KERATAN AKHBAR-AKHBAR TEMPATAN
TARIKH: 22 NOVEMBER 2014 (SABTU)

Bil	Tajuk	Akhbar
1.	SIRIM QAS perkenal label baharu elak dipalsukan	Utusan Malaysia
2.	Strategi pembangunan SIRIM 2015	Utusan Malaysia
3.	SIRIM perkenal label baharu	Harian Metro
4.	SIRIM wants to be your insdutry partner	New Straits Times
5.	SIRIM Rebranded	New Straits Times
6.	SIRIM Quality Award 2014	New Straits Times
7.	SIRIM Checks-in with new labels	New Straits Times
8.	The entry of product	New Straits Times
9.	Newest food safety certification	New Straits Times
10.	Eco Design to the fore	New Straits Times
11.	Measure of success	New Straits Times
12.	Bright future for bio energy	New Straits Times
13.	Perfect finish	New Straits Times
14.	Cyberview bantu pacu ekonomi bumiputera	Berita Harian
15.	Bioteknologi tawar 83,000 pekerjaan	Utusan Malaysia
16.	BIOGAS sawit	Berita Harian
17.	Ribut petir di perairan Perlis, Kedah, Johor barat berterusan sehingga malam ini	BERNAMA
18.	Gempa bumi kuat berlaku di Utara Laut Maluku	BERNAMA

KERATAN AKHBAR
UTUSAN MALAYSIA (DALAM NEGERI) : MUKA SURAT 3
TARIKH : 22 NOVEMBER 2014 (SABTU)

ABU BAKAR MOHAMAD DIAH (dua dari kiri) menyampaikan sijil penghargaan Skim Pensijilan Jejak Karbon kepada wakil CSL Technologies (M) Sdn. Bhd. semasa Majlis SIRIM - Industri 2014 di Petaling Jaya, semalam. Turut kelihatan, Jamaliah Kamis (kanan) dan Zainal Abidin Mohd Yusof (kiri). - UTUSAN/RIDUAN RIZAL AHMAD

SIRIM QAS perkenal label baharu elak dipalsukan

PETALING JAYA 21 Nov. - Anak syarikat SIRIM Berhad, SIRIM QAS International Sdn. Bhd. (SIRIM QAS International) akan menggantikan label lama untuk barangan terkawal bagi menangani isu label palsu mulai 1 Januari 2015.

Pengerusi SIRIM Berhad, Datuk Jamaliah Kamis berkata, label baharu tersebut akan dilengkapi dengan ciri-ciri keselamatan tambahan yang dapat membantu meningkatkan keyakinan pelanggan bahawa produk terkawal adalah selamat.

Katanya, bagaimanapun label baharu itu tidak meliputi barangan telekomunikasi dan multimedia seperti telefon bimbit serta komputer.

"Pengenalan label ini adalah selaras dengan usaha memastikan barangan pengguna seperti produk elektrik, topi dan tali pinggang keledar serta peralatan perlindungan kebakaran yang dikawal oleh Suruhanjaya Tenaga, Jabatan Pengangkutan Jalan (JPJ) serta Jabatan Bomba dan Penyelamat.

"Menariknya, label baharu itu yang dilengkapi dengan ciri-ciri keselamatan menggunakan dakwat termokromik dan reka bentuk yang baharu," katanya berucap dalam majlis SIRIM-Industri 2014 di sini malam ini.

> **Pengenalan label ini adalah selaras dengan usaha memastikan barangan pengguna seperti produk elektrik, topi dan tali pinggang keledar serta peralatan perlindungan kebakaran yang dikawal oleh Suruhanjaya Tenaga, Jabatan Pengangkutan Jalan (JPJ) serta Jabatan Bomba dan Penyelamat."**
>
> **JAMALIAH KAMIS**
> **Pengerusi SIRIM Berhad**

Majlis yang disempurnakan oleh Timbalan Menteri Sains, Teknologi dan Inovasi, Datuk Dr. Abu Bakar Mohamad Diah itu turut dihadiri Ketua Eksekutif SIRIM Berhad, Datuk Dr. Zainal Abidin Mohd. Yusof dan Pengarah Urusan SIRIM QAS International, Khalidah Mustafa.

Pada majlis tersebut, Abu Bakar turut menyampaikan sijil penghargaan kepada lapan syarikat daripada sektor pembinaan dan bahan binaan yang telah berdaftar di bawah program perintis Skim Pensijilan Jejak Karbon.

Mengulas lanjut, Jamaliah berkata, pihaknya juga sedang melakukan semakan semula terhadap dua skim pensijilan sistem pengurusan iaitu ISO 9001 dan ISO 14001.

Katanya, pensijilan tersebut merupakan dua sistem pengurusan yang paling popular antara semua skim pensijilan sistem pengurusan yang ditawarkan SIRIM.

Tambah beliau, SIRIM menjangkakan kedua-dua pensijilan berkenaan diterbitkan semula pada akhir tahun depan, justeru organisasi yang telah mendapat pensijilan itu perlu peka dengan perubahan tersebut.

KERATAN AKHBAR
UTUSAN MALAYSIA (DALAM NEGERI) : MUKA SURAT 18
TARIKH : 22 NOVEMBER 2014 (SABTU)

Strategi pembangunan SIRIM 2015

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■ SHAH ALAM 21 NOV.

PELAN Transformasi lima tahun SIRIM Berhad (SIRIM) masuk tahun ketiga pelaksanaannya tahun hadapan. Selepas pelan tersebut dilancarkan pada 2013, kedudukan agensi di bawah Kementerian Sains Teknologi dan Inovasi (MOSTI) itu kini makin kukuh dengan hala tujunya juga semakin fokus.

Pelan transformasi SIRIM itu dilihat selaras dengan hasrat kerajaan di dalam Bajet 2015 yang mengumumkan bahawa agensi tersebut akan dijenama semula bagi membolehkan pelaksanaan penembusan teknologi, peningkatan program dan pengauditan teknologi khas kepada sektor perusahaan kecil dan sederhana (PKS).

Pada tahun ini menyaksikan SIRIM telah memperkenalkan beberapa produk dan perkhidmatan untuk dikomersialkan. Antaranya, BioNG iaitu gas asli semula jadi daripada POME iaitu bahan buangan kilang kelapa sawit dan Innocraft, sebuah pusat teknologi kraf di Melaka.

Teknologi lain yang dibangunkan oleh SIRIM untuk dikomersialkan ialah TCG8 iaitu mesin pemotong dan pengisar bagi pemotongan persis; Solaerator, sistem pengudaraan kolam menggunakan kuasa solar dan teknologi bio-komposit menggunakan bahan serat semula jadi seperti sekam padi untuk menghasilkan perabot dan floor deck.

Mengulas lanjut pelan pembangunan agensi itu pada 2015, Presiden dan Ketua Eksekutif SIRIM, Datuk Dr. Zainal Abidin Mohd. Yusof berkata, SIRIM telah mengariskan tiga strategi utama dengan fokus kepada inovasi, perkembangan perniagaan dan produktiviti.

