (ANM) bagi meninjau prestasi pelaksanaan Projek Menaiktaraf Makmal Penyelidikan dan Pembangunan Perubatan Nuklear serta Projek Menaiktaraf Pusat Kecemerlangan Metrologi Sinaran Kebangsaan.

Projek Menaiktaraf Makmal Penyelidikan dan Pembangunan Perubatan Nuklear bertujuan untuk membangunkan keupayaan R&D untuk pengeluaran kit radiofarmaseutikal dalam negara dan pemindahan teknologi kepada pasaran untuk kegunaan perubatan nuklear. Projek ini juga memastikan fasiliti kajian pra klinikal dan makmal R&D radiofarmaseutikal mengikut pematuhan Akta 304.

Manakala Projek Menaiktaraf Pusat Kecemerlangan Metrologi Sinaran Kebangsaan bertujuan untuk memperkasakan aktiviti R&D ANM dalam bidang metrologi sinaran, fizik perubatan serta perlindungan sinaran dan teknologi reaktor.

Turut mengiringi KSU MOSTI adalah Ybrs. Dr. Mohammad Rawi bin Mohamed Zin (Timbalan Ketua Pengarah ANM), Ybrs. Encik Ooli Gunalan A/L Manickam (Setiausaha Bahagian Kanan (Pengurusan)), Encik Zulhasmi bin Jamaludin (Setiausaha Bahagian Pembangunan) serta pegawai-pegawai dari Bahagian TSA, Bahagian Pembangunan dan Agensi Nuklear Malaysia.

https://www.mosti.gov.my/en/berita/lawatan-tapak-oleh-dato-ksu-ke-agensi-nuklear-malaysia/

Keterjaminan makanan: Perak sedia usaha 11,000 tanah terbiar

Mohd Zolkafly (kiri) dan Wan Sabri (kanan) pada sidang media di Bangunan Perak Darul Ridzuan, Ipoh, pada Selasa.

IPOH: Ketika negara mengalami masalah kekurangan beras puteh tempatan (BPT), Perak menemui usaha untuk mengusahakan semula tanah-tanah terbiar dengan tanaman padi.

Sebagai perintis, kerajaan negeri Perak akan memulakan projek tanaman padi di kawasan tanah terbiar seluas lapan hektar di Kampung Kandang Hulu, Mukim Kota Lama Kanan, Kuala Kangsar. Menurut Exco Pembangunan Luar Bandar, Perladangan, Pertanian dan Industri Makanan Perak, Datuk Mohd Zolkafly Harun, projek perintis itu adalah hasil kajian Stesen Penyelidikan Padi dan Beras, Universititi Sultan Azlan Shah (USAS).

Beliau berkata, projek tersebut akan menggunakan varieti padi NMR 152 yang dihasilkan oleh Agensi Nuklear Malaysia pada 2021. “Jenis ini adalah tahan daripada cuaca, serangan penyakit dan yang lebih menariknya ialah dia tidak menggunakan banyak air seperti padi-padi tanaman padi yang lain. Memadai dengan keadaan air yang mungkin dalam semasa dalam satu sentimeter semasa untuk menentukan bahawa tanah itu tidak merekah,” katanya.

Beliau berkata demikian ketika ditemui selepas diberi taklimat oleh USAS di pejabatnya di Bangunan Perak Darul Ridzuan, di sini, pada Selasa. Kata Zolkafly, pihak USAS juga akan melaksanakan projek tanaman padi di dalam polibag di halaman 20 buah rumah di kampung sama.

Selain itu, jelas beliau, pihaknya merancang untuk turut memulakan projek tersebut di perkampungan orang asli seluruh negeri, bermula di kawasan Dewan Undangan Negeri Lintang. Katanya, sekiranya berjaya, projek itu dilihat mampu membantu menyelesaikan isu sekuriti makanan kerana terdapat lebih 11,000 hektar tanah terbiar di Perak.

Sementara itu, Naib Canselor USAS, Datuk Dr. Wan Sabri Wan Yusof berkata, kerja-kerja awal projek itu telah dimulakan dengan penglibatan pemilik tanah berkenaan.

“Sebenarnya projek ini sudah pun mula, perbincangan dengan ketua-ketua kampung, kenal pasti tanah-tanah terbiar di kawasan pun sudah dibuat, lawatan pun sudah dibuat, secara tidak rasminya sudah bermula. Kita jangkakan dalam tempoh enam bulan, kita akan nampak perkembangan peojek ini. Padi tersebut hanya akan mengambil masa 110 hari dan dalam tempoh enam bulan Insya-Allah akan nampak hasil,” ujarnya.

Menurutnya, berdasarkan kajian, projek tanaman padi itu mampu mengeluarkan hasil antara lapan hingga sepuluh metrik tan sehektar.

https://www.astroawani.com/berita-malaysia/keterjaminan-makanan-perak-sedia-usaha-11000-tanah-terbiar-466677

Efforts underway to boost rice self-sufficiency levels

NEW areas have been identified for tertiary infrastructure to provide for the cultivation of high-yielding paddy varieties. In stating this, Food Industry, Commodity and Regional Development Minister Datuk Seri Dr Stephen Rundi Utom said the new areas are located in Sri Aman, Kapit, Mukah and Limbang Division.

"To increase paddy production, the government also needs to rehabilitate and upgrade some of the existing Department of Drainage and Irrigation (DID) schemes throughout Sarawak. Based on the Post-Covid Development Strategy (PCDS) 2030, to achieve self-sufficiency level (SSL) of 60 per cent an amount of RM1.2 billion is required to establish and upgrade the paddy infrastructure which consists of 4,500 hectares of new areas and 8,800 hectares of existing DID schemes. However, to achieve 100 per cent SSL, 17,500 hectares of new areas and 8,800 hectares of existing DID schemes are required at an estimated cost of RM4.68 billion," said Dr Rundi.

He said this when delivering his Ministerial winding-up speech at Sarawak State Legislative Assembly (DUN) sitting on Tuesday (May 14). To ensure sustainability and maintaining the genetic purity of Sarawak traditional rice varieties, Dr Rundi said the ministry has established zones for the selected varieties namely Bario in Bario Highland (GI), Adan in Ba'Kelalan (GI), Biris in Lubok Punggor, Samarahan (GI), Bajong in Lubok Nibong, Betong (GI), Wai and Saga in Daro and Mamut in Sri Aman.

Efforts underway to boost rice self-sufficiency levels

"My Ministry is embarking on conserving traditional rice genetic resources by upgrading the existing paddy seed storage facility at Agriculture Research Centre Semongok to a proper and modern Gene Bank. This initiative is critical as a gene bank preserves plant genetic resources. The upgrading of the existing paddy seed storage facility will be done in phases. Phase 1 of the upgrading costing RM300,000 is expected to be completed by November 2024," he said.

Dr. Rundi said the ministry through Department of Agriculture Sarawak (DOA) is also collaborating with various research agencies, led by Malaysian Nuclear Agency, to develop a new high-yielding rice variety. "The research funded by Ministry of Science, Technology, and Innovation (MOSTI) will commence in October 2024 on a seven hectare land at Stumbin, Sri Aman," he said.

https://www.sarawaktribune.com/efforts-underway-to-boost-rice-self-sufficiency-levels/

Nuklear Malaysia alu-alukan kerjasama strategik bersama negara anggota IAEA

KUALA LUMPUR: Nuklear Malaysia mengalu-alukan jaringan kerjasama strategik dilakukan bersama negara anggota Agensi Tenaga Atom Antarabangsa (IAEA) bagi mengarusperdanakan penggunaan teknologi nuklear secara aman di rantau Asia Pasifik. Nuklear Malaysia dalam satu kenyataan berkata, kerjasama itu perlu kerana teknologi nuklear mempunyai kepentingannya dalam sektor sosio ekonomi negara.

"Malah pada 27 September 2022, Malaysia sudah menandatangani Practical Arrangement (PA) di Vienna, Austria bersama IAEA dalam bidang pendidikan dan latihan bagi bidang radiasi, pengangkutan dan keselamatan sisa radioaktif. Menerusi perjanjian itu, Nuklear Malaysia sendiri berperanan sebagai pusat latihan serantau bagi rantau Asia Pasifik. Pusat latihan ini bertanggungjawab dalam penganjuran kursus, pembangunan makmal dan bahan latihan serta membangunkan kepakaran dalam bidang keselamatan sinaran," menurut agensi itu dalam satu kenyataan media, hari ini.

Agensi itu berkata, bagi memahami lebih lanjut teknologi berkenaan, ia turut menghimpun profesional, penyelidik dan penggubal dasar dari rantau Asia Pasifik untuk meningkatkan keupayaan mengenai penggunaan sumber sinaran yang selamat terhadap masyarakat dan alam sekitar.

"Melalui pendekatan itu peserta dapat memahami dan memperkukuhkan perlaksanaan piawaian keselamatan antarabangsa melalui pembangunan modal insan dalam bidang keselamatan sinaran. Perlindungan sinaran adalah aspek penting dalam pelbagai industri termasuk perubatan, tenaga dan penyelidikan di mana penggunaan bahan radioaktif dan sumber sinaran memerlukan pengawalan ketat bagi mengelakkan risiko kepada kesihatan manusia dan kerosakan alam sekitar," menurut kenyataan itu.

Inisiatif itu dilaksanakan melalui kursus antarabangsa Pendidikan PascaSiswazah Ke-18 Mengenai Perlindungan Sinaran & Keselamatan Sumber Sinaran adalah anjuran bersama IAEA dan Kerajaan Malaysia melalui Nuklear Malaysia. Seramai 25 peserta dari 17 negara menyertai kursus peningkatan keupayaan yang dirasmikan oleh Ketua Setiausaha, Kementerian Sains, Teknologi dan Inovasi (MOSTI), Datuk Aminuddin Hassim.

https://www.bharian.com.my/berita/nasional/2024/05/1251108/nuklear-malaysia-alu-alukan-kerjasama-strategik-bersama-negara

Lubang benam: Agensi Nuklear guna radar kesan pergerakan

27 August 2024

Petugas IWK dan anggota bomba menggunakan jentera mesin jetter atau jet pembetung berkuasa tinggi bagi memecah sisa batuan yang terdapat di lokasi kejadian dalam operasi mencari dan menyelamat (SAR) wanita warga India yang hilang dalam insiden tanah jerlus di Jalan Masjid India semalam.

KUALA LUMPUR: Agensi Nuklear Malaysia dan pasukan teknikal Dewan Bandaraya Kuala Lumpur (DBKL) dilihat berada di lokasi insiden tanah jerlus di Jalan Masjid India.

Pasukan berkenaan membawa alat pengesan radar dipercayai bagi mengesan sebarang pergerakan di bawah tanah. Alat sama pernah digunakan dalam insiden tanah runtuh di Batang Kali pada 2022.

Sebelum ini, Indah Water Konsortium (IWK) memulakan aktiviti 'jetting' iaitu penyemburan air bertekanan tinggi di lokasi kejadian tanah jerlus berhampiran Wisma Yakin di Masjid India di sini, malam ini. Operasi yang bermula kira-kira 9.15 malam tadi membabitkan pasukan IWK bersama sebuah jentera air. Turut terbabit operasi adalah pasukan Jabatan Bomba dan Penyelamat Malaysia (JBPM) serta Angkatan Pertahanan Awam Malaysia (APM) yang dilihat memasuki kawasan tanah jerlus bersama hos air.

Kawasan kejadian juga dikawal ketat anggota polis bagi mengelak orang awam melintasi garisan kuning yang dipasang sekeliling lokasi terbabit.

Terdahulu Ketua Polis Daerah Dang Wangi, Asisten Komisioner Sulizmie Affendy Sulaiman dilaporkan berkata, operasi pencarian mangsa tanah jerlus menggunakan 'jetter' di lokasi kejadian di Masjid India, di sini, hari ini. Menurutnya, teknik penyemburan air bertekanan tinggi itu dilakukan selepas mendapati terdapat objek atau serpihan yang menghalang laluan air di dalam lurang kumbahan. Beliau berkata, operasi dijalankan sejak awal pagi hari ini secara berperingkat yang kini sudah memasuki operasi keempat dan dijangka berterusan sehingga objek berkenaan dapat dipecahkan.

https://www.bharian.com.my/berita/nasional/2024/08/1290589/lubang-benam-agensi-nuklear-guna-radar-kesan-pergerakan

Nuklear Malaysia to mainstream atomic tech, boost industry competition

27 August 2024

Science, Technology, and Innovation Minister Chang Lih Kang (centre) during the launch of the National Nuclear Technology Policy 2030 in Putrajaya on September 20, 2023.

KUALA LUMPUR, Aug 27 — The Malaysian Nuclear Agency (Nuklear Malaysia) is committed to integrating nuclear technology into mainstream use to enhance industrial competitiveness, improve public well-being and protect natural resources and the environment. In a statement today, Nuklear Malaysia said its strategic collaborations with industry players and stakeholders will leverage nuclear technology to support the nation's socio-economic growth. In line with this, Nuklear Malaysia said the R&D Seminar Programme and Nuklear Malaysia Innovation Day 2024, which begins today and runs until Thursday, aim to foster collaboration among local experts and R&D professionals across various fields and applications of nuclear science and technology.

"The main objective of this programme is to provide a platform for researchers, inventors, professionals and industry players to share knowledge about R&D products and outcomes, innovative discoveries and the latest solutions through nuclear technology across various sectors. Key activities include presentations of around 150 topics and research findings by Nuklear Malaysia researchers," the statement said.

Themed "Nuclear Technology Driving National Industry and Recognising Excellence in Science and Nuclear Technology Innovation", the agency said the programme aligns with the objectives of the National Nuclear Technology Policy (DTNN) 2030, launched by Science, Technology and Innovation Minister Chang Lih Kang on September 20 last year. Also organised is the National Nuclear Innovation Award 2024 competition and exhibition, showcasing 50 innovative research outcomes from Nuklear Malaysia researchers, various research institutes and public and private universities. Additionally, Nuklear Malaysia is organising a town hall with stakeholders on the DTNN 2030, aimed at providing insights and gathering feedback from industry players, education and research institutions, and non-governmental organisations on the direction of the plan outlined under this policy.

https://selangorjournal.my/2024/08/nuklear-malaysia-to-mainstream-atomic-tech-boost-industry-competition/

Nuklear Malaysia komited arus perdanakan teknologi nuklear, tingkat daya saing industri

Jaringan kerjasama strategik bersama pemain industri dan pihak berkepentingan akan memanfaatkan penggunaan teknologi nuklear.

KUALA LUMPUR: Agensi Nuklear Malaysia (Nuklear Malaysia) komited dalam mengarusperdanakan penggunaan teknologi nuklear ke arah mempertingkatkan daya saing industri, memperkukuh kesejahteraan rakyat serta memelihara sumber asli dan alam sekitar. Nuklear Malaysia dalam kenyataan memaklumkan jaringan kerjasama strategik bersama pemain industri dan pihak berkepentingan akan memanfaatkan penggunaan teknologi nuklear sekali gus menyokong pertumbuhan sosioekonomi negara.

"Antara aktiviti utama pengisian program ini termasuklah sesi pembentangan sekitar 150 topik dan hasil penyelidikan oleh warga penyelidik Nuklear Malaysia," menurut kenyataan itu. Bertemakan "Teknologi Nuklear MeMarchu Industri Negara dan Mengiktiraf Kecemerlangan Inovasi Sains dan Teknologi Nuklear", program itu bertepatan dengan matlamat Dasar Teknologi Nuklear Negara (DTNN) 2030 yang dilancarkan Menteri Sains, Teknologi dan Inovasi Chang Lih Kang pada 20 Sept. tahun lepas.

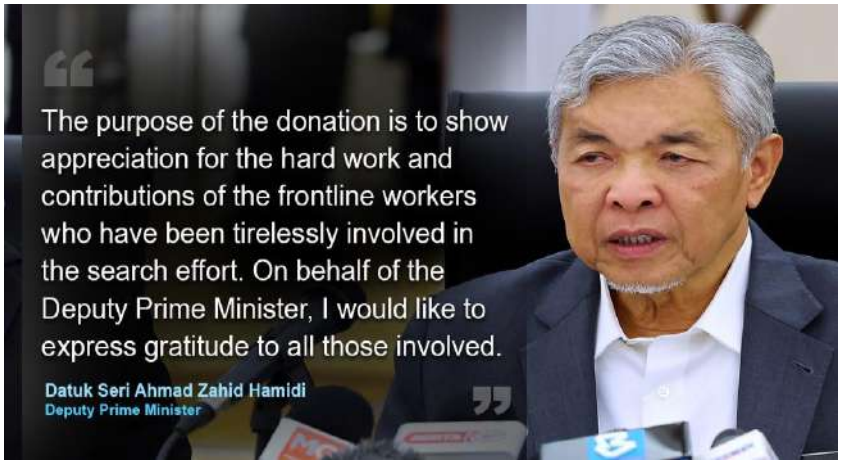
Turut dianjurkan pertandingan dan pameran Anugerah Inovasi Nuklear Kebangsaan 2024 melibatkan penyertaan 50 hasil inovasi penyelidikan para penyelidik Nuklear Malaysia, pelbagai institut penyelidikan, universiti awam dan universiti swasta.

Nuklear Malaysia turut menganjurkan satu sesi dialog awam bersama pihak berkepentingan mengenai Dasar Teknologi Nuklear Negara 2030 yang bertujuan memberikan penerangan dan mendapatkan maklum balas daripada pihak industri, institusi pendidikan dan penyelidikan serta organisasi bukan kerajaan mengenai hala tuju pelan tindakan yang digariskan di bawah dasar itu.

https://www.astroawani.com/berita-malaysia/nuklear-malaysia-komited-arus-perdanakan-teknologi-nuklear-tingkat-daya-saing-industri-485367

SAR ops for missing Indian woman temporarily suspended due to heavy rain

28 August 2024



KUALA LUMPUR: The Search and Rescue (SAR) operation for the Indian tourist who was swallowed up by a sinkhole along Jalan Masjid India here on Friday (Aug 23) has been temporarily suspended at 7.30 pm yesterday due to heavy rain, including at the site of the incident.

In a statement this evening, the Kuala Lumpur City Hall (DBKL) reported that today's SAR operation focused on searching the area around the last known location of the sewer, which is the sewage treatment plant in Pantai Dalam to locate the Indian woman, identified as Vijayalaksmi, 48, of Andhra Pradesh, India.

"The results of the search were negative. The SAR team is also working to break through the manhole cover at the scene to gain clearer visibility inside the manhole," according to the statement. The statement also noted that the SAR team was using Ground Penetrating Radar (GPR), operated by the Department of Minerals and Geoscience (JMG), to assess the condition of the soil around the Masjid India area.

In addition, Ground Penetrating Radar (GPR) methods are also being employed by the Malaysian Nuclear Agency (Nuklear Malaysia) around the sinkhole area.

Survey work by JMG began at the entrance to the Masjid India mosque and extended forward within a 65-metre radius of the mosque.

https://www.sarawaktribune.com/sar-ops-for-missing-indian-woman-temporarily-suspended-due-to-heavy-rain/

Last year, Worldwide Holdings Bhd. in collaboration with Shanghai Electric Power Generation (M) Sdn Bhd. the EPCC Contractor, announced the construction of WTE facilities at the Jeram.

EARLIER this year, Deputy Prime Minister Datuk Seri Fadillah Yusof said that the government aims to ensure that 40% of Malaysia's primary energy mix comes from renewable energy sources by 2035.

Speaking at the launch of the Malakoff Corporation Bhd Biomass Co-Firing Project at the TanJuneg Bin energy plant on May 26, he mentioned that the move would reduce carbon dioxide (CO2) emissions by 10 million tonnes annually, and the Energy Transition and Water Transformation Ministry (Petra) aims to raise the percentage of renewable energy to 100% in 2050.

"The country's energy sector represents 29% of the gross domestic product (GDP) and employs a quarter of the country's workforce. Therefore, changes in the energy system will not only impact income and economic development, but also the livelihood of the people who depend on affordable energy," he said then.

In an effort to decarbonise our energy systems, nuclear energy has been brought up as a potential pathway to diversify Malaysia's energy mix and ensure long-term energy security despite its omission from the National Energy Transition Roadmap (NETR).

The Malaysian Nuclear Agency (Nuklear Malaysia) had also stated earlier in January that with the latest developments, it is crucial that the country considers generating power using nuclear energy. Nuklear Malaysia Director-General Dr. Rosli Darmawan had acknowledged the potential of nuclear energy despite its omission from the National Nuclear Technology Policy 2030.

Dr. Rosli said most industries have begun to seriously consider the use of nuclear energy as fossil fuels such as coal are the biggest contributors to carbon emissions today. As discussions unfold regarding the country's energy transition and public utilities landscape, the consideration of nuclear energy becomes increasingly pertinent. This is being explored in tandem with the incorporation of other forms of renewable energy sources, such as waste-to-energy (WTE) plants, of which the government has identified 18 possible sites for the plants to serve the needs of every state in Peninsula Malaysia. WTE plants offer a potential solution by converting waste into electricity and heat. However, they are not without challenges, including emissions and lower energy yields compared to other renewable sources.

Meeting energy demands

Nuclear power stands at a critical Junecture in the global energy landscape, where its economic competitiveness is being scrutinised in comparison to other energy sources. Understanding the economic aspects of nuclear power is essential for evaluating its role in the transition to a sustainable energy future. The primary criticisms of nuclear power stem from its high initial capital costs and public safety concerns. Building a nuclear power plant requires substantial investment in construction, safety systems and regulatory compliance.

Nuklear Malaysia told StarESG that [the energy's] ability to generate large quantities of electricity with minimal carbon emissions positions it as a key player in the transition to a low-carbon future. "Unlike renewable sources such as solar, which are subject to weather conditions and variability, nuclear power provides a steady and reliable supply of energy. This consistency is crucial for industries with high and continuous energy demands, which require uninterrupted power to operate efficiently," says Nuklear Malaysia. The nation aims to achieve 40% renewable energy by 2035 to reduce CO2 emissions by 10 million tons annually, as part of a broader strategy to ensure energy security by diversifying and affordable energy sources.

Hamizah said that while nuclear power itself may have lower direct emissions during electricity production, the upstream and downstream processes involved in the nuclear fuel cycle still contribute to overall CO2 emissions, even if the power plant operation is relatively low-carbon.

In the context of Malaysia, where the energy sector still heavily relies on fossil fuels, the adoption of nuclear power could be a game-changer. According to Nuklear Malaysia, it has a lower carbon footprint compared to fossil fuels which offers a viable path to significantly reducing greenhouse gas (GHG) emissions, thereby aligning with national and global climate goals.

"Moreover, nuclear energy's efficiency—generating vast amounts of electricity from relatively small amounts of fuel—makes it an attractive option for supporting economic growth while preserving natural resources," Nuklear Malaysia explains.

The predictability of long-term costs associated with nuclear power, due to its relatively stable fuel prices, further strengthens its appeal. Nuklear Malaysia also says that the availability of uranium, coupled with advancements in nuclear technology, ensures that nuclear power can serve as a long-term, sustainable energy source.

Why the worry?

Nuclear waste management and assuaging public fears have emerged as critical hurdles on the road to a sustainable energy future.

Greenpeace Malaysia (Greenpeace) told StarESG that nuclear and WTE plants do not have significant impacts on achieving net zero emissions by 2050, as both technologies still emit carbon, with additional concerns on high cost and safety issues. "Despite nuclear being a low carbon technology in terms of power generation, the entire lifecycle of a power plant itself from uranium mining, transportation, fuel processing, construction of the plant, fuel processing and waste disposal, emits CO2," says Greenpeace climate and energy campaigner Hamizah Shamsudeen.

These often overlooked processes tend to diminish the overall environmental benefits of nuclear power. The high costs of building, maintaining and decommissioning nuclear facilities further complicate its role in sustainable energy in the future. There is also the worry of adopting a 'wait-and-see' approach in regards to radioactive waste management which poses concerns for the public.

"Even though nuclear waste remains radioactive for thousands of years, no proven solution exists for dealing with radioactive waste aside from storing if for future generations to deal with; which raises the risks associated with nuclear energy, including potential accidents, high risks associated with natural disasters such as floods—of which Malaysia is prone —the challenges of long-term radioactive waste storage and management, present serious concerns," Hamizah adds.

This procrastination strategy has left numerous nations grappling with the issue for decades without reaching a satisfactory resolution. Noteworthy examples include the Netherlands deferring decisions on waste management until 2100 and the Czech Republic planning to initiate disposal efforts in 2065.

Understanding this, Nuklear Malaysia says that for a new embarking country like Malaysia, managing nuclear energy waste responsibly is crucial, especially in the context of its energy transition goals. The nation can leverage its existing experience in handling radioactive waste, particularly through the expertise of Nuklear Malaysia, which has a track record in managing various forms of radioactive materials.

"A comprehensive waste management strategy must be developed, adhering to international standards such as those set by the International Atomic Energy Agency (IAEA). This includes establishing a robust regulatory framework, ensuring that waste is stored safely, and eventually disposed of in secure facilities," the agency says. The agency also acknowledges that developing secure interim storage facilities is a critical step.

"These facilities would safely contain waste until a permanent solution, such as deep geological repositories, can be implemented. Collaboration with international partners can enhance Malaysia's capability to manage nuclear waste, learning from countries with established nuclear programmes," Nuklear Malaysia explains.

They add that research and development should be encouraged to explore advanced waste management technologies, such as recycling and reprocessing spent fuel, to minimise the volume of waste that requires long-term storage.

"By aligning its waste management practices with global best practices and leveraging the agency's expertise, Malaysia can ensure that its nuclear energy programme supports the country's energy transition while safeguarding environmental and public health."

Net zero, zero waste

In parallel, a statement by Malaysian Investment Development Authority (Mida) said that WTE facilities can substantially contribute toward Malaysia becoming a zero waste nation due to its hygienisation process of waste.

"This process prevents the waste recycling process from the risk of contamination by polluted waste and diverts non-recyclable waste from landfills, dumpsites and open fires. Moreover, the energy generated creates spillover benefits by supplying electricity to neighbouring residential, commercial and industrial establishments," it read. This energy generation is more sustainable and less dependent on fossil fuel. The material recovery through WTE facilities is especially beneficial to the metal industry, as great amounts of materials can be recovered from the bottom ashes, including minerals and other precious metals.