Beliau berkata, dalam bidang inovasi, SIRIM akan memperkenalkan SIRIM Innovation Model, di mana kerajaan, industri dan rakan strategik SIRIM akan bekerjasama untuk menyediakan perkhidmatan inovasi melalui pembangunan penyelidikan (R&D), penghasilan produk dan akses pasaran kepada syarikat-syarikat bersaiz mikro, PKS dan syarikat multinasional (MNC).


ZAINAL ABIDIN MOHD. YUSOF

> Di bawah model tersebut, industri akan dipupuk supaya terus berinovasi dan berkembang, sekali gus meningkatkan tahap produktiviti serta pendapatan mereka."
>
> ZAINAL ABIDIN MOHD. YUSOF
> Presiden dan Ketua Eksekutif SIRIM

"Di bawah model tersebut, industri akan dipupuk supaya terus berinovasi dan berkembang, sekali gus meningkatkan tahap produktiviti serta pendapatan mereka," katanya dalam satu temubual di pejabatnya di sini baru-baru ini.

Zainal Abidin berkata, SIRIM juga akan terus memberi tumpuan kepada tiga bidang utama sedia ada iaitu tenaga dan alam sekitar, teknologi perubatan serta loji dan mesin melalui penghasilan teknologi dan produk baharu.

Mengenai perkembangan perniagaan pula, beliau berkata, SIRIM pada masa ini mempunyai empat anak syarikat SIRIM iaitu SIRIM QAS International, SIRIM Training Services, SIRIM Standards Technology dan National Precision Tooling.

Selain itu jelas beliau, SIRIM juga akan menubuhkan anak syarikat baharu iaitu SIRIM Measurement Technology yang merupakan usahasama antara SIRIM dengan Dreamcatcher Consulting.

"Syarikat ini akan menyediakan perkhidmatan penyelesaian teknologi kepada pelanggan seperti analisis kimia, peralatan pengujian sains hayat dan telekomunikasi, penentukuran, pengukuran dan pembaikan bagi frekuensi radio," jelasnya.

Tambah Zainal Abidin, bagi 2015, SIRIM juga akan memberi fokus kepada pengkomersialan teknologi yang dihasilkannya seperti pembuatan tangki gas asli mampat (CNG), Slow Release Fertilizer, Silinder Komposit Gas Petroleum Cecair (LPG) dan Osteopaste iaitu bahan tulang gantian berbentuk pes.

Mengulas fokus produktiviti pula, Zainal Abidin berkata, perancangan sedang dibuat bagi menjadikan SIRIM sebuah syarikat pemegangan (Holding Company), yang akan mempunyai unit-unit perniagaan yang lebih bebas dan berautonomi, mengoptimumkan perancangan cukai dan pengasingan risiko, lebih cekap melalui perkhidmatan yang dikongsi seperti kewangan, sumber manusia dan teknologi maklumat (IT).


SIRIM bekerjasama dengan kerajaan dan industri dalam menyediakan perkhidmatan inovasi melalui pembangunan penyelidikan.

SIRIM kenal pasti 23 teknologi untuk dikomersialkan


FRACTURE fixation plate antara teknologi perubatan dibangunkan oleh SIRIM.

SHAH ALAM 21 Nov. - SIRIM Berhad (SIRIM) telah mengenal pasti 23 teknologi untuk dikomersialkan dalam tempoh tiga tahun bermula tahun ini.

Kesemua teknologi itu dibahagikan kepada tiga bidang yang khusus bersesuaian dengan keperluan pasaran iaitu tenaga dan alam sekitar, teknologi perubatan serta loji dan mesin.

Menurut Presiden dan Ketua Eksekutif SIRIM, Datuk Dr. Zainal Abidin Mohd. Yusof, SIRIM telah membangunkan satu pelan atau roadmap bagi perancangan program pengkomersialannya, selaras dengan Tahun Pengkomersialan Kementerian Sains Teknologi dan Inovasi (MOSTI), di samping memantau pengkomersialan teknologi agar berjalan lancar dan proses pemindahan kepada industri pula dapat dilaksanakan dengan lebih terperinci.


GRANUMAS antara teknologi SIRIM yang dipasarkan syarikat tempatan.

Beliau berkata, pelan tersebut juga akan turut memudahkan pihak industri untuk membuat perancangan dan mengetahui bila teknologi berkaitan telah sedia untuk dikomersialkan.

Katanya, SIRIM telah membantu hampir semua industri dalam aspek teknologi dengan fokus sektor perusahaan kecil dan sederhana (PKS) kerana kebanyakan syarikat terbabit tidak mempunyai kepakaran dalam membangunkan teknologi masing-masing.

"Antara produk inovasi yang berada di dalam roadmap ini adalah bateri LIPOS berasaskan teknologi lithium ion phosphate, projek Loji Pemproses Biogas dan tangki komposit CNG, Craniofacial dan Implan Titanium, Sistem Kitaran Air Solaerator dan Produk Hijau Bio Komposit," katanya dalam satu temubual di pejabatnya di sini, baru-baru ini.

Mengulas lanjut, Zainal Abidin berkata, model pengkomersialan SIRIM sebelum ini lebih kepada pelesenan teknologi kepada industri dan sebaik sahaja teknologi dipindahkan kepada syarikat tempatan pembangunan teknologi dari SIRIM bagi produk tersebut akan terhenti setakat ini sahaja.

Bagaimanapun jelas beliau, melalui pelan pengkomersialan SIRIM yang baharu ini, syarikat tempatan digalakkan untuk terlibat dalam kaedah usahasama.

"Kaedah ini pertama sekali membolehkan teknologi yang dibangunkan boleh terus dikembangkan mengikut keperluan dan kesesuaian semasa dan kedua, membolehkan syarikat tempatan lebih serius dalam penguasaan teknologi ini kerana mereka mempunyai penglibatan secara langsung yang seterusnya memberi manfaat jangka panjang kepada mereka," katanya.

Beberapa teknologi SIRIM yang telahpun berjaya di pasaran adalah GranuMAS yang dilesenkan kepada Granulab yang mempunyai kilang pengeluaran di Kota Kemuning, Shah Alam; XanzWhite dilesenkan kepada Sireh Mas Marketing Sdn. Bhd. di mana SIRIM telah membantu syarikat ini membangunkan kilang bertaraf GMP melalui latihan dan khidmat perundingan yang dikehendaki oleh SIRIM.

KERATAN AKHBAR
HARIAN METRO (SETEMPAT) : MUKA SURAT 50
TARIKH : 22 NOVEMBER 2014 (SABTU)

SIRIM perkenal label baru

Petaling Jaya: Berkuat kuasa Januari depan, anak syarikat SIRIM Berhad, SIRIM QAS International Sdn Bhd akan memperkenalkan reka bentuk label baru bagi Skim Pensijilan Barangan bercirikan keselamatan tambahan bagi menangani isu label palsu yang terdapat di pasaran.

Pengerusi SIRIM Berhad, Datuk Jamaliah Kamis berkata pengenalan label itu adalah selaras dengan usaha memastikan tahap keselamatan barangan seperti elektrikal, topi keledar, tali pinggang keledar dan peralatan perlindungan kebakaran menggunakan hanya label sah dari SIRIM sebelum dikeluarkan kepada pengguna.