Malaysia is banking on WTE solutions with the Housing and Local Government Ministry (KPKT) establishing six WTE plants across the country by next year. However, WTE processes are not entirely carbon-neutral. "WTE is primarily a waste management solution rather than a clean energy solution. It tends to perpetuate a wasteful lifestyle and the burning of valuable, and limited resources that could be repurposed by encouraging the continuous production of waste rather than promoting reduction, reuse and circular recycling," explains Hamizah. She describes how the transportation of waste to these incinerator plants produces CO2 and the burning process of the waste releases harmful pollutants like dioxins, which pose health and environmental risks.

While WTE plants can reduce our reliance on landfills and help address methane emissions, it may consume more energy than it produces, making it an inefficient and unsustainable option for addressing climate change. "Therefore, its contribution to reducing overall carbon emissions is limited, not to mention the high costs of establishing and operating WTE facilities make them less viable as a long-term sustainable solution. Incineration should be the very last option as it also consumes valuable resources that could be put to other use, while at the same time encouraging the production of waste and the current throwaway culture," Hamizah emphasises.

A mixed bag

Energy security encompasses availability, reliability and affordability. Diversifying energy sources, building resilience to disruptions and ensuring economic accessibility while being environmentally sustainable are crucial. Focusing on renewable energy, energy efficiency and hybrid technologies can provide a better solution for energy security.

Greenpeace emphasises that escalating costs further complicate the economic feasibility of nuclear power which takes a minimum of eight years to construct, with prospective delays that could increase its already high investment costs. This underscores the need for investments in research to enhance existing sustainable approaches to energy generation such as solar panels, of which Malaysia is already a major producer.

Instead, Hamizah says that taking advantage of the abundant amount of sunlight Malaysia gets as well as the maturity of the solar energy facilities and incentives programme the government has introduced in Malaysia will best work towards increasing solar utilisation in the energy mix. That said, advancements in nuclear technology have led to improved safety standards and reduced environmental impacts, making nuclear power a cleaner alternative. Other than that, government subsidies and incentives play a role in shaping the economic landscape of energy production. Policies that support nuclear energy development, research and decommissioning can influence its economic competitiveness relative to other energy sources. Instead of viewing nuclear energy as a choice between other renewable alternatives, it can be seen as a complementary ally to renewable sources such as solar and wind power.

Nuklear Malaysia is actively implementing many initiatives to educate Malaysians about the benefits and safety measures associated with nuclear science and technology. These efforts are focused on raising awareness, dispelling myths and providing accurate, up-to-date information on the role of nuclear technology in society.US-based Lazard's Power, Energy & Infrastructure Group vice chairman and global head George Bilicic emphasised that to significantly reduce emissions, a diverse set of clean energy technologies is essential. He stated that the shift away from fossil fuels will not be driven by a single energy solution, but rather by a comprehensive strategy that incorporates multiple options, known as a new "all-of-the-above" approach.
https://www.thestar.com.my/news/nation/2024/08/30/malaysias-path-to-carbon-neutrality-and-the-energy-conundrum

SAR team remains committed on Day 9 of search for sinkhole victim

31 August 2024

A view of the search efforts yesterday at the site in Jalan Masjid India where a woman fell into a sinkhole on Friday, Aug 23.

KUALA LUMPUR: The search and rescue (SAR) team remains dedicated to finding the victim of the sinkhole incident at Jalan Masjid India, now in its ninth day of operations. More than 115 officers and personnel were involved in the operation including those from the police, fire and rescue department, Kuala Lumpur City Hall (DBKL), civil defence force, Indah Water Konsortium, Malaysian Nuclear Agency and the mineral and geoscience department.

A check by Bernama at the location at 9.30am this morning found that the SAR team members were already at the scene of the incident and the surrounding area to continue the search for the victim, but there has been no progress so far. DBKL said last night the search would continue past midnight. It is understood that the SAR team continued operations until 4am this morning, and used a telescopic camera to see a clearer image, especially in the two sewers in the search area which were found to be blocked due to debris and backlog. The camera combines the technologies of both push rod and crawler cameras previously employed in the search efforts.

Meanwhile, a source close to the search operation indicated that Federal Territories minister Dr Zaliha Mustafa has been scheduled to hold a press conference at 2pm today. On Aug 23, Vijayaletchumy, 48, a tourist from India, went missing after falling into an 8m-deep hole caused by a sinkhole on Jalan Masjid India while walking to a nearby temple. A search and rescue (SAR) operation was launched the same day, involving security forces and local authorities. For the past eight days, the team has employed various techniques, including jetting, flushing, and pumping water out of the site to locate the victim.
https://www.freemalaysiatoday.com/category/nation/2024/08/31/sar-team-remains-committed-on-day-9-of-search-for-sinkhole-victim

Malaysian Nuclear Agency seminar addresses impacts of climate change on food production


Photo credit: Malaysian Nuclear Agency

JOHOR BAHRU, Sept 25 (Bernama) -- The Malaysian Nuclear Agency today held a seminar addressing the impacts of extreme weather, rising global temperatures and shifting rainfall patterns on agriculture and food production. Its director-general Dr Rosli Darmawan said these challenges threaten not only food availability but also national security in terms of production, distribution and storage. Rosli added that the 11th Food Security Seminar, themed "Achieving Food Sustainability in the Era of Climate Change," explored a range of pertinent topics.

Key discussions included food security, quality management, halal standards, legislation, processing technologies and the future of the food industry. The aim was to enhance understanding and bolster the resilience of the national food sector in the face of these challenges. “Integrating nuclear technology, strong policies and agricultural innovation is essential for achieving food sustainability, even amidst escalating climate change challenges," he said in a statement today. Rosli highlighted that the Atoms4Food initiative, backed by the International Atomic Energy Agency (IAEA), offers significant opportunities to enhance food security in Malaysia and globally.

He said agricultural production is expected to increase by about 70 per cent by 2050, requiring Malaysia to strengthen its infrastructure through innovative nuclear techniques. "This includes plant mutation breeding for better crop varieties and molecular markers for food traceability, as well as monitoring soil and environmental conditions affected by climate change. “The Sterile Insect Technique (SIT) also helps control pests like fruit flies, while isotopes aid in reducing greenhouse gas emissions. Together, these technologies enhance the agricultural sector’s resilience to climate change," he added.
The seminar was orgnised in collaboration with various ministries and institutions, including the Ministry of Health, the Ministry of Agriculture and Food Security and the Malaysian Agricultural Research and Development Institute (MARDI), along with industry representatives from Farm Fresh Milk Sdn. Bhd. – BERNAMA

https://www.bernama.com/en/general/news.php?id=2344427

Malaysia Energy Overview

Malaysia aims to become carbon neutral by 2050, an ambitious target requiring major changes to its energy infrastructure and policies. In this endeavor, the government has established clear renewable energy targets, with a specific aim to incorporate renewables into 70% of its power generation by the 2050. Presently, the nation's energy landscape is predominantly reliant on fossil fuels. As of 2020, fossil-based energy sources, including natural gas (42.4%), crude oil and petroleum products (27.3%), and coal (26.4%), held a dominant share in Malaysia's primary energy mix. In contrast, renewable energy sources accounted for a mere 3.9% of the total energy portfolio. To successfully realize its decarbonization objectives, Malaysia will need to diversify and increase renewable energy.

In the past, Malaysia had a robust nuclear program, complete with ambitious plans to establish two operational nuclear power plants by the year 2021. However, these plans took an unexpected turn and were indefinitely postponed, ultimately leading to the disbandment of the Malaysia Nuclear Power Cooperation in 2018. Now, with the pressing need to decarbonize and diversify its energy sources, some experts suggest nuclear power should be back on the table. Additionally, Economy Minister Rafizi Ramli and Natural Resources, Energy and Climate Change Minister Nik Nazmi Nik Ahmad have indicated they are considering nuclear as part of energy transition planning.

Nuclear Energy Development in Malaysia

In 2008, the government initiated the Nuclear Power Development Steering Committee. In 2009, then-Prime Minister Najib Razak unveiled a plan to establish a small-scale nuclear reactor. By 2011, the Malaysia Nuclear Power Cooperation (MNPC) was established as a Nuclear Energy Program Implementing Organization (NEPIO). Positioned under the Prime Minister's Department, MNPC took on the functions of the Nuclear Power Development Steering Committee. Alongside the establishment of MNPC, a budget of USD7.69 million from 2010–2012 highlighted Malaysia's strong commitment to NPP development.

Former MNPC CEO, Dr. Zamzam Jaafar speaking at Asia Nuclear Business Platform in Shanghai.

In Malaysia's nuclear power program, operation of a NPP will most likely fall on the hands of a utility company such as Tenaga Nasional Berhad (TNB), the leading electricity utility in Malaysia. Taking such moves by the government into consideration. TNB has been preparing for nuclear power generation This includes plans for a preliminary survey, site selection, human resource development, environmental impact assessments, and construction.

In 2009, Under the Memorandum of Understanding (MOU) between Korea Electric Power Corporation (KEPCO) and TNB, the utilities embarked on a Consultancy for Preliminary Feasibility Study (Pre-FS) of Nuclear Power Program in Malaysia. The Pre-FS was jointly carried out for twelve (12) months between 2009 and 2010. During the project, TNB sent a total of 20 employees from the Pre-FS study group to the Republic of Korea for training on Project Management and Project Engineering that were organized by KEPCO.

The objective of the Pre-FS training program was to provide awareness on nuclear power and as an introduction to nuclear engineering. The scope of the training program includes the fundamentals of nuclear engineering, nuclear fuel cycle, NPP design and systems, NPP commissioning, NPP operation and maintenance, radiation protection, nuclear safety and regulation, nuclear safeguard and security, and quality assurance.

In 2014, TNB worked together with Électricité de France (EDF) to develop a comprehensive TNB Nuclear Roadmap under the MOU between the utilities to collaborate in areas of regulatory studies and nuclear technology. The 6-month study on the Nuclear Roadmap was carried out to ensure TNB's readiness as part-owner, developer and operator of Malaysia's first NPP once the decision is made by the Government.

TNB has been sending its employees to various courses, training programs, workshops, conferences and meetings on nuclear project development and nuclear technology, held locally and abroad for 8 years. Most of these trainings are held under the auspices of the IAEA as part of its human resource development program for new comer countries considering nuclear power.

There were also several courses that were organized through good relationship and existing cooperation between Malaysian institutions (i.e. Malaysia Nuclear Agency (MNA) and UNITEN) and Japanese institutions such as Japan Atomic Energy Agency (JAEA), Hitachi-GE, and Tokyo Institute of Technology.

TNB employees are selected based on their expertise related to the particular training topics such as power plant design, generation planning, project development, construction, safety and health, legal management and policy planning. MNA plays a big role in promoting and coordinating the training programs with related organizations and stakeholders in Malaysia's nuclear power program including TNB.

Recognizing the shortage of experienced personnel to teach nuclear engineering courses, Malaysia explored partnerships with universities and international entities. Organizations such as the European Nuclear Education Network (ENEN) and the Asian Network for Education in Nuclear Technology (ANENT) were considered to bolster the nation's capacity in this critical field.

A significant milestone in Malaysia's nuclear power journey occurred in July 2014 when Minister in the Prime Minister's Department, Dato' Mah Siew Keong, announced a comprehensive feasibility study aimed at building a nuclear power plant (NPP) within a decade. This proclamation showcased the government's commitment to nuclear energy development. To further underscore this commitment, Malaysia introduced the Atomic Energy Regulatory Bill, which aimed to separate nuclear regulators from operators. Notably, the bill included a dedicated chapter on nuclear liability, known as the Atomic Energy Regulatory – Nuclear Liability Financial Security Regulations, aligning with the Vienna Convention on Civil Nuclear Liability. By 2017, Malaysia had made substantial progress in completing the requisite studies for Phase 1 and exhibited a commendable understanding of the 19 nuclear infrastructure issues outlined by the International Atomic Energy Agency (IAEA).

Potential Nuclear Future

Malaysia once had a robust nuclear energy program, with some experts even asserting that the nation was the most prepared in ASEAN to operate a nuclear power plant. However, after Prime Minister Najib Razak's term ended in 2018, his successor Tun Dr Mahathir Mohamad asserted that Malaysia would not pursue nuclear power plants. Consequently, plans were indefinitely postponed, leading to the disbandment of the Nuclear Power Cooperation in 2018. Recently, the Malaysian government has indicated a renewed openness to including nuclear power in the country's future energy mix.

In our opinion, there are several compelling reasons for Malaysia to revive its nuclear energy program.Firstly, nuclear power can help Malaysia meet its clean energy goals and transition away from fossil fuels. As a zero-emission energy source, adding nuclear to the energy portfolio would align with the government's aim of reducing carbon emissions. While renewable sources like solar and wind are preferable, nuclear can provide reliable baseload power to complement intermittent renewables.

Secondly, new SMR designs offer enhanced safety and lower costs. SMRs are smaller, factory-built reactors that utilize passive safety features and modular construction. This makes them more affordable to build and easier to operate safely, addressing public concerns. With improved SMR technology, the risks associated with nuclear power plant are diminishing.

Finally, nuclear diversifies Malaysia's energy supply and reduces dependence on imported fossil fuels. Over the past decade, Malaysia has made significant strides in developing the necessary infrastructure and expertise to support a nuclear power program. This foundation encompasses institutional frameworks, legal frameworks, and capacity-building initiatives—all essential components for the successful implementation of the nuclear energy program. Should Malaysia decide to revive its nuclear program, it will find itself well-positioned to do so.

Perhaps the most vital element to consider is the politically sensitive nature of nuclear power programs. Consistent political support and unwavering commitment from the government are imperative for the success of a nuclear energy program. It is crucial that policies remain stable and conducive to the development of nuclear energy, ensuring that the nation's energy goals are met in a safe and sustainable manner.

In conclusion, Malaysia's previous experience with nuclear energy, though disbanded in 2018, has paved the way for potential future endeavors in this field. However, it is essential that any resurgence of the nuclear program be accompanied by comprehensive planning, public engagement, and unwavering political support to ensure its success and safety.

https://www.nuclearbusiness-platform.com/media/insights/reviving-malaysia-nuclear-energy-program

Institutional reform agenda among highlights of Parliament today

23 October 2024

KUALA LUMPUR: The institutional reform agenda, the construction of a new nuclear reactor and the misappropriation of subsidised diesel in the country will be among the matters discussed in the Dewan Rakyat today.

According to the Order Paper on the Parliament website, Aminolhuda Hassan (PH-Sri Gading) is scheduled to ask the Prime Minister about the institutional reform agenda during the questions for oral answer session.

Aminolhuda will seek clarification on the progress of the institutional reform agenda emphasised by the Prime Minister through the unity government and enquire when appointments for chairpersons of institutions like the Election Commission will be made through Parliament.

In the same session, Datuk Ahmad Amzad Hashim (PN-Kuala Terengganu) will pose a question to the Science, Technology and Innovation Minister regarding plans to build a new nuclear reactor with more advanced technology to replace the Triga Puspati Reactor (RTP), which has been in use since 1982.

Roy Angau Gingkoi (GPS-Lubok Antu) will ask the Domestic Trade and Cost of Living Minister if the government intends to take more decisive action to combat misappropriation of subsidised diesel, particularly in states bordering neighbouring countries such as Sarawak, and the proactive measures taken to address leakage and smuggling of other subsidised items.

The session will then proceed with the policy-level debate on the Supply Bill 2025. The Third Meeting of the Third Session of the 15th Parliament will run for 35 days until Dec 12.

https://www.sarawaktribune.com/institutional-reform-agenda-among-highlights-of-parliament-today/

Lab results on thorium extraction from LC and WLP residue encouraging, Dewan Rakyat told

KUALA LUMPUR, Oct 23 (Bernama) -- Laboratory results from the research and development (R&D) project on thorium extraction from lanthanide concentrate (LC) and water leach purification (WLP) residue have shown encouraging outcomes, the Dewan Rakyat was told today. Science, Technology and Innovation Minister Chang Lih Kang said the ministry is actively monitoring the R&D project, and the findings show that thorium extraction from lanthanide concentrate achieved 100 per cent, while WLP reached 92 per cent. "These are very encouraging results, and we hope to scale this up to a pilot project level.

"Theoretically, thorium reactors are safer and produce less radioactive waste that doesn't last as long. However, using thorium as a fuel requires advanced and complex technology, as well as high costs," he said. He was replying to a supplementary question from Datuk Ahmad Amzad Mohamed @ Hashim (PN-Kuala Terengganu). The development of thorium-fuelled molten salt nuclear reactors to generate energy has gained global attention, as they are believed to be safer, produce less greenhouse gas, and generate lower amounts of radioactive waste. Meanwhile, Chang said the ministry, through the Malaysian Nuclear Agency, is conducting a Technical Study on the Triga Puspati Reactor (RTP) Replacement Plan, which began in 2022 and will run until 2025, funded under the 12th Malaysia Plan. He said the study includes the socio-economic impact assessment of the Multi-Purpose Reactor (MPR) project, including the costs of construction, operation, safety, security, usage control, and waste management, all of which must comply with international standards. "This study also takes into account input and suggestions from stakeholders to ensure that the project benefits all interested parties in Malaysia.

"Other planned activities include a feasibility study on the MPR, the development of a strategic plan for the MPR programme, and preparations for an expert mission of the Integrated Nuclear Infrastructure Review for Research Reactor (INIR-RR) by the International Atomic Energy Agency (IAEA)," he said. He added that with the new nuclear research reactor, MOSTI aims to reduce Malaysia's reliance on imported radioisotopes for medical, industrial, and bioscience purposes. -- BERNAMA

https://www.bernama.com/en/news.php?id=2355444

Agensi Nuklear Malaysia anjur seminar mengenai keutuhan bahan binaan dan struktur

28 October 2024

Rosli ketika menyampaikan ucapannya pada Majlis Perasmian Seminar Material and Structural Integrity, baru-baru ini.

KUANTAN – Agensi Nuklear Malaysia baru-baru ini menganjurkan satu seminar mengenai keutuhan bahan dan struktur yang digunakan dalam bidang kejuruteraan, pembinaan, tenaga dan pengeluaran di Malaysia. Menurut agensi berkenaan dalam satu kenyataan hari ini, usaha ini merupakan satu inisiatif bagi memastikan bahawa infrastruktur yang dibangunkan mampu bertahan lama serta selamat digunakan

Ketua Pengarah Agensi Nuklear Malaysia, Dr. Rosli Darmawan berkata, amalan penyelenggaraan yang berkesan di anggap sebagai penyelesaian utama, namun landskap industri yang dinamik memperlihatkan cabaran-cabaran yang tidak dijangka tetapi berpotensi mempercepatkan kemerosotan jangka hayat komponen kritikal. (Sehubungan itu) kajian dan penyelidikan (R&D) berterusan mengenai bahan dan keutuhan struktur adalah amat penting.

“Ini termasuk pemahaman mendalam mengenai sifat-sifat bahan, ketahanan terhadap tekanan, perubahan suhu dan faktor luaran lain yang boleh menjejaskan keutuhan struktur,” katanya. Beliau berkata demikian ketika berucap merasmikan Seminar on Material and Structural Integrity 2024, di sini baru-baru ini.

Beliau menambah, kerajaan komited meningkatkan keupayaan R&D dalam kejuruteraan bahan sama ada bahan konvensional apatah lagi bahan termaju yang wujud dalam teknologi baru muncul (emerging technology) pada hari ini dan masa akan datang.

"Seiring dengan teknologi A.I, kemajuan dalam kecerdasan buatan dan analisis data besar memberi impak positif kepada pemantauan integriti struktur, membantu mengesan potensi masalah lebih awal dan mengurangkan risiko kegagalan," katanya lagi.

Seminar selama dua hari ini turut menjadi platform untuk membincangkan inovasi dalam sains bahan dan teknik pengujian serta isu-isu berkaitan.

Penganjuran kali ini turut mendapat kerjasama daripada Persatuan Saintis Penyelidik Malaysia (MARS) dan disokong oleh pihak Setiausaha Kerajaan Negeri Pahang, Jabatan Tenaga Atom (JTA), Jabatan Kerja Raya (JKR), Lembaga Pembangunan Industri Pembinaan Malaysia (CIDB), Persatuan NDT Malaysia (MSNT) dan Lembaga Teknologis Malaysia (MBOT).

https://malaysiatribune.news/2024/10/28/agensi-nuklear-malaysia-anjur-seminar-mengenai-keutuhan-bahan-binaan-dan-struktur/

Agensi Nuklear Malaysia anjur seminar kukuhkan kawalan keselamatan sinaran di tempat kerja

30 October 2024

Rosli ketika menyampaikan ucapan perasmian Seminar Kesedaran Keselamatan Sinaran bagi Orang Bertanggungjawab Terhadap Lesen (OBTL), di sini semalam.

KUALA LUMPUR – Kepimpinan dalam pengurusan keselamatan sinaran merupakan satu aspek penting dalam memastikan pematuhan kepada Akta Perlesenan Tenaga Atom 1984 (Akta 304).

Bagi memastikan aspek pengurusan sedemikian diutamakan, Agensi Nuklear Malaysia semalam mengadakan Seminar Kesedaran Keselamatan Sinaran bagi Orang Bertanggungjawab Terhadap Lesen (OBTL) yang menekankan kawalan keselamatan sinaran di tempat kerja.

Ketua Pengarah Agensi Nuklear Malaysia, Dr. Rosli Darmawan berkata, peranan OBTL adalah besar dalam memastikan setiap amalan berkaitan sinaran dalam organisasi dijalankan mengikut piawaian keselamatan yang ketat dan mematuhi Akta 304.

Akta 304 ini bukan sekadar garis panduan, tetapi menjadi asas utama yang mengawal selia penggunaan tenaga atom dan bahan radioaktif di Malaysia. Kepatuhan kepada akta ini bukan sahaja wajib, malah tidak boleh dikompromi.

“Dengan kepatuhan yang tinggi, kita dapat mengurangkan risiko sinaran, melindungi kesihatan awam serta memelihara alam sekitar daripada ancaman sinaran yang tidak terkawal,” katanya dalam satu kenyataan.

Seminar ini turut mengetengahkan peranan penting teknologi dan aplikasi sinaran mengion dalam pelbagai sektor antaranya pertanian, perubatan, agrikultur, industri, pembuatan, penyelidikan dan alam sekitar.

Selain itu, seminar ini turut menjadi satu wadah ilmu untuk berkongsi pengetahuan dan pengalaman dalam pengurusan dan kepimpinan nuklear terhadap perlindungan sinaran keselamatan, amalan keselamatan sinaran terbaik di tempat kerja dan budaya kerja yang selamat dalam kalangan para OBTL, pekerja sinaran dan orang awam di sekitarnya.

Kepimpinan dalam bidang ini bukan sahaja menekankan aspek pengetahuan teknikal, malah memerlukan pengurusan strategi betul dalam perlindungan keselamatan sinaran.

“Semua pihak terlibat perlu memainkan peranan proaktif dalam memastikan keselamatan sinaran yang mampan,” kata Rosli lagi.

Beliau kemudiannya menambah, kerjasama dan sokongan yang mantap serta komitmen yang berterusan oleh semua pihak boleh menjadi asas kepada kepimpinan nuklear yang mantap dan berwibawa, kerana penerapan budaya keselamatan yang kuat secara menyeluruh adalah kunci kepada kejayaan pengurusan sinaran di Malaysia.

https://malaysiatribune.news/berita-semasa/agensi-nuklear-malaysia-anjur-seminar-kukuhkan-kawalan-keselamatan-sinaran-di-tempat-kerja/

Malaysia bakal guna nuklear jadi salah satu sumber tenaga masa hadapan

5 November 2024

Rafizi bercakap pada Forum Pelan Tindakan OGSE Kebangsaan di Kuala Lumpur, hari ini.

KUALA LUMPUR: Malaysia akan menggunakan penjanaan tenaga nuklear sebagai salah satu sumber tenaga pada masa hadapan, demikian menurut Menteri Ekonomi, Rafizi Ramli.

Beliau berkata, keputusan mengenai kemungkinan negara menggunakan tenaga nuklear telah dibuat dan tanggungjawab itu sedang dilaksanakan oleh Kementerian Peralihan Tenaga dan Transformasi Air (PETRA) dan Kementerian Sains, Teknologi dan Inovasi (MOSTI).

Katanya, langkah itu bagi memastikan kerangka undang-undang dan peraturan dapat dibangunkan terlebih dahulu. "Oleh kerana keputusan itu telah dibuat oleh Majlis Tenaga Negara dan diperakukan oleh Jemaah Menteri, maka tenaga nuklear berkemungkinan dimasukkan dalam Rancangan Malaysia Ke-13 (RMK-13) sebagai salah satu sumber tenaga negara rasmi," katanya selepas Forum Pelan Tindakan Perkhidmatan dan Peralatan Minyak & Gas (OGSE) Kebangsaan di sini, hari ini.

Mengulas lanjut, Rafizi berkata, nuklear adalah tenaga yang lebih bersih berbanding dengan sumber tenaga lain sekali gus dapat membantu negara mencapai matlamat pelepasan karbon sifar bersih menjelang 2050. Beliau berkata, kos operasi untuk jangka hayat nuklear juga lebih terjamin kerana ia tidak bergantung kepada turun naik harga bahan mentah seperti gas dan arang batu.

Menurutnya, disebabkan nuklear tidak bergantung kepada bahan mentah itu, maka jangka hayat tenaga nuklear adalah lebih terjamin. Justeru, katanya banyak negara lain ketika ini dilihat telah mula kembali kepada penjanaan tenaga nuklear.

Selain itu, teknologi nuklear sekarang berbeza dengan teknologi nuklear dahulu yang memerlukan kemudahan yang besar. Ketika ini, telah ada reaktor modular kecil (SMR) yang saiznya lebih kecil, selamat dan tidak memerlukan kos yang besar.

"SMR sesuai digunakan untuk kawasan-kawasan yang memerlukan dengan lebih mudah dan murah berbanding penggunaan tenaga konversional. Atas faktor-faktor itu terutamanya teknologi SMR, kerajaan buat keputusan untuk mengkaji kebolehlaksanaan nuklear di Malaysia," katanya.

Ketika ditanya sama ada kerajaan akan membiayai pelaksanaan tenaga nuklear, Rafizi berkata kerajaan hanya melaksanakan rangka kerja yang komprehensif termasuk peraturan antarabangsa.