"Label baru itu dilengkapi ciri-ciri keselamatan yang dipertingkatkan antaranya penggunaan dakwat termokromik dan reka bentuk baru adalah terpakai untuk semua barangan terkawal bagi membantu meningkatkan keyakinan pengguna bahawa produk terkawal produk yang mempunyai label SIRIM adalah selamat untuk digunakan.

"Ia juga bagi memastikan semua barangan yang dikawal Suruhanjaya Tenaga, Jabatan Pengangkutan Jalan serta Jabatan Bomba dan Penyelamat Malaysia melalui pengujian dan menggunakan hanya label sah dari SIRIM.

"Bagaimanapun, bagi alat telekomunikasi dan multimedia akan kekal menggunakan label sedia ada," katanya pada Majlis SIRIM Industri 2014 di sini, malam tadi.

Turut hadir, Timbalan Menteri Sains, Teknologi dan Inovasi (MOSTI) Datuk Dr Abu Bakar Mohamad Diah serta Presiden dan Ketua Eksekutif SIRIM Berhad Datuk Dr Zainal Abidin Mohd Yusof.

KERATAN AKHBAR
NEW STRAITS TIMES (SPECIAL)
TARIKH : 22 NOVEMBER 2014 (SABTU)

SIRIM WANTS TO BE YOUR INDUSTRY PARTNER

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SIRIM Berhad, the country's premier industrial research and development organisation, wants to enhance its role to become an industry partner.

Its president and chief executive officer, Dato' Dr Zainal Abidin Mohd Yusof, says the partnership is especially vital for small and medium enterprises (SMEs) which are lacking in research and development capabilities.

"Big multinational corporations (MNCs) and government-linked companies (GLCs) have their own research and development (R&D) units.

"But the same cannot be said of SMEs which have to rely on external R&D organisations such as SIRIM. We want to fill this void. We want to be your industry partner, says Zainal."

SIRIM, an agency under the Ministry of Science, Technology and Innovation, known for its quality and standards services, also carries out industrial research.

"Industry players are aware of our reputation in quality testing and standards certification. But not many know about our industrial research division and industrial process services which can help them enhance their services through research and development.

"We have a strong set-up in research and development, technology, innovation, design and engineering, standards and quality and technology transfer. And we want businesses to know that there is a lot more that we can offer. We want to be the industry's partner."

Zainal says the fact that 98 per cent of industries in Malaysia are SMEs reflects how important it is for it to cooperate and work together with SIRIM, with the former leveraging and harnessing the agency's strengths and capabilities.

"What we want to do is to provide the edge in research and development to all SMEs in Malaysia, including micro enterprises and especially Bumiputera entrepreneurs and start-up companies.

"We can help via several programmes. We also want to focus on the bigger SMEs which have their own factories and automation where it can introduce a lot more of automation and mechanisation and reduce dependency on foreign workers."

SIRIM's focus now is centred on three sectors: green energy and environment, plant and machinery, and medical technology.

For green energy and environment, Zainal says the goal is to assist companies to develop high technology green products such as industry concepts and innovation in the palm oil sector where biogas produced from palm oil effluent is converted into methane.

"We already have a project with Sime Darby which is similar to the natural gas vehicle (NGV) project. One day, taxis will be lining up to fill up their gas tanks at palm oil plantations."

In the biodiesal industry, SIRIM for example can provide the technology to firms to supply power and renewable technology.

With automation and mechanisation, he says industries can reduce their dependency on foreign workers, now mostly sourced from Vietnam, Myanmar, Indonesia and Bangladesh.

With more automation, productivity will inevitably increase.

"For example, by adopting

➔ See page 3

SIRIM REBRANDED

SIRIM Berhad is rebranding itself.

And one of the key planks of the invigoration exercise, says its president and chief executive officer Dato' Dr Zainal Abidin Mohd Yusof, is providing local small and medium enterprises (SMEs) the much needed help in research and industrial process.

The rebranding for SIRIM is even included in Budget 2015, with Prime Minister Datuk Seri Najib Razak stressing how vital it was for the agency to not only be innovative but also improve its services for SMEs.

"A rebranded SIRIM will provide services to SMEs to improve the commercialisation of their technology findings.

"The government has asked SIRIM to reposition itself for SMEs, and among the initiatives taken by us is to readjust our industrial innovation model," says Zainal.

SIRIM is ever willing to help industries beef up their technological prowess and the good news is that it has the capabilities to undertake the task.

"Together with the government, we will expand our subsidiaries, beef up SIRIM Training and also reinvigorate Sirim QAS International. The rebranding will also strengthen our financial capability and sustainability.

"We want to be a partner to industries and provide them with the technologies. They already know us because of the mandatory testing that they have to do, otherwise their products, without the SIRIM certification, will not make it into the market."

Zainal Abidin says SIRIM encourages industry players to voluntarily carry out improvement to their technology processes.

Under the rebranding exercise, SIRIM industrial research programme will be renamed and will offer industrial research services. It will be a separate entity and a new subsidiary of SIRIM Bhd.

The set up includes SIRIM QAS which is responsible for certification, testing and inspection; SIRIM Training (training); SIRIM Standard Technology (calibration services); SIRIM Measurement (calibration and measurement services); and SIRIM Industrial Research (research and development for SMEs).

Zainal says it is joining forces with Malaysia Debt Ventures, where companies can get RM300 million soft loans to improve on their technology which can result in higher productivity.

He points out that SMEs must not shy away from collaborating with SIRIM.

At the moment, the number of companies voluntarily seeking the agency's help in carrying out R&D actitivities is still low.

"We want the 100,000 companies, together with SME Corp, to come forward. We want to be a technology provider, build entrepreneurship and also enhance their technology uptake," he says.

To help push the country's innovation drive, Zainal says SIRIM has introduced a business opportunity programme for its more than 1,000 researchers and scientists.

The agency is allowing its scientists to form their own companies while still under its employment and work on innovations.

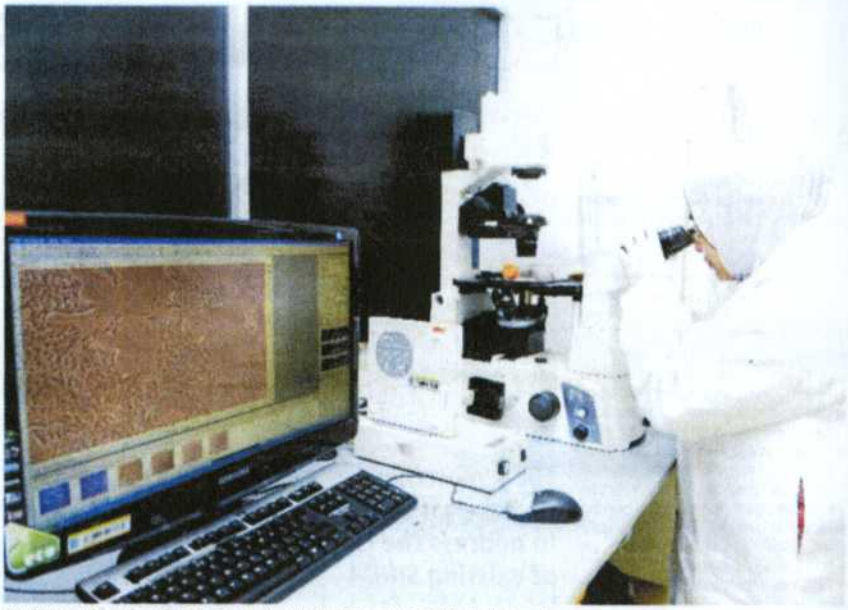
"It is a spin off concept, a model practiced in Taiwan and Italy. We believe that when there is a commitment, the staff will be more inspired to work on their ideas. Later, they can start their own business and pay royalty."

In essence, the scientists can make use of SIRIM facilities for their entrepreneurship ventures, besides being provided with ample opportunities to commercialise them later.

They can either stay with SIRIM or leave to run their own companies but the technology belongs to SIRIM.

KERATAN AKHBAR
NEW STRAITS TIMES (SPECIAL)
TARIKH : 22 NOVEMBER 2014 (SABTU)

Automation and mechanisation will help ***reduce dependency*** *on foreign workers.*



SIRIM provides the ***edge*** *in research and development to SMEs in Malaysia.*

→ *From page 2*

SIRIM's industrial process, an entrepreneur who now employs 10 workers for his tapioca fritters business can trim his workforce to only just two."

Zainal says SIRIM is also paying greater attention to medical technology as the new technology in medical devices can assist industries boost their productivity and bolster value-added services.

It is considered a new frontier in Malaysia and provides a new opportunity for industries in Malaysia, what more with SIRIM's with Germany's top R&D organisation, the Fraunhofer Institute. It is reputed as one of the world's biggest and most successful research and development institutes with 23,000 workers, including scientists and researchers.

"It is one of the most successful R&D institutions. We will partner them, and then we will team up with the industries."

Zainal says SMEs need world-class and competitive technologies capable of penetrating the world market. Teaming up with local universities as well as looking for more in-depth solutions will take them another notch higher.

He says the many successful industries such as in Germany, Taiwan, China and South Korea have been aided by inroads made in R&D.

Local SMEs, it has been noted, are operating more for survival, which explains the scant attention given to R&D.

"For example, they will be satisfied making a turnover of RM60 million, and don't really care about making progress in R&D."

SIRIM QUALITY AWARD 2014

AS an annual signature event of SIRIM and continuing on the success of SIRIM Quality Award 2013, this year's event culminated with top performers given recognition for their efforts and excellence.

The SIRIM Quality Award 2014, open to all clients of the agency, aims to give a formal recognition to those who have achieved high level of excellence in quality management systems and products in various sectors.

At the same time, it is hoped the award will raise awareness and trigger a wave of quality consciousness among organisations and industries. The award also provides a platform for winning organisations or products to participate in national quality awards.

There are two main awards namely SIRIM Quality Award for product and SIRIM Quality Award for organisation.

Winners will receive incentives in the form of rebates on any of the services, under SIRIM Group for a period of one year, usage of the award logo for publicity and promotional purposes for a period of three years as well as a trophy and certificate.

For 2014, the award received 101 applications from clients. The working committees on product and organisation had reviewed and evaluated the applications, shortlisted the companies/organisations and carried out site assessment/verification visits. Participating companies/organisations were evaluated based on criteria established by SIRIM.

The proposed winners in each category were approved by the technical committee on Oct 30, this year and endorsed by the steering committee on Nov 6, this year. Award winners were honoured at the SIRIM Industry Night 2014 (MSI 2014) yesterday at Sunway Resorts Hotel, Petaling Jaya, Selangor.

SIRIM QUALITY AWARD 2014 WINNERS

SIRIM Quality Award for Products

Category 1: Local companies with annual sales of over RM100 million
— No winner

Category 2: Local companies with annual sales of RM25 million to RM 100 million
— Rokonma (M) Sdn Bhd

Category 3: Local companies with annual sales of less than RM25 million
— ProEight Sdn Bhd

Category 4: Open category - Foreign companies that are incorporated in Malaysia
— Continental Tyre AS Malaysia Sdn Bhd

SIRIM Quality Award for Organisations

Category 1: Companies with annual sales of more than RM100 million.
— KPJ Ipoh Specialist Hospital

Category 2: Companies with annual sales of RM25 million to RM100 million
— Public Packages Sdn Bhd

Category 3: Companies with annual sales of less than RM25 million
— Kolej Poly-tech MARA Alor Star

Category 4: Government agencies
— KWSP

SIRIM Quality Award

KERATAN AKHBAR
NEW STRAITS TIMES (SPECIAL)
TARIKH : 22 NOVEMBER 2014 (SABTU)

SIRIM CHECKS-IN **WITH NEW LABELS**

WHEN purchasing an electrical appliance, the savvy consumer will make sure that the appliance has the SIRIM label on it in addition to other purchasing considerations. Over the years, consumers have come to rely on the SIRIM certification mark as an assurance of the safety and reliability of a product. In addition to the SIRIM certification mark, certified regulated products such as electrical appliances are also affixed with SIRIM labels.

The SIRIM labels, says SIRIM QAS International managing director Khalidah Mustafa, will soon be replaced with new labels as the existing ones have been in use for almost 10 years.

"The replacement of the labels is timely to address the issue of existing SIRIM labels being forged and appearing on substandard and potentially unsafe products in the market. The new labels will be issued on January 1 next year".

The new labels come with enhanced security features, one of which is the use of thermochromic ink which can temporarily disappear when rubbed or exposed to heat. Each label has a unique serial number.

SIRIM labels are affixed on products which are regulated by regulatory bodies and for which product certification is made mandatory. These products include electrical appliances, motorcyclist safety helmets, seatbelts for motorists, fire protection equipment as well as communications and multimedia equipment which are regulated by the Energy Commission, Electrical Inspectorate Unit of Sarawak, Road Transport Department, Fire and Rescue Department Malaysia and Malaysian Communications and Multimedia Commission. There will be new SIRIM labels for all these regulated products except for the labels for communication and multimedia equipment which will remain the same.

Khalidah says that SIRIM has been certifying and testing products for safety and reliability since the 1970s and that the motorcyclist helmet, which was certified to MS 1, the first Malaysian standard, was the first product to be certified under the Product Certification Scheme. Since then, more than 5,000 Product Certification licences have been granted.

The scheme provides an independent assurance to consumers and users that the products certified by SIRIM QAS International conform to specified standards for these products. Besides Malaysian Standards, products can also be certified to international standards, national standards of other countries, regional standards and technical specification.

Under the scheme, a product is certified to comply with the requirements of the relevant standard for that product. The manufacturer is also required to have a sound quality system in place to ensure that the products manufactured consistently comply with the relevant standard. The certification process involves product testing and factory audits. Upon successful certification, the manufacturer is issued a Product Certification licence which is renewable on a yearly basis. Surveillance audits will be conducted twice yearly to ensure that the manufacturer continuously comply with the requirements of the scheme.

> *The replacement of the labels is timely to* ***address the issue of existing SIRIM labels being forged*** *and appearing on substandard and potentially unsafe products in the market.*
>
> ***Khalidah Mustafa***
> *SIRIM QAS International managing director*

An alternative to the scheme, says Khalidah, is the Batch Certification which can be used to certify products in limited quantities. This is especially applicable to importers of electrical products. Once the products have been inspected and tested, SIRIM QAS International will issue SIRIM labels to be affixed on the products to indicate that the particular consignment complies with the relevant standard and regulatory requirements.