Beliau berkata, berdasarkan model industri penjanaan ketika ini, pelaksanaan projek akan dijayakan oleh pihak swasta.

"Peringkat awal, kerajaan akan melaksanakan dari segi rangka kerja dan memastikan Malaysia mematuhi peraturan antarabangsa. Bagi sektor tenaga untuk terbabit dalam nuklear, saya merasakan ia akan diputuskan dan dikawal selia, kemungkinan besar oleh Suruhanjaya Tenaga," katanya.

Pada masa ini, Agensi Nuklear Malaysia di bawah MOSTI adalah organisasi penyelidikan dan pembangunan (R&D) utama dalam bidang sains dan teknologi nuklear di Malaysia.

https://www.bharian.com.my/bisnes/lain-lain/2024/11/1320083/malaysia-bakal-guna-nuklear-jadi-salah-satu-sumber-tenaga-masa

Malaysia cadang guna nuklear sebagai sumber tenaga negara pada masa depan - Rafizi

5 November 2024

Rafizi bercakap pada Majlis Pelancaran Rangka Kerja Kelestarian OGSE Nasional di Pusat Konvensyen Sime Darby, pada Selasa.

KUALA LUMPUR - Malaysia bercadang untuk menggunakan penjanaan tenaga nuklear sebagai salah satu sumber tenaga negara pada masa hadapan, kata Menteri Ekonomi Rafizi Ramli. Justeru, katanya, Kementerian Peralihan Tenaga dan Transformasi Air (PETRA) serta Kementerian Sains, Teknologi dan Inovasi (MOSTI) telah dipertanggungjawabkan untuk memastikan kerangka undang-undang dan peraturan dibangunkan bagi tujuan tersebut.

"Oleh kerana keputusan itu telah dibuat di peringkat Majlis Tenaga Negara dan juga diperakukan oleh Jemaah Menteri, maka dalam Rancangan Malaysia ke-13 kemungkinan sumber nuklear akan dimasukkan secara rasmi sebagai salah satu dari sumber tenaga di negara ini," katanya.

Beliau berkata demikian kepada pemberita selepas dialog industri sempena Forum Pelan Tindakan Sektor Peralatan dan Perkhidmatan Minyak dan Gas (OGSE) 2024, di sini, pada Selasa.

Rafizi berkata, peringkat awal pembangunan sektor nuklear memerlukan rangka kerja undang-undang dan peraturan yang ketat termasuk pematuhan terhadap undang-undang dan peraturan antarabangsa. "Terdapat senarai panjang pematuhan antarabangsa yang perlu kita patuhi walaupun sebelum kita memulakan pelaksanaan tenaga nuklear. Ia akan diputuskan dan dikawal selia kemungkinan oleh Suruhanjaya Tenaga di peringkat pengawalseliaan," katanya.

https://www.sinarharian.com.my/article/694897/berita/nasional/malaysia-cadang-guna-nuklear-sebagai-sumber-tenaga-negara-pada-masa-depan---rafizi

Malaysia eyes nuclear energy for future mix in 13MP, says Rafizi

"At the initial stage of nuclear sector development, a strict legal and regulatory framework would be needed, including compliance with international regulations".

KUALA LUMPUR, Nov 5 — Malaysia is considering using nuclear energy generation as one of the country's energy sources in the future, said Economy Minister Rafizi Ramli.

He said that the responsibility for this is being carried out by the Ministry of Energy Transition and Water Transformation (Petra) and the Ministry of Science, Technology, and Innovation (Mosti) to ensure that the legal framework and regulations are developed for this purpose.

"Since the decision has been made at the National Energy Council level and endorsed by the Cabinet, the 13th Malaysia Plan (13MP) will officially include the possibility of nuclear energy as one of the energy sources in the country," Rafizi said after an industry dialogue held in conJunection with the National OGSE Blueprint Forum 2024, here today.

Rafizi added that at the initial stage of nuclear sector development, a strict legal and regulatory framework would be needed, including compliance with international regulations.

There is a long list of international compliance that we have to meet even before we embark into nuclear. But I think the nitty-gritty of how the power sector participates in nuclear, that will be decided and regulated most probably by the Energy Commission. "This is at the regulatory level," he added.

https://www.malaymail.com/news/malaysia/2024/11/05/malaysia-eyes-nuclear-energy-for-future-mix-in-13mp-says-rafizi/155908#google_vignette

Fadillah assures careful review before nuclear power commitment

Deputy Prime Minister Datuk Seri Fadillah Yusof

KUALA LUMPUR: The Energy Transition and Water Transformation Ministry (PETRA) has assured that the government will carefully deliberate before making any decisions to embark on nuclear power development, Deputy Prime Minister Datuk Seri Fadillah Yusof said.

He noted that nuclear power is among the clean energy sources that could meet the expected surge in electricity demand, especially from industries, data centres, and electric vehicles, which require a stable and economically competitive supply. Simultaneously, coal-generated baseload power is projected to decline significantly by 2035.

Accordingly, Fadillah said PETRA, through its special-purpose agency MyPOWER Corporation, is conducting a feasibility study that includes reviewing the latest nuclear technologies and revisiting the Malaysia Nuclear Power Corporation studies completed prior to its closure in 2018.

"Among others, we are looking into the conventions on the peaceful uses of nuclear energy, regulations for safety, security and safeguards, and stakeholder considerations. The study will provide recommendations to the government on the feasibility of nuclear power as an alternative fuel for electricity generation," he told Bernama.

Fadillah, who is also the PETRA Minister, said the study would explore nuclear technologies suited to Malaysia, including Small Modular Reactors (SMRs), as newcomer countries generally prefer proven nuclear power technology with strong operational track records aligned with international best practices.

"Nonetheless, there are several dimensions to technology assessment, particularly the size and type of power requirement, development capital costs, operational considerations, risks, site and so on," he added.

Nuclear Power in Malaysia's Energy Mix

Fadillah said that there is no specific target yet for nuclear's share in the energy mix, as a nuclear power policy must first be established.

"Nevertheless, among the scope of the study is to determine the suitable quantum of nuclear power in the energy mix," he said, adding that there were several factors that should be considered such as provision of baseload supply, complement to variable renewable energy, industrial use or as part of a micro-grid or rural electrification solution.

The diversification of the mix also depends on the availability and reliability of other sources, development timeframe, and costs of each option, he added.

Fadillah explained that these factors are holistically evaluated in power planning to determine the optimal energy mix for Malaysia's needs.

"To give you a sense of how much this varies - in France, nuclear power makes up about 70 per cent of their energy mix while Sweden has about 30 per cent. In comparison, China is at 5.0 per cent with a near-term target of 10 per cent. In a few newcomer countries that have recently established nuclear power such as in the United Arab Emirates, nuclear energy constitutes 25 per cent of the country's electricity needs while Bangladesh expects a 12 per cent contribution from its first nuclear power plant," he added.

Repurposing Coal-Fired Plants for Nuclear Power

In the United States, ageing and defunct coal-burning plants are being repurposed for solar, battery, and other renewable energy projects, partly due to their valuable existing grid connections.

While Malaysia has set a phase-out plan for coal-fired plants-aiming to reduce their share to 50 per cent by 2035 and fully retire them by 2044-Fadillah noted that some coal-fired power plants (CFPPs) due to retire before 2030 could potentially be repowered with gas to meet the fast-growing electricity demand.

However, Fadillah emphasised that there are no immediate plans to repurpose retired CFPPs for nuclear plants. "We have seen reports that new nuclear power plants could save up to 35 per cent on construction costs depending on the suitability of the existing site assets including grid connection.

"Nevertheless, as a general rule, any repurposing of CFPPs must fully comply with national regulations, international standards, and industrial good practices, particularly regarding safety, environmental protection, and nuclear security, to ensure a responsible and resilient energy transition," he added.

Fadillah said evaluating potential sites for repurposing would be part of the nuclear power plant site selection process.

Building a Skilled Nuclear Workforce

Malaysia has a strong foundation in nuclear expertise. It has safely operated a nuclear research reactor for over 40 years, hosted large high-irradiation facilities for industrial sterilisation, and effectively managed low-level radioactive waste.

The Department of Atomic Energy Malaysia, alongside technical support organisations such as the Malaysian Nuclear Agency, is internationally recognised as a subject matter expert, providing nuclear consultancy worldwide.

Fadillah said that if the government proceeds with nuclear power, ensuring a sufficient, highly skilled, and competent workforce would be central to the development plan. He highlighted that Malaysia already has a skilled workforce in power plants and industrial refineries, which could be further trained to support nuclear plant management.

"Additionally, Malaysia continuously engages with experienced nuclear-operating countries through international platforms such as the International Atomic Energy Agency (IAEA) to ensure peaceful uses of nuclear technology," said Fadillah.

He added that collaboration and partnerships would be essential for capacity building and training to ensure the successful implementation of nuclear power in Malaysia.
https://www.thestar.com.my/business/business-news/2024/11/11/fadillah-assures-careful-review-before-nuclear-power-commitment

Govt mulling using nuclear energy as future power source - MOSTI

KUALA LUMPUR: The government is considering using nuclear energy as a power source for the country in the future, said Science, Technology, and Innovation Minister Chang Lih Kang. He said the initiative is part of the efforts towards achieving net zero carbon emissions by 2050. Technological advancements have made nuclear energy more suitable for Malaysia with innovations such as the Small Modular Reactor that enable smaller, safer, and more cost-effective nuclear plants.

"These new technological features can be used in areas where conventional energy sources are not suitable in terms of application and cost. Advances in nuclear technology offer advantages in terms of safety, particularly with improvements in waste management," he said during the winding-up of the debate on the Supply Bill 2025 at the policy level for his ministry in Dewan Rakyat today. Chang said modern reactors produce less radioactive waste by utilising more efficient fuel, adding that nuclear energy offers stability in terms of long-term operational costs, particularly in fuel price.

He said nuclear energy also offers high energy efficiency, requiring little fuel, such as uranium, yet capable of generating large amounts of power, much more efficiently than fossil fuels. As the ministry responsible for developing Science, Technology, and Innovation (STI), he said MOSTI could play a role in providing expertise through training programmes. According to Chang, the Malaysian Nuclear Agency has over 40 years of experience, knowledge and expertise in operating and maintaining the TRIGA PUSPATI nuclear research reactor, which can be applied to a nuclear energy programme if implemented in the future. Along with that, the government continuously conducts public awareness campaigns such as educational programmes, visits by experts, dialogues, and public forums to increase public awareness about nuclear safety.

"The Malaysian Nuclear Agency is collaborating with the Communications Ministry through the Information Department to implement nationwide communication, educational and public awareness (CEPA) initiatives on nuclear technology," he added.

https://thesun.my/malaysia-news/govt-mulling-using-nuclear-energy-as-future-power-source-mosti-EH13271959#google_vignette

Kerajaan pertimbang guna tenaga nuklear, sebagai sumber tenaga negara

11 November 2024

Menteri Sains, Teknologi dan Inovasi, Chang Lih Kang

KUALA LUMPUR, 11 November- Kerajaan sedang mempertimbang penggunaan tenaga nuklear sebagai sumber tenaga negara pada masa depan.

Menteri Sains, Teknologi dan Inovasi, Chang Lih Kang berkata ia sebahagian daripada usaha dalam mencapai matlamat pelepasan karbon sifar bersih menjelang 2050.

STI boleh memainkan peranan dalam menyediakan kepakaran melalui program latihan. Selain itu, Agensi Nuklear Malaysia mempunyai pengalaman, pengetahuan dan kepakaran di dalam mengendali dan menyelenggara reaktor penyelidikan nuklear iaitu reaktor TRIGA PUSPATI selama lebih 40 tahun.

“Ia boleh diaplikasikan ke dalam program tenaga nuklear sekiranya dilaksanakan pada masa akan datang," kata Chang di dalam Dewan Rakyat, hari ini. Tambahnya, kemajuan teknologi telah menjadikan tenaga nuklear lebih sesuai untuk Malaysia dengan inovasi baharu. Antaranya Reaktor Modular Kecil (SMR) yang membolehkan loji nuklear lebih kecil, selamat dan kos efektif.

https://berita.rtm.gov.my/nasional/senarai-berita-nasional/senarai-artikel/kerajaan-pertimbang-guna-tenaga-nuklear-sebagai-sumber-tenaga-negara

Malaysia eyes nuclear power as part of energy transition strategy

The Science, Technology and Innovation Ministry (MOSTI) said this was seen as a proactive solution to the country's energy trilemma challenges of ensuring stability, sustainability, and energy efficiency.

KUALA LUMPUR: Malaysia is considering nuclear energy as a primary energy source to achieve carbon neutrality by 2025, in line with the National Energy Transition Roadmap and the National Energy Policy. The Science, Technology and Innovation Ministry (MOSTI) said this was seen as a proactive solution to the country's energy trilemma challenges of ensuring stability, sustainability, and energy efficiency.

MOSTI said they, together with the Energy Transition and Water Transformation Ministry, had been tasked with exploring nuclear energy development in Malaysia, including providing technical expertise and training. The ministry, through Nuclear Malaysia and the Atomic Energy Department Malaysia, plays a key role in nuclear technology development and regulation.

"Nuclear Malaysia has the expertise to assist with the technical aspects of nuclear energy development in Malaysia, which will help the country transition to nuclear technology. Malaysia is optimistic that the existing expertise, along with international cooperation, will accelerate the safe and efficient adaptation of nuclear energy technology," MOSTI said in a statement today.