In cases where there are no specific product standard or the product needs to comply with specific technical requirements mandated by a regulatory body, such product can be certified under the Product Listing Scheme. For example, under the Fire Listing Scheme, passive fire protection products, components and building materials are certified to comply with national or international standards on fire resistance. This certification is a pre-requisite requirement before manufacturers can obtain approval for the building materials from the Fire and Rescue Department.

Khalidah stresses that product certification not only benefits the consumers but the local manufacturers as well.

"Besides safeguarding consumer interest, product certification can help increase market accessibility for our industries and enhance consumer confidence in our customers' products."

Regulated products *such as* ***electrical appliances*** *are affixed with SIRIM labels.*

Existing SIRIM labels to be replaced

New SIRIM labels

Electrical products regulated by Energy Commission
Size: 10mm x 25mm

Electrical products regulated by EIU Sarawak
Size: 10mm x 25mm

Motorcyclist helmets regulated by Road Transport Department
Size: 15mm x 25mm

Motorist safety belts regulated by Road Transport Department
Size: 10mm x 25mm

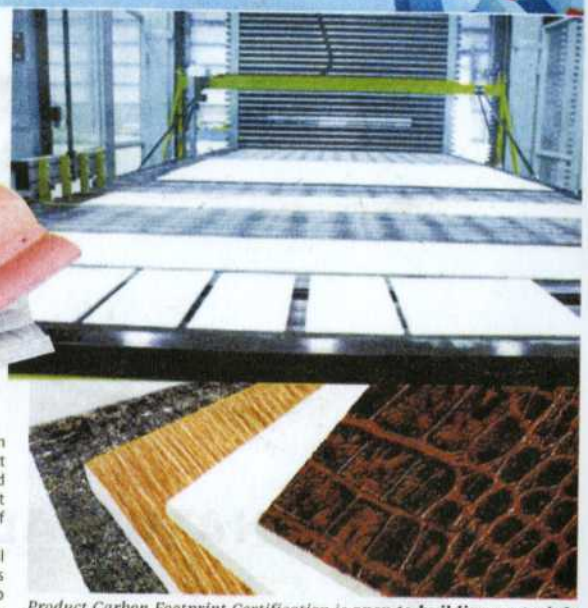
Fire protection equipment regulated by Fire and Rescue Department
Size: 15mm x 25mm

Other regulated products
Size: 10mm x 25mm

Certified non-regulated products
Size: 10mm x 25mm

KERATAN AKHBAR
NEW STRAITS TIMES (SPECIAL)
TARIKH : 22 NOVEMBER 2014 (SABTU)

THE ENTRY OF PRODUCT CARBON FOOTPRINT SCHEME



*Product Carbon Footprint Certification is **open to building materials manufacturers.***

P. SHARMINI

THE introduction of the Product Carbon Footprint Scheme by Sirim Berhad is timely, notably with Malaysia committed to a 40 per cent reduction in its carbon emissions in terms of emission intensity of GDP, based on its 2005 level, by 2020.

The scheme, to be launched this month, is an initiative that will help manufacturers better understand the design and manufacturing process in order to produce environmentally friendly products with a smaller carbon footprint.

It aims to provide relevant information on the carbon footprint of products and assist purchasers and users make objective comparisons between products.

The carbon footprint of a product is the sum of greenhouse gas emissions and removals in a product system, expressed as a carbon dioxide (CO_2) equivalent and is based on the life cycle assessment of the product.

SIRIM Berhad Energy and Environment Flagship, Research and Technology Innovation division senior director Dr Chen Sau Soon says the use of carbon footprint label has been implemented in countries such as Thailand, Korea, Japan, China, Britain and other countries in Europe.

The introduction of this scheme means another step forward for Malaysia's efforts to reduce CO_2 emissions. A group of companies will have the honour of being the first manufacturers to have their products certified under the scheme, with carbon footprint information displayed on their products.

The labelling scheme was developed as a result of the Switch-Asia Grant to SIRIM Berhad for the development of an Environmental Declaration Scheme for Construction and Building Materials.

SIRIM partnered with the Carbon Trust UK, Building Materials Distributors Association of Malaysia, Malaysian Green Building Confederation and Federation of Malaysian Manufacturers to come up with the scheme.

The main objective was to develop guidelines, tools and supporting mechanisms for product footprinting and labelling that meet the needs of the local and international market, and to create the recognition and preference for sustainable products from small and medium enterprises in the country's construction and building materials sector.

"Purchasers and users will find the scheme of great help, chiefly in making product comparison. They can make an assessment of the carbon footprint based on the figure printed on the product," says SIRIM QAS International Sustainability Certification section head Aminah Ang.

> *Purchasers and users will find the **scheme of great help**, chiefly in making product comparison."*
>
> ***Aminah Ang***
> *Sirim QAS International Sustainability Certification Section head*

> *The response by the **companies has been very encouraging**, despite participation being on a voluntary basis."*
>
> ***Dr Chen Sau Soon***
> *Sirim Berhad Energy and Environment Flagship, Research and Technology Innovation Division senior director*

"It also aims to provide information for assessing the environmental impact of products over their life cycle and encourage continuous improvement of the environmental performance of products."

The scheme, she points out, will provide a quantified greenhouse gas profile for the life cycle of a product to enable better comparisons between products.

Under it, 10 Product Category Rules (PCR) have been developed and published by SIRIM to cover 10 product categories in the construction and building materials manufacturing sector.

The product categories are wall coatings, paints, sealants and primers; sanitary wares; plumbing pipes; ceilings; floor finishings; wall panels; masonry units; structural steel; architectural metal; and architectural roofing.

"SIRIM has also developed a specially designed toolkit, the Karbon Kalkulator, which will assist companies calculate their carbon emissions, based on the specific PCRs," says Chen.

The verification of the data collected according to the requirements of each PCR is then done by SIRIM QAS International, as an independent third party certification body. If the results are acceptable, certification will be granted.

SIRIM Berhad began work on the scheme in January last year, with 45 companies invited to participate.

"The response by the companies has been very encouraging, despite participation being on a voluntary basis. After several engagement sessions to explain to them the relevance of this scheme, we are now assisting them via the Karbon Kalkulator to calculate the carbon figures," adds Chen.

To arrive at a carbon footprint, the entire life cycle of a product from raw material processing, production, distribution, use and disposal/ recycling stage will be taken into account.

The raw materials can come from natural resource extraction including crop production, to produce feedstock for the manufacturing or production process where parts, components, intermediary goods are produced and ultimately assembled to end-products for use stage.

Every product will experience an end-of-life (EOL) when it can no longer perform its intended function. However, EOL does not necessarily mean a journey to the disposal site as reuse and recycling are options that help reduce the environmental burden of resource depletion.

In between every life cycle stage is a major contributor of greenhouse gas emission, i.e. transportation.