MOSTI added that the nuclear energy program, if implemented, would strengthen Malaysia's position as a country committed to a sustainable energy future and carbon neutrality. Meanwhile, with the increase in allocation for the ministry in the 2025 Budget, the ministry said it was committed to accelerating Malaysia's transition towards a high-tech, high-income nation while boosting Malaysia's position as a global leader in innovation and technology.

During the tabling of the Budget on Oct 18, the ministry received a 4.7 per cent increase in its operating budget to RM738 million, and a 0.15 per cent increase in its development budget to RM536.62 million.

https://www.nst.com.my/news/nation/2024/11/1133525/malaysia-eyes-nuclear-power-part-energy-transition-strategy

More funds, experts needed for nuclear energy transition, says Science Minister

12 November 2024

KUALA LUMPUR: Malaysia lacks both the expertise and funding to begin nuclear energy development even as the country moves towards becoming a zero-carbon nation, says Chang Lih Kang.

The Science, Technology and Innovation Minister said the country did not have enough experts to support a full transition to nuclear energy. He said the country only has 300 nuclear energy experts through its Malaysian Nuclear Agency (Nuklear Malaysia). “While we do have the expertise to run (a) nuclear power (facility), there are nowhere near enough to properly support a nuclear energy-based power grid. If the government wants to continue its efforts, we will need five to 10 years at least to develop more talents in nuclear energy up to the minimum PhD level,” he told a press conference at the Parliament building on Tuesday (Nov 12).

Chang said the ministry also lacked the funding to both develop talent and conduct research and development (R&D) on nuclear energy. He added that even if the ministry's entire RM195mil allocation for R&D were used just for nuclear energy research, it would not be enough. “We need a bigger budget, but will make do with what we have to engage with nuclear energy R&D,” he said.

On Nov 5, Economy Minister Rafizi Ramli said the government would consider using nuclear energy as one of the country’s energy sources as part of the 13th Malaysia Plan (13MP). He added that a strict legal and regulatory framework, including compliance with international regulations, would be needed at the initial stage of development.

https://www.thestar.com.my/news/nation/2024/11/12/more-funds-experts-needed-for-nuclear-energy-transition-says-science-minister

SARAWAK TRIBUNE
13 November 2024

National nuclear technology policy set to drive socioeconomic growth, generate export value of RM2.4 billion by 2030

BANGI: Mention nuclear technology and what usually comes to mind are 1986's Chernobyl disaster in Ukraine or the bombings of Hiroshima and Nagasaki in Japan during World War 2.

However, it is time to dispel this negative stigma as nuclear technology offers substantial opportunities and benefits in fields like agriculture, healthcare and industry, propelling the nation's socioeconomic development. Globally, nuclear technology is recognised as one of the leading advanced technologies capable of addressing socioeconomic challenges. Japan, for example, has risen from the devastation of Hiroshima and Nagasaki to become a developed nation and a key reference country for nuclear technology and power.

Aware of these benefits, Malaysia is now taking proactive steps to explore peaceful uses of nuclear technology by introducing the National Nuclear Technology Policy 2030 (DTNN 2030). This policy aims to mainstream the peaceful use of nuclear technology, targeting an export value of RM2.4 billion for domestic nuclear technology-related products by 2030.

NUCLEAR TECHNOLOGY DEVELOPMENT IN SIX KEY AREAS

Chang said the ministry also lacked the funding to both develop talent and conduct research and development (R&D) on nuclear energy.

Malaysian Nuclear Agency (Nuklear Malaysia) director-general Dr Rosli Darmawan said under DTNN 2030, six key sectors have been identified as areas whose capabilities can be enhanced through the peaceful use of nuclear technology in Malaysia.

National nuclear technology policy set to drive socioeconomic growth, generate export value of RM2.4 billion by 2030

Malaysian Nuclear Agency (Nuklear Malaysia) Director-General Dr. Rosli Darmawan.

The sectors concerned are medicine and healthcare; food and agriculture; device and equipment manufacturing; environmental and natural resource management; industrial applications; and nuclear safety and security.

"DTNN has 19 flagship programmes, 40 flagship initiatives and 18 strategies. If all these programmes are implemented, they are expected to contribute to the annual growth of the export value of local nuclear technology-related products to RM2.4 billion by 2030. Malaysia is also targeting a 20 percent increase in public-private partnerships, as well as a 10 percent increase in international collaborations and a 40 percent rise in the application of nuclear technology in specific fields such as education, agriculture and the environment," he told Bernama.

NUCLEAR TECHNOLOGY IN MALAYSIA

Rosli said Malaysia has been making peaceful use of nuclear technology since 1897 with the introduction of X-ray Marchhines, adding that the use of this technology has grown significantly in the country since then. He noted that nuclear technology is already being applied in Malaysia in sectors such as food and agriculture, environment, healthcare and industry and it has brought great benefits to the nation.

"Nuclear technology can help verify the authenticity of food or trace its origin. For example, it can detect whether harum manis mangoes being sold actually come from Perlis or not. In the environmental field, we have expertise in using isotope technology to trace sources of water causing landslides, as well as sources of contamination of water supply. This method of determining the causes (of landslides and water contamination) is known as environmental forensic technique," he explained.

NUCLEAR AS A SOURCE OF POWER GENERATION

Rosli said using nuclear technology as an energy source for electricity generation offers significant benefits to the country as it is a low-carbon energy source and more cost-effective. “Nuclear energy is an ideal alternative for Malaysia because it is more economical. While initial operating costs are relatively high, nuclear energy can produce more energy which makes nuclear a much more efficient, and low-carbon, alternative to using fossil fuels. This technology has high energy density, meaning it can generate large amounts of power with a small quantity of material, unlike coal which needs constant replenishment,” he pointed out.

Economy Minister Rafizi Ramli has previously said that Malaysia is considering nuclear power generation as one of the country’s future energy sources. He said the Ministry of Energy Transition and Water Transformation and the Ministry of Science, Technology and Innovation (MOSTI) have been tasked with developing the necessary legal and regulatory framework for this purpose.

3S CONCEPT ENSURES SAFE USE OF NUCLEAR

Addressing public concerns about nuclear technology, Rosli said the harnessing of nuclear energy has improved over the years and is always subject to oversight by the International Atomic Energy Agency (IAEA), which ensures strict adherence to the 3S concept: safety, security and safeguards.

In Malaysia, he added, Nuklear Malaysia is responsible for conducting research and development (R&D) in the use of nuclear science and technology for the country’s socioeconomic development while ensuring compliance with the 3S.

“Nuclear technology is actually used in daily life though people may not realise it. Radiation technology has been applied in Malaysia’s agricultural sector to produce new, drought- and disease-resistant crop varieties such as the NMR152 rice. This is just one example of how nuclear technology benefits the country,” he said, noting that nuclear technology was also used in detecting victims during rescue operations following a landslide in Batang Kali, Selangor, in 2022.

Malaysian Nuclear Agency (Nuklear Malaysia)

MALAYSIA RECOGNISED IN THE GLOBAL NUCLEAR ECOSYSTEM

Rosli said the country, through Nuklear Malaysia, can now take pride in its growing recognition within the global nuclear ecosystem, having produced more than 5,000 experts in related fields and becoming a reference for other countries. He said Nuklear Malaysia also plays a role as the National Authority for the implementation of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) to ensure Malaysia's compliance with international obligations under the CTBT.

"We are operating a radionuclide monitoring station in Cameron Highlands and a National Data Centre at Nuklear Malaysia. In the early stages of nuclear technology adoption, Malaysia was a recipient country of this technology. However, today it is recognised as a donor country, meaning Malaysia is now acknowledged as a provider of nuclear technology to other nations," he added.

MALAYSIA'S NUCLEAR FACILITIES RECOGNISED

Rosli also said the use of nuclear technology has grown in line with the rapid development of the nation's industries, with Malaysia housing various facilities and laboratories focused on nuclear science and technology. Malaysia also has a nuclear research reactor, the TRIGA PUSPATI Reactor (RTP), which has been operating at Nuklear Malaysia since 1982.

Other facilities include nuclear safety and security laboratories such as the Physical Protection Laboratory, Mobile Radiological Laboratory, Radiochemical and Environmental Laboratory and Analytical Chemistry Laboratory, which ensure the safe use of nuclear technology.

Science, Technology and Innovation Minister Chang Lih Kang was previously quoted as saying that MOSTI is currently conducting a technical study on the TRIGA PUSPATI Reactor replacement plan. According to Chang, this study is part of the DTNN 2030 strategy, which aims to strengthen nuclear technology development in Malaysia.

Through this initiative, the country is expected to reduce its reliance on importing various types of radioisotopes used in the medical, industrial and bioscience sectors, thereby contributing to scientific knowledge and high-tech innovation, said Chang.

This year, Nuklear Malaysia received the BioNexus Partner Laboratories (BNP) Award. The award went to the agency's Medical Technology Division's PharMarcheutical Laboratory. It also won two gold medals at the 35th International Invention, Innovation and Technology Exhibition and a gold medal at the International Development Research & Innovation Virtual Exhibition.

"My hope is that society will not fear or think negatively about nuclear technology. In general, nuclear energy is cleaner and better compared to coal, which releases carbon dioxide," Rosli said.

https://www.sarawaktribune.com/national-nuclear-technology-policy-set-to-drive-socioeconomic-growth-generate-export-value-of-rm2-4-billion-by-2030/

The Malaysian government is exploring the potential of nuclear energy as a future power source, aligning with its ambition to achieve net-zero carbon emissions by 2050. The Ministry of Science, Technology, and Innovation (MOSTI), under the guidance of its minister, views nuclear energy as a viable option, citing technological advancements in the sector, including innovations like Small Modular Reactors (SMRs), which present promising benefits for Malaysia's energy needs.

SMRs, a new class of nuclear reactors, offer an efficient, compact, and more adaptable energy solution compared to traditional reactors. Designed to meet safety and cost-efficiency requirements, these reactors can be deployed in locations where conventional energy sources may face logistical or economic constraints. This makes nuclear energy an attractive alternative in regions where traditional power sources is either impractical or inefficient. SMRs provide modular flexibility, enabling scalability in various geographic and infrastructural settings, while integrating improved safety protocols to address potential risks associated with nuclear power generation.

One of the primary technical advantages of modern nuclear technology lies in enhanced safety features, particularly in waste management and operational control. Unlike older nuclear models, newer reactors generate less radioactive waste, owing to optimised fuel utilisation. This efficiency in fuel usage not only minimises waste production but also contributes to stable, long-term operational costs. The potential stability of nuclear energy offers Malaysia an attractive alternative to fossil fuels, especially considering the volatility of global energy markets and the rising costs associated with traditional energy sources.

In terms of fuel efficiency, nuclear power requires minimal raw materials, such as uranium, to generate substantial energy outputs. The fuel-to-energy ratio of nuclear technology surpasses that of fossil fuels, which typically require a greater quantity of material to produce equivalent energy levels. This high energy density translates to greater reliability and continuity of power supply, essential for supporting Malaysia's infrastructure and economic growth in the long run.

As Malaysia progresses towards a potential nuclear energy program, Mosti intends to leverage the extensive experience of the Malaysian Nuclear Agency (MNA). With over four decades of expertise in nuclear technology, the MNA has been operating the Triga Puspati nuclear research reactor, which has equipped the agency with critical skills in nuclear management and safety protocols. This experience, along with the agency's knowledge of nuclear reactor operations, could play a pivotal role in Malaysia's future energy strategy, should the government proceed with nuclear energy deployment.

To support public understanding of nuclear energy and its safety aspects, MOSTI is coordinating with the Malaysian Communications Ministry through the Information Department to conduct awareness initiatives. These initiatives encompass educational programs, public forums, expert visits, and dialogues aimed at enhancing public knowledge of nuclear technology and safety practices. The government recognises that public acceptance and trust are essential components for the successful implementation of any nuclear initiative and aims to build an informed and supportive public base through transparent communication.

In addition to these outreach efforts, MOSTI has indicated plans for training programs to develop local expertise in nuclear technology. These programs are intended to build a skilled workforce capable of managing nuclear energy infrastructure and contributing to the nation's broader science and innovation landscape. By fostering local expertise, Malaysia not only seeks to bolster its energy resilience but also aims to support a long-term transition to sustainable, low-carbon energy solutions.

Malaysia's interest in nuclear energy aligns with global trends towards cleaner, more efficient energy sources. Nations worldwide are exploring nuclear technology to curb carbon emissions, given its capacity to produce large amounts of energy without the greenhouse gas output associated with fossil fuels. If implemented, nuclear energy could serve as a crucial component of Malaysia's broader energy mix, complementing renewable resources and supporting the country's climate goals.

https://opengovasia.com/2024/11/14/next-gen-energy-malaysias-technological-leap/

Agensi Nuklear Malaysia guna teknik isotop stabil buktikan ketulenan madu

15 November 2024

Agensi Nuklear Malaysia guna teknik isotop stabil buktikan ketulenan madu

Apabila sebut tentang nuklear, pasti terlintas di fikiran ialah bom, senjata nuklear dan bahan radioaktif yang berbahaya. Siapa sangka, nuklear juga dapat digunakan untuk tujuan yang baik. Selain itu, ia turut mempunyai pelbagai fungsi yang boleh dimanfaatkan untuk kebaikan ramai.