In a nutshell, the carbon footprint of a product will add the net greenhouse gas emissions from every stage in the life cycle of a product. The life cycle consideration is now widely accepted as the best approach to ensure environmental burdens are not reduced at one stage at the expense of another.

PRODUCT CO_2

SIRIM CO_2e: XX

Chen says the scheme is not only necessary as it enables local products to remain competitive but also allows local manufacturers to calculate their carbon footprint according to a global standard, the ISO/ TS 14067.

Although there are already ecolabels in the market, footprinting is another form of communication that provide manufacturers with a platform to differentiate themselves in declaring quantitative information on the performance of their products.

Adding importance is the fact that the construction sector is one of the country's fastest growing sectors. Worldwide, the trend in construction is moving towards green and sustainable building and Malaysian manufacturers should take heed of the changing landscape.

"What's most important with the development of this scheme is the fact that manufacturers can now re-assess their carbon footprints and see how they can continuously improve to obtain lower figures," says Chen.

Companies receiving the SIRIM carbon footprint mark can make use of it for two years, after which the product will be re-assessed before being recertified.

To the customer, having the mark on a product reassures them of the product's environmental credibility.

The next direction, say Chen and Aminah, is towards low carbon goods as more and more companies carry the carbon footprint mark.

SIRIM Berhad is also planning to extend the scheme into several other sectors, including furniture, electrical and electronics equipment, chemical products and packaging.

Life-cycle of a product

Stage	Process
Production	Material production from natural resources and production of the product from processing of various material to the assembly of parts and units
Distribution	Transportation of the manufactured products, replacement parts and consumables to site for use
Use	Power consumption required when product is operating and on standby; environmental load from production and consumption of fuel necessary for product
Disposal/ Recycling	Final processing including collection, transportation, classification, shredding, sorting, incineration, detoxification, reclamation, recycling and reusing

KERATAN AKHBAR
NEW STRAITS TIMES (SPECIAL)
TARIKH : 22 NOVEMBER 2014 (SABTU)

NEWEST FOOD SAFETY CERTIFICATION TO ENHANCE MARKETABILITY

ZAIDI ISHAM ISMAIL
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FOOD safety without a doubt is one of the most important aspects in our daily lives.

With this in mind, SIRIM QAS International, the country's leading certification body, is going all out to promote the newest food safety certification — FSSC 22000 — to ensure that the food industry in Malaysia remains competitive and has a higher competitive edge in the global market.

SIRIM QAS International food, agriculture and forestry section head Radziah Mohd Daud says when local food products are safe and in compliance with international standards, it will increase their marketability and facilitate access into markets which demand that imported food products be safe and in compliance with international standards.

"When our food products are certified safe, they can gain access to many markets....Europe, Middle East, just to name a few."

But to achieve that, local food manufacturers must first ensure that their products are certified safe in accordance to internationally accepted standards.

The FSSC 22000 Food Safety System certification is gaining importance and recognition in the food industry. SIRIM QAS International is now offering this certification to food manufacturers who wish to get their products certified to an internationally recognised standard and to export them to European markets.

The FSSC 22000 is based on the integration of the ISO 22000-2005 Food Safety Management Systems Standard and pre-requisite programme sector standards e.g. ISO/TS 22002-1.

This certification is applicable to organisations in the food supply chain that process or manufacture perishable animal products (meat, poultry, eggs, dairy and fish products). It is also applicable to producers of perishable vegetable products (fresh fruits and fresh juices, preserved fruits, fresh vegetables, preserved vegetables products with long shelf life at ambient temperatures, canned products, biscuits, snacks, oil, drinking water, beverages, pasta, flour, sugar and salts).

Chemical products for food manufacturing, vitamin additives and biocultures excluding technical technological aids, food packaging material and its related manufacturing are also on the list.

The main benefit of FSSC 22000 certification is that it gives access into the supply chains of major retailers in Europe.

The standard is applicable to all food manufacturers, primary and secondary processors and to every organisation that participates within the food supply chain.

"Large companies will not have major problems in implementing the FSSC 22000 standard. This is due to the fact that these companies have already obtained certification for their food products to standards such as ISO 22000.

"These large companies know very well that their export markets are demanding that their food products be certified to FSSC 22000 and they have no choice but to comply and get the certification."

Radziah says the challenge is for small and medium industries to get this FSSC 22000 certification as sometimes some of them do not have basic manufacturing practices in place. With the food hygiene regulations enforced by the Health Ministry, these small and medium industries are progressing towards implementing good manufacturing practices in their premises, and some of them have successfully obtained food safety certification.

"FSSC 22000 is designed to complement the other standards for food safety and we welcome food manufacturers to apply for this certification. SIRIM QAS International would like to play a role in the facilitation of export of Malaysian food products into international markets and we like to do this through the FSSC 22000 certification of these food products."

Radziah says that SIRIM QAS International, with more than 40 years of auditing and certification experience, is the leading certification body in the country and has a large pool of highly qualified and experienced auditors in the food sector. The technical competence of its auditors will add value to the auditing process and enhances the credibility of FSSC 22000 certification to food industries.

Apart from FSSC 2200 certification, SIRIM QAS International also offers the food industry other food safety certifications such as GMP, HACCP and ISO 22000 Food Safety Management Certification System certification as well as product certification and testing.

Benefits of certification

- FSSC 22000 ensures international acceptance and recognition.
- FSSC 22000 enables food manufactures to comply with food safety requirements which are comprehensive to facilitate global market access.
- FSSC 22000 enhances compatibility of various food safety standards such as GMP, HACCP and ISO 22000.

Application process

- submission of questionnaire
- issuance of quotation
- submission of application
- stage 1 audit
- stage 2 audit
- recommendation and approval
- issuance of certificate
- surveillance/recertification

*FSSC 22000 is **applicable to all** food manufacturers.*

"When our **food products are certified safe**, they **can gain access to many markets**....Europe, Middle East, just to name a few."

Radziah Mohd Daud
SIRIM QAS International Sdn Bhd food, agriculture and forestry section head

KERATAN AKHBAR
NEW STRAITS TIMES (SPECIAL)
TARIKH : 22 NOVEMBER 2014 (SABTU)

ECO DESIGN TO THE FORE

AS the world turns to a more sustainable way of life, SIRIM Berhad looks at an eco-savvy approach to manufacturing design.

Parallel with global trends to go green, industries are seeking more sustainable ways to go about their manufacturing processes. Embracing this development is SIRIM's Industrial Design Centre that introduced its eco-design concept in 2013.

As its name suggests, eco-design involves designing in an environmentally-friendly manner, taking into consideration aspects of functionality, safety, quality, aesthetics, ergonomics and costs.

In other words, it combines industrial design with eco-innovation to ensure that products manufactured have the least environmental impact throughout their entire life cycle, and not just during the manufacturing process.

Citing the manufacturing process of a spoon as an example, its general manager Azhar Ahmad says, "The operations involve producing a spoon using a stamping process, but where does the metal come from? It goes all the way back to the ore mining."

In fact, the centre's environmental technology research counterpart analyses the environmental impact of every single component of a product, right up to its disposal. It encompasses everything – carbon footprints, energy consumption, water utilisation and many more.

*SIRIM **eco-savvy approach** to manufacturing design available at the SIRIM Eco Industrial Design Centre.*

GREEN BRANDING

But why implement eco-design at all?

Aside from the obvious benefits to the environment, an eco-designed product is also a boost for the company.

"It's good branding, ultimately. If you have two products of similar quality and price range, the consumer will tend to choose the environmentally friendlier one," attests Azhar.

With the increasingly global perspective of going green, this also helps a company to expand its reach internationally.

"Our scope is to assist through various avenues, such as awareness campaigns."

GETTING HANDS-ON

Azhar is quick to emphasise that the eco-design team does not consist solely of consultants, even though they do have the expertise to offer consultation work.

"We can do the consultation, but in the end, what do you do with the findings? We look for ways to improve on designs and replace materials with greener options to lower a product's carbon footprint."

The centre can be broadly segmented into two parts: the science portion, which offers solutions on how a manufacturer can improve on their product; and the engineering portion that analyses how strong the product is.

The industrial designers not only take care of the aesthetics but also look into redesigning the weak points and flaws.

"We provide the full range of eco-integration. If you want to improve your product by making it environmentally friendlier, then we can help you," states Azhar.

BUILDING MOMENTUM

It has become necessary for the local manufacturers to embrace global trends if they wish to expand their market reach, especially as the Malaysian market alone is not sufficient. But how receptive have Malaysian manufacturers been to eco-design?

Says Azhar: "I think the bigger companies who are exporting realise that the standards are there. If you really want to penetrate the market, you have no choice. Even China is going green.

"We don't require that the product has to be totally green. What is important is to let people know that we have to start somewhere. This is the way and time to go green!"

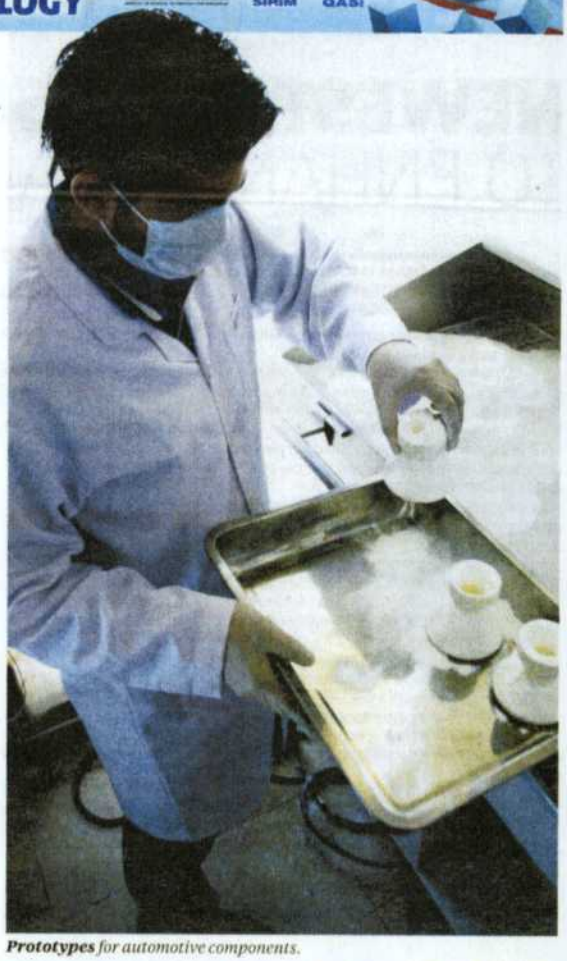
GOING FORWARD

And what is the next step for the centre?

"We want to increase, not only awareness, but also the capabilities of Malaysian designers. The highest value is in design, and if you want to design, you might as well do eco-design. This is where the trend is.

"Consequently, we also aim to train people to be competent in this area. Malaysia is late to the "green" ballgame, so there is definitely some catch-up to do. But we are progressing well, with the integral elements and technology well in place.

"The experience is there. Now we need to tell people that we can do it this way," adds Azhar.



***Prototypes** for automotive components.*

*Prototypes for automotive components produced by **3D printer** at the SIRIM Eco Industrial Design Centre.*

***Prototypes** produced by 3D printer at the SIRIM Eco Industrial Design Centre.*

KERATAN AKHBAR
NEW STRAITS TIMES (SPECIAL)
TARIKH : 22 NOVEMBER 2014 (SABTU)

MEASURE OF SUCCESS

MEASUREMENTS are part and parcel of daily life and play a very important role in many areas, including economic development. It, therefore, goes without saying that calibration is just as important. If you're wondering what calibration is about and why it's necessary, just ask yourself this: What would the cost of failure be to you? "In an attempt to save a few thousand ringgit, many companies in Malaysia take million-ringgit risks. Is it worth it?" questioned Abdul Jalil Baharudin, the Chief Operating Officer of SIRIM Standards Technology Sdn Bhd (SST), a subsidiary of SIRIM.

Many companies in Malaysia are unaware of the importance of having proper calibration conducted on their equipment on a regular basis. While the country does not enforce it, calibration and measurement aspects are playing an increasingly important role, particularly for companies that wish to penetrate the global marketplace.

The reasons to do so are plenty, especially for companies that pride themselves on emphasising quality; among them, calibrations are necessary to ensure quality in measurements as well as to meet quality system requirements. In fact, it was the latter that spurred the inception of SST. "We were previously a small unit in SIRIM. However, in the early 1990s, the European Union started to require all exporters to their countries to be ISO 9000 certified," said Abdul Jalil.

"This meant that all the affected industries had to scramble to obtain the certification or lose their share of the European market." This unexpected turn of events caught Malaysia off guard; companies began lining up to get the certification, which meant that they also need to have their equipment calibrated to affirm their measurement quality.

This resulted in an immense backlog. It was at this point that SIRIM decided to collaborate with Sime Darby Group to set up SIME-SIRIM as it was known then, which started operations in 1995.

"This was a blessing in disguise. Putting the companies in a situation where they either had to comply or risk going out of business actually put the entire process on a fast track. This changed the industries' business perspective and heightened quality awareness considerably," said Jalil. In just three months after stepping in, SST had managed to reduce the backlog from three months to two weeks.

PRECISION COUNTS

When it comes to measurements, every "nano" bit counts. In a satellite-to-ground measurement, for example, even one nanosecond can yield an area as big as a football field. To determine an exact location, you need to be very precise. This is where calibration comes in. "We need to ensure that the equipment used can measure accurately and accordingly, and is internationally accepted," said Jalil. "For instance, if Malaysia is selling 100MT of LNG to Japan, the measurement unit must be accepted by both the countries. So 100MT in Malaysia has to be equivalent to 100MT in Japan. "It is, therefore, essential for the country to have clear, quality measurements that are recognised worldwide," he added.

SST's offerings also include Failure Investigation, Non-destructive Testing (NDT) and, more recently, Fitness for Service. In Failure Investigation, SST goes in to a company to investigate and identify why a certain product had failed before writing up a detailed report on the matter; this gives its customers an opportunity to modify or redesign their product based on the findings. This is also essential if, for example, an accident occurs and the company needs a third-party report for insurance claims. NDT involves utilising a lot of techniques to conduct testing without destroying the samples, such as Phase Array UT (PAUT) and Computerised Radiography Testing (CRT).