Di Malaysia, Agensi Nuklear Malaysia (Nuklear Malaysia) yang berada di bawah Kementerian Sains, Teknologi & Inovasi (MOSTI) adalah organisasi utama yang bertanggungjawab dalam penyelidikan dan pembangunan nuklear di negara ini. Antara projek utama yang sedang dijalankan adalah penentuan kebolehkesanan makanan (food traceability) menggunakan teknik nuklear dan berkaitan bagi tujuan meningkatkan kawalan sistem keselamatan makanan negara.

Agensi Nuklear Malaysia melalui teknik saintifik nuklear mampu mengesan dan mengesahkan ketulenan sesuatu produk makanan. Ini kerana peningkatan mendadak jumlah dagangan global dan rantaian bekalan yang kompleks antara faktor menimbulkan banyak isu berkaitan ketidaktulenan dan keselamatan makanan. Ia sekaligus mendedahkan amalan penipuan daripada pihak-pihak tidak bertanggungjawab, di mana keadaan ini secara tidak langsung boleh mendatangkan risiko kesihatan serius kepada masyarakat tanpa mengira umur.

Kajian Teknik Isotop telah digunakan di luar negara

Lazimnya apabila berlaku ancaman keselamatan makanan seperti bahan mentah tercemar atau penipuan, soalan pertama adalah dari mana sumber asal usul makanan tersebut. Justeru, teknik nuklear yang merupakan pencapjarian isotop stabil terbukti berkesan untuk membezakan makanan daripada asalan geografi berbeza dan juga menentu sahkan makanan autentik atau tulen.

Walaupun bidang ini baru dikaji di Malaysia, namun penyelidikan di negara luar telah membuktikan keberkesanan gabungan teknik nuklear untuk mengesan asal-usul dan ketulenan produk makanan seperti keju, ubi kentang, beras, jus buah, madu dan minyak zaiton.

Bahkan, sistem ini telah digunakan oleh banyak negara untuk menangani isu kualiti dan keselamatan makanan seperti pencemaran mikrob, penipuan pelabelan dan ketulinan produk makanan di pasaran.

Isu penipuan madu semakin berleluasa di pasaran Malaysia

Susulan peningkatan penipuan madu kelulut di pasaran, perkara ini telah menimbulkan isu keselamatan makanan dan risiko kesihatan serius kepada masyarakat. Melalui Projek IAEA 'Enhancing Food Safety through Development of standard for authentication of Malaysian honey through Nuclear and Supporting Techniques', (2018 – 2021) NM telah berjaya membangunkan kaedah mengesahkan ketulenan madu (autentik) menggunakan kaedah AOAC 998.12 (Association of Official Analytical Collaboration) menggunakan teknik isotop stabil. Di samping itu, model ketulenan madu telah dibangunkan dari pangkalan data bagi madu kelulut dan madu lebah di Malaysia.

Pembangunan Teknologi isotop dalam ketulenan madu adalah kaedah terkini dan efektif untuk digunakan sebagai kaedah piawai bagi pengesahan ketulenan dan asalan geografi madu.

Mangga Harumanis turut menggunakan teknik isotop

Selain madu, Agensi Nuklear Malaysia melalui kerjasama strategik dengan Jabatan Pertanian telah membangunkan profil isotop mangga harumanis yang merupakan salah satu jenis buah-buahan yang popular di Malaysia. Malah ia mempunyai permintaan komersial yang luar biasa dan ditanam dengan luas di negeri utara Malaysia iaitu Perlis. Untuk makluman, mangga harumanis mempunyai nilai pasaran yang tinggi dan telah didaftarkan sebagai Petunjuk Geografi di bawah Perbadanan Harta Intelek Malaysia (MyIPO).

Akta Petunjuk Geografi 2022 melindungi pengeluaran buah mangga ini hanya berasal dari negeri Perlis sahaja. Tindakan injuksi dan ganti rugi boleh dikenakan sekiranya pelabelan Harumanis digunakan bagi mangga yang dikeluarkan dari negeri lain.

Lain daripada itu, mangga import dari negara lain seperti Tong Dam (mempelam siam) kerap dijual dengan label Harumanis Perlis. Oleh itu, tiada kaedah lain kecuali teknik isotop yang dapat membuktikan samada mangga tersebut adalah Harumanis Perlis yang asli. Sebenarnya ini amat membimbangkan para pengguna kerana penipuan ini boleh merugikan seterusnya memberikan perspektif negatif terhadap penjualan Harumanis di dalam ataupun luar negara.

Ikuti sosial media rasmi Nuklear Malaysia untuk mengetahui maklumat terkini mengenai teknologi tersebut. Untuk maklumat lanjut boleh layari laman web rasmi Nuklear Malaysia di www.nuclearmalaysia.gov.my atau e-mel: ukk@nm.gov.my

https://siakapkeli.my/?p=654257&preview=1&_ppp=9408b474ce

Reaktor Triga Puspati di Malaysia pacu teknologi nuklear, lahirkan saintis masa depan

16 November 2024

Sejak 2015 hingga kini, lebih 1,000 pelajar dari universiti tempatan dan antarabangsa telah menggunakan RTP untuk penyelidikan, latihan serta projek tesis.

PUTRAJAYA: Reaktor penyelidikan nuklear negara, Reaktor Triga Puspati (RTP) melakar kejayaan dalam penyelidikan dan pendidikan sekali gus kekal sebagai pusat melahirkan serta mendidik saintis masa depan. Pengurus RTP Agensi Nuklear Malaysia Julia Abdul Karim berkata RTP yang beroperasi sejak 1982 memberikan sumbangan besar kepada masyarakat dengan menyokong pembangunan sains nuklear dan aplikasi praktikalnya.

"Direka bentuk sebagai reaktor pelbagai guna, RTP membolehkan Malaysia membina kepakaran besar dalam penyelidikan neutron, pengeluaran radioisotop dan pelbagai aplikasi merentas pelbagai sektor termasuk perubatan, pertanian dan industri. RTP telah memainkan peranan penting dalam pembinaan kapasiti manusia, melatih penyelidik, jurutera dan juruteknik yang kini menjadi penyumbang utama kepada komuniti saintifik Malaysia," katanya dalam satu kenyataan.

Beliau berkata sejak 2015 hingga kini, lebih 1,000 pelajar dari universiti tempatan dan antarabangsa telah menggunakan RTP untuk penyelidikan, latihan serta projek tesis. "Mereka memperoleh pengetahuan praktikal yang telah melengkapkan mereka dengan pengetahuan dan kemahiran dalam sains dan teknologi nuklear," katanya.

Sementara itu, Julia berkata RTP telah menyinari lebih 250,000 sampel daripada produk alam sekitar dan makanan kepada barangan pengguna untuk analisis. "Ini telah mengukuhkan kedudukan Malaysia dalam penyelidikan dan memastikan kajian kritikal sejajar dengan piawaian antarabangsa," katanya.

Menteri Sains, Teknologi dan Inovasi, Chang Lih Kang sebelum ini dilaporkan berkata kementerian sedang melaksanakan Kajian Teknikal Pelan Penggantian RTP. Chang berkata kajian berkenaan adalah sebahagian daripada strategi Dasar Teknologi Nuklear Negara 2030 (DTNN 2030), dan bertujuan memperkukuh pembangunan teknologi nuklear di Malaysia.

https://www.astroawani.com/berita-malaysia/reaktor-triga-puspati-di-malaysia-pacu-teknologi-nuklear-lahirkan-saintis-masa-depan-496568?amp=1

Triga Puspati Reactor drives nuclear technology in Malaysia, produces futurescientists

Malaysian Nuclear Agency (Nuklear Malaysia)

PUTRAJAYA: The country's sole nuclear research reactor, the Triga Puspati Reactor (RTP) has achieved numerous successes in research and education while continuing to be a centre to produce and educate future scientists.

RTP manager of the Malaysian Nuclear Agency, Dr Julia Abdul Karim said RTP which has been operating since 1982 has contributed enormously to society by supporting the development of nuclear science and its practical applications.

"Designed as a multi-purpose reactor, RTP enables Malaysia to build expertise in neutron research, radioisotope production and various applications across various sectors including medicine, agriculture and industry. RTP has played an important role in building human capacity, training researchers, engineers and technicians who are now major contributors to the Malaysian scientific community," she said in a statement.

She said since 2015 to date, more than 1,000 students from local and international universities have used RTP for research, training and thesis projects. "In the course, they acquired practical knowledge and skills in nuclear science and technology," she said.

Meanwhile, Julia said RTP has screened more than 250,000 samples from environmental and food products to consumer goods for analysis. "This has strengthened Malaysia's position in research and ensured that critical studies are in line with international standards," she said.

Minister of Science, Technology and Innovation, Chang Lih Kang was earlier reported to have said that his ministry is carrying out a technical study on the RTP replacement plan. According to Chang, the study is part of the National Nuclear Technology Policy 2030 (DTNN 2030) strategy, and aims to strengthen the development of nuclear technology in Malaysia.

https://www.sarawaktribune.com/triga-puspati-reactor-drives-nuclear-technology-in-malaysia-produces-future-scientists/

PUTRAJAYA: The country's sole nuclear research reactor – the Triga Puspati Reactor (RTP) – has achieved numerous successes in research and education while continuing to produce future scientists.

RTP manager of the Malaysian Nuclear Agency, Dr Julia Abdul Karim, said RTP, which has been operating since 1982, has contributed enormously to society by supporting the development of nuclear science and its practical applications. "Designed as a multi-purpose reactor, RTP enables Malaysia to build expertise in neutron research, radioisotope production and various applications across various sectors including medicine, agriculture and industry. RTP has played an important role in building human capacity, training researchers, engineers and technicians who are now major contributors to the Malaysian scientific community," she said in a statement, Bernama reported.

Julia said from 2015 until now, more than 1,000 students from local and international universities have utilised RTP for research, training and thesis projects."In the course, they acquired practical knowledge and skills in nuclear science and technology," she said.

She said since 2015 to date, more than 1,000 students from local and international universities have used RTP for research, training and thesis projects. Julia said RTP has also screened more than 250,000 samples from environmental and food products to consumer goods for the purpose of analysis. "This has strengthened Malaysia's position in research and ensured that critical studies are in line with international standards," she said.

Science, Technology and Innovation Minister Chang Lih Kang was earlier reported to have said that his ministry is carrying out a technical study on the RTP replacement plan. According to the minister, the study is part of the National Nuclear Technology Policy 2030 strategy. It also aims to strengthen the development of nuclear technology in Malaysia, he said.

https://www.thestar.com.my/news/nation/2024/11/17/triga-puspati-reactor-drives-nuclear-research

Nuklear Malaysia rancang wujudkan badan sampaikan maklumat terus kepada PM

Menerusi DTNN 2030, Nuklear Malaysia bercadang untuk menubuhkan satu pusat pengurusan sisa bahan nuklear radioaktif yang lebih teratur dan sistematik.

KUALA LUMPUR: Agensi Nuklear Malaysia (Nuklear Malaysia) merancang untuk mewujudkan satu badan yang berperanan menyampaikan maklumat secara terus berkaitan teknologi nuklear kepada Perdana Menteri menerusi Dasar Teknologi Nuklear Negara 2030 (DTNN 2030).

Timbalan Ketua Pengarah Program Penyelidikan dan Pembangunan Teknologi Nuklear Malaysia Dr. Muhammad Rawi Mohamed Zin berkata badan itu juga bertindak sebagai 'suara' untuk disampaikan ke peringkat Perdana Menteri supaya teknologi tersebut tidak ketinggalan ke belakang dan tidak dipandang serong di negara ini.

"Kalau tiada satu pasukan pakar yang mampu memberi pendapat kepada pemimpin-pemimpin kita, mungkin maklumat tersebut tidak sampai," katanya ketika menjadi tetamu program Ruang Bicara bagi topik "Dua Tahun Kerajaan MADANI (2TM): Merakyatkan Teknologi Nuklear" terbitan Bernama TV, malam tadi.

Beliau berkata menerusi DTNN 2030 juga, Nuklear Malaysia bercadang untuk menubuhkan satu pusat pengurusan sisa bahan nuklear radioaktif yang lebih teratur dan sistematik. "Negara semakin maju dengan industri dan sebagainya, penggunaan teknologi dengan bahan-bahan melibatkan nuklear radioaktif semakin banyak, maka kita nak ada tempat dijadikan pusat untuk pengurusan sisa (melibatkan bahan nuklear radioaktif) yang lebih teratur untuk memastikan teknologi nuklear ini lebih selamat digunakan di Malaysia," katanya.

Muhammad Rawi berkata kedua-dua perancangan dalam DTTN 2030 itu penting kerana teknologi nuklear memainkan peranan penting dalam pelbagai sektor sosioekonomi negara terutamanya sektor perindustrian, kesihatan, makanan dan pertanian, selain pengurusan air serta perlindungan alam sekitar.

DTNN 2030 yang dilancarkan pada 20 Sept 2023 merupakan inisiatif strategik pertama kerajaan mengarusperdanakan penggunaan teknologi nuklear secara aman ke arah meningkatkan daya saing industri, memperkukuh kesejahteraan rakyat dan memulihara sumber asli serta alam sekitar.

Kementerian Sains, Teknologi dan Inovasi (MOSTI) bertindak sebagai kementerian peneraju pelaksanaan dasar berkenaan dengan merangka pembangunan berkaitan sains dan teknologi nuklear manakala Nuklear Malaysia sebagai agensi penyelaras untuk platform kerjasama kebangsaan termasuk projek strategik berkaitan teknologi nuklear.

Nuklear Malaysia juga diamanahkan sebagai peneraju bagi Jawatankuasa Teknikal Teknologi Nuklear Kebangsaan, dengan keahlian pakar teknikal daripada agensi kerajaan berkaitan, institusi negeri, pengawal selia, sektor swasta dan ahli akademik yang berperanan menyelaras, meneliti serta menasihati aspek teknikal berkaitan teknologi nuklear dalam pelaksanaan DTNN 2030.

https://www.astroawani.com/berita-malaysia/nuklear-malaysia-rancang-wujudkan-badan-sampaikan-maklumat-terus-kepada-pm-497559

Agensi Nuklear Malaysia (Nuklear Malaysia) telah menerima kunJunegan dan lawatan daripada Yang i- Pertua Dewan Rakyat

29 November 2024, Selangor – Agensi Nuklear Malaysia (Nuklear Malaysia) telah menerima kunJunegan dan lawatan daripada YB Tan Sri Dato' (Dr.) Johari bin Abdul, Yang di- Pertua Dewan Rakyat serta barisan delegasi daripada Parlimen Malaysia.

Yang di- Pertua Dewan Rakyat serta delegasi telah disambut oleh YBrs. Dr. Muhammad Rawi bin Mohamed Zin, Timbalan Ketua Pengarah Program Penyelidikan & Pembangunan Teknologi, Agensi Nuklear Malaysia serta barisan pengurusan Nuklear Malaysia.

Antara tujuan lawatan kerja hari ini diadakan adalah untuk mendapatkan maklumat lanjut berkaitan penyelidikan dan pembangunan sains dan teknologi nuklear di Malaysia. Pada sesi lawatan ini juga, para delegasi berkesempatan untuk melawat ke fasiliti Reaktor Triga PUSPATI (RTP) yang merupakan satu-satunya reaktor penyelidikan Nuklear Negara yang beroperasi sejak 1982. RTP ini telah banyak memberikan sumbangan besar kepada masyarakat dengan menyokong pembangunan sains nuklear dan aplikasi praktikalnya.

Turut hadir YBrs. Puan Aidawati binti Misdar, Setiausaha Bahagian Teknologi Strategik & Aplikasi S&T (TSA), Kementerian Sains, Teknologi dan Inovasi (MOSTI), YBrs. Ts. Dr. Ishak bin Mansor, Timbalan Ketua Pengarah, Program Perkhidmatan Teknikal, Agensi Nuklear Malaysia, pegawai-pegawai MOSTI serta barisan pengarah-pengarah Nuklear Malaysia.

https://www.mosti.gov.my/berita/agensi-nuklear-malaysia-nuklear-malaysia-telah-menerima-kunJunegan-dan-lawatan-daripada-yang-di-pertua-dewan-rakyat/

NEW STRAITS TIMES

Malaysia to share nuclear expertise, experience during Asean chairmanship

21 December 2024

Dr. Rosli Darmawan
Director-General
Malaysian Nuclear Agency
(Nuklear Malaysia)

"The agency is prepared to share expertise in several key areas, including medicine and healthcare, food and agriculture, as well as the manufacturing of devices and equipment".

PUTRAJAYA: Malaysia aims to share its expertise, experience and best practices in the development, utilisation, and transfer of nuclear technology with Asean countries during its Asean Chairmanship in 2025.

Malaysian Nuclear Agency (Nuklear Malaysia) Director-General Dr. Rosli Darmawan said the agency is prepared to share expertise in several key areas, including medicine and healthcare, food and agriculture, as well as the manufacturing of devices and equipment.

"Nuklear Malaysia is proud to contribute and participate in the Asean Chairmanship 2025. We wish to introduce the expertise and infrastructure we possess in the field of nuclear technology to all other Asean member countries," he told Bernama.

Rosli said Nuklear Malaysia is also willing to share its experience in developing the National Nuclear Technology Policy 2030 (DTNN 2030).

Rosli said the implementation of DTNN 2030 is expected to contribute RM2.403 billion to the national economy by 2030, with an annual growth of 10 per cent in the export value of local nuclear technology-related products. "The launch of DTNN 2030 on Sept 20, 2023, marked a significant milestone, particularly after 50 years of Nuklear Malaysia's establishment," he said.

Nuklear Malaysia, he added, will host the 8th Annual Meeting of the Asean Network on Nuclear Power Safety Research (NPSR) in line with the rotational policy among Asean countries.

"This will be Malaysia's first time hosting the meeting since its inception in 2017. The annual meeting will discuss achievements and the implementation of activities planned under Asean NPSR, as well as address the needs of member states and plan annual activities," he said. As part of the meeting programme, ASEAN NPSR participants will visit the TRIGA PUSPATI Reactor (RTP), the only nuclear research reactor in Malaysia, which has been operating since 1982.

Rosli said Nuklear Malaysia has been recognised as a Regional Training Centre (RTC) and is ready to share training experience and resources with Asean countries. Additionally, the agency has been recognised as an International Collaborative Centre (ICC) by the International Atomic Energy Agency (IAEA) for the 2023-2027 period. This recognition encompasses development, research, and training in nuclear science applications.

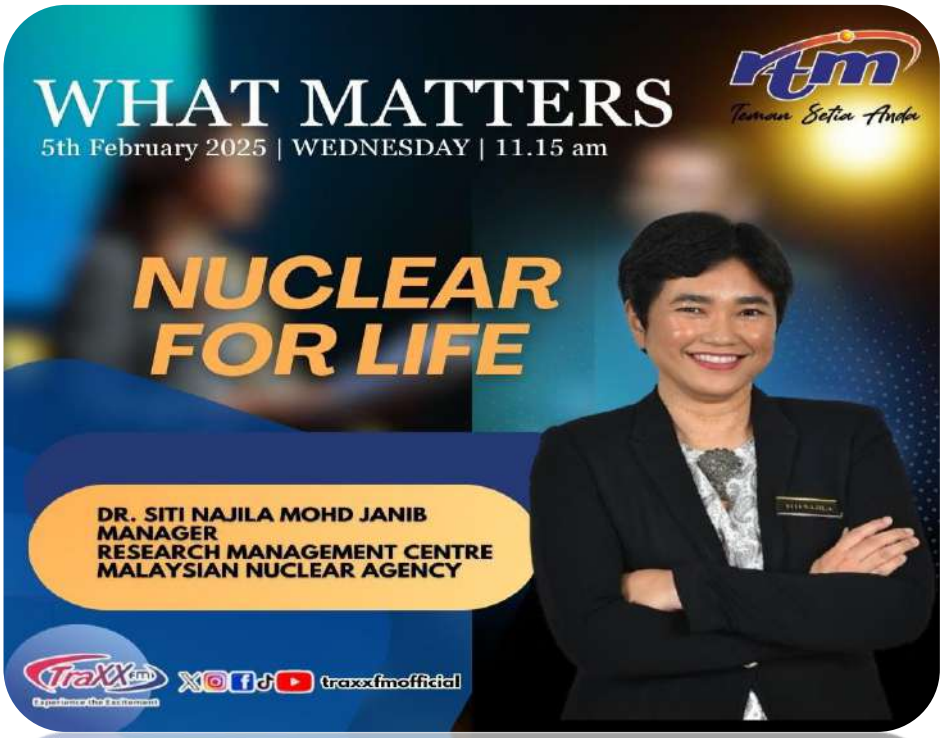
"With this recognition, Nuklear Malaysia is committed to continuing to share resources, knowledge, and expertise with Asean countries that are also IAEA member states," he explained. Malaysia will officially assume the Asean Chairmanship on Jan 1, next year, under the theme "Inclusivity and Sustainability," reflecting its aspiration to foster a unified and prosperous Asean.

https://www.nst.com.my/news/nation/2024/12/1151223/malaysia-share-nuclear-expertise-experience-during-asean-chairmanship

Radio & Television

BIL	MEDIA	MONTHLY COVERAGE												TOTAL
		JAN	FEB	MAR	APR	MAY	JUNE	JUL	AUG	SEPT	OCT	NOV	DEC	
1	RADIO (Electronic Media)		2			1	1	2			2	1	1	10
2	TELEVISION (Electronic Media)			1							1	2		4
	TOTAL		2	1		1	1	2			3	3	1	14

DATE	MEDIA	TITLE	GUEST
5 February 2024	Traxx FM	What matters: Nuclear for life	Dr. Siti Najila Mohd Janib
21 February 2024	Johor FM	*Mengarus perdana teknologi nuklear*	YBrs. Dr. Nor Pa'iza bin Mohamad Hasan
30 May 2024	KEDAHfm	*Nuklear untuk rakyat*	YBrs. Ts. Dr Ishak bin Mansor
11 June 2024	KEDAHfm	*Kegunaan aman nuklear*	YBrs. Dr. Shukri bin Mohd
23 July 2024	AiFM	*Merakyatkan teknologi nuklear*	En. Raymond Yapp Tze Loong
26 July 2024	Minnal FM	*Merakyatkan teknologi nuklear*	YBrs.Ts. Shamesh Raj a/l Parthasarathy
10 October 2024	BERNAMA Radio	*Mengarusperdanakan teknologi nuklear*	YBrs. Dr. Rosli bin Darmawan
29 October 2024	BERNAMA Radio	*Teknologi nuklear dalam kelestarian alam sekitar*	YBrs. Dr. Rahman bin Yaccup
6 November 2024	NASIONALfm	*Teknologi nuklear dalam pertanian dan makanan*	YBrs. Dr. Zaiton binti Ahmad
19 December 2024	SELANGORfm	*Nuklear untuk rakyat*	YBrs. Ts. Dr. Mohd. Rodzi bin Ali
19 December 2024	SELANGORfm	*Nuklear untuk rakyat*	YBrs. Ts. Dr. Mohd. Rodzi bin Ali
8 March 2024	RTM TV1	*Masa depan teknologi nuklear di ipt*	YBrs. Dr. Muhammad Rawi bin Mohamed Zin
15 October 2024	BERNAMA TV	*Nuklear untuk rakyat*	YBrs. Dr. Rosli bin Darmawan
22 November 2024	BERNAMA TV	*Menginsankan dan merakyatkan teknologi nuklear*	YBrs. Dr. Muhammad Rawi bin Mohamed Zin
27 November 2024	BERNAMA TV	*Teknologi nuklear untuk kegunaan aman*	YBrs. Dr. Hasni binti Hasan



https://rtmklik.rtm.gov.my/radio/nasional/traxx-fm

JOHOR DI SANA SINI (JDSS)

https://www.facebook.com/johorfm/videos/johor-di-sana-sini-jdss/609772474665152/

https://www.facebook.com/RadioMalaysiaKedahfm/videos/i-tanyakedahfm/1132471457988614/

https://rtmklik.rtm.gov.my/radio/negeri/kedah-fm

https://rtmklik.rtm.gov.my/radio/nasional/ai-fm
https://www.facebook.com/aifm.malaysia

https://www.facebook.com/RTMMINNALfm
https://rtmklik.rtm.gov.my/radio/nasional/minnal-fm

https://www.facebook.com/share/p/15KVbzQ9nW/

https://www.facebook.com/bernamaradio/videos/jendela-fikir/1094275012295329/

https://www.facebook.com/NASIONALfmRTM/videos/alfa-102/1596843147919946/

https://www.facebook.com/share/v/1BP46ozVz4/

https://t.co/etQmLj1Lyb

https://www.facebook.com/AgensiNuklearMalaysia/posts/pfbid0Ra1Nv1Usq8ydY1AEKgz3mFDAW66xHtrd3z5W8s4pr3Kg2CGoQ1vNthDV2QGdVSVLl

https://www.facebook.com/AgensiNuklearMalaysia/posts/pfbid02uP9arPmjMAhtCo4iAj6h9UuqtUvx8j3meEHF5Bw5BEAqdji2C64Y4RrLpzk4FgKjl

https://www.facebook.com/AgensiNuklearMalaysia/posts/pfbid0U3qXWA7ALMh1pTZqNskZ31xZng4UVswrS357vzMB3gDoUJybLkaRJeX4FG2nbBDsl

Astro Awani
BERNAMA.com
BERNAMA TV/Radio
Berita Harian
Facebook
Free Malaysia Today (FMT)
Harian Metro
Kosmo
Malay Mail
Malaysia Tribune
mosti.gov.my
New Straits Times
Nuclear Business Platform
RTM
Sarawak Tribune
Siakap Keli
Sinar Harian
selangorjournal.my
themalaysianreserve.com
The Star
thesun.my
tvsarawak.my (TVS)
OpenGov Asia
Utusan Malaysia
AiFM
JOHORfm
KEDAHfm
Minnal FM
NASIONALfm
PAHANGfm
SELANGORfm
Traxx FM
RTM TV1

KEMENTERIAN SAINS, TEKNOLOGI DAN INOVASI
MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION

NUKLEAR MALAYSIA

Agensi Nuklear Malaysia
Bangi, 43000 Kajang, Selangor Darul Ehsan
www.nuclearmalaysia.gov.my