Fitness for Service, on the other hand, is a relatively new concept that refers to a technique that utilises computer simulations with real site data input to evaluate if a plant is fit for use for the next few years. "SST worked with a Korean research centre to set up this facility, and it is now already in place," said Jalil.

Malaysian companies as well as multinationals located in the country should take advantage of SST's services. After all, the availability of such expertise locally means that they are able to enjoy efficiency in terms of cost as well as time, both integral factors in the business world.

Previously, companies would have to get overseas expertise, which can be very costly. Our services are more competitively priced than in developed countries – we're talking about a cost difference of more than three times!" explained Jalil. "As a result, we have received requests from abroad, including countries like Japan, Italy, Vietnam and Trinidad & Tobago for Failure Investigation services while for Non-Destructive Testing services, requests from Saudi Arabia, Indonesia and Jordan were received," he said.

Before this, many hi-tech multinationals in particular would have had to depend on their overseas counterparts, which would also add to their costs.

SIRIM offers ***torque calibration*** *to support companies that work with torque instruments with traceability and reliable measurement.*

KERATAN AKHBAR
NEW STRAITS TIMES (SPECIAL)
TARIKH : 22 NOVEMBER 2014 (SABTU)

BRIGHT FUTURE FOR BIO ENERGY

MALAYSIA'S palm oil industry generates some 140 million tonnes of biomass every year. Much of this waste is effluent generated by palm oil mills, which is generally left to decompose in open ponds where it releases some 67 million cubic metres of methane into the atmosphere annually.

Eight years ago, SIRIM decided to find a way to capture, store and refine all this methane so that it could be used as an alternative to natural gas in gas-fired power stations and NGV vehicles.

The project culminated with a pilot plant on Carey Island that was established in cooperation with Sime Darby's East Oil Mill. Now, that project is ready to be commercialised.

"We call it BioNG," says SIRIM's Biomass Energy Technology Section head Azhar Abdul Raof. "Since it is produced from decayed organic matter above the ground, BioNG does not add to greenhouse gas emissions. It is many times more environmentally friendly than conventional natural gas (NG)."

It might seem counter-intuitive given its origins, but BioNG is actually as versatile and efficient as petroleum natural gas. It burns a clean, blue flame that is at least 95 per cent CH 4 methane, with carbon dioxide, oxygen, nitrogen and hydrogen sulphide making up the rest.

Azhar Abdul Raof SIRIM Biomass Energy Technology Section head.

In comparison, hydrocarbon natural gas is typically only 93 per cent methane, with the rest comprising carbon dioxide, nitrogen and other hydrocarbon gases. Indeed, nearly five per cent of petroleum natural gas is actually made up of other alkanes, which make it even more polluting.

What is really attractive about BioNG is the way it could not only reduce the amount of greenhouse gases released by Malaysia's palm oil industry overnight, but also reduce the use of hydrocarbon based-NG in Malaysia's energy and transportation sectors.

For all intents and purposes, BioNG and NG are practically identical. The only real difference between them is that BioNG is carbon neutral while NG is not. But that is a BIG difference.

"BioNG could have a green impact on not just one, but three of the country's most polluting industries," says Azhar. "That's why SIRIM has recommended that BioNG be included as a bio economy entry point project under the government's Economic Transformation Plan."

The process for turning POME into BioNG is fairly simple: effluent is channelled into a covered anaerobic pond equipped with a pump that sucks the gas released from the pond's surface and blows it through a series of purification chambers. These chambers filter out impurities like hydrogen sulphide, carbon dioxide and moisture. At the end of the process, the purified gas is compressed into a high-pressure storage tank with an attached dispenser.

*BioNG can be **stored in CNG cylinders** made by SIRIM.*

"Unlike wind and solar energy sources, BioNG can be efficiently stored and transported in CNG cylinders," explains Azhar. "A typical CNG tube trailer can move about 2,000 cubic metres of BioNG, which is equivalent to about 1.5 tonnes of NG."

Also, unlike hydrocarbon natural gas tapped from underground or undersea wells, BioNG does not need costly pipelines and engineering heroics to bring the gas to the surface. Everything is processed in situ.

As energy projects go, it does not really get much easier than BioNG. However, product pricing remains a challenge because the local market for natural gas is distorted by subsidies. "It isn't hard to make BioNG, but it is hard to make the product economically attractive," explains Azhar.

"We cannot compete against subsidised NG prices." Subsidies do not make natural gas cheaper. Instead, they distribute the costs in different ways, either through taxes or lost revenue. Once Malaysia's subsidy rationalisation programme is complete, the playing field will be levelled and prices will be determined by the market.

"At that point, BioNG will be as competitive as conventional natural gas," says Azhar. "And because it is carbon-neutral, I have no doubt that BioNG will be the preferred choice."

Admittedly, Malaysia's BioNG capacity will never be able to meet the natural gas needs of the whole country. However, BioNG will give the country some measure of energy security and reduce its reliance on coal and gas imports. As a complementary source of feedstock for gas-fired power plants, BioNG is perfect.

"Plantation owners stand to gain a lot from producing BioNG," says Azhar. "There will always be demand for BioNG. Besides reducing the carbon footprint of palm oil mills overnight, BioNG can also be sold to energy producers and vehicle refilling stations."

There have been some modest innovations in transportation over the past two decades, but let's face it: hybrids still need petrol, biodiesels still need to be mixed with diesel and electric vehicles still need to be charged off the grid with electricity generated from hydrocarbon fuels.

Admirable as these innovations are, they are still based on non-renewable energy sources. Unless you drive a natural gas vehicle (NGV) that runs on BioNG, that is. "If we can't change the engine, we can at least change the fuel," says Azhar. "BioNG is the perfect substitute for regular natural gas in NGVs, and it is carbon neutral. Tree huggers will love it."

TRAINING FOR EXCELLENCE

AN increasing number of companies is paying more attention to management systems and best practices. But are these enough to sustain their long-term growth?

A recent survey conducted by SIRIM Training Services Sdn Bhd has revealed that Malaysian companies nowadays are more aware of the importance of implementing management systems and best practices. When asked to rank their reasons for their focus on standards-based management systems (SBMS), the 117 companies which participated in the survey cited a desire to improve their performance as a top priority.

To facilitate this trend, SIRIM Training introduced the Total Quality Fast Track Model (TQFTM) in early 2005 to provide a measurable step-by-step improvement opportunity for companies seeking continuous improvement and business excellence.

"The TQFTM was designed to help companies realise a quality culture within a shorter period of three years or less compared to the conventional approach that could take at least five years," explains SIRIM Training chief operating officer Dr Mohd Azman Idris. While TQFTM has been successful in attaining its objectives, SIRIM Training soon realised that the model has its limitations.

"The participating companies reported significant improvements in customer satisfaction and productivity; nevertheless, the model's impact on human values, and employee morale in particular, was not encouraging," he laments.

In a bid to address this predicament, the TQFTM was refined to put more emphasis on human values, resulting in the introduction of the Excellent Organisation Management (EOM) model recently.

"Many of our current standards only focus on workplace implementation. So while a company might have exemplary employees, once they step out from their workplace, their mentality changes," says Azman when asked how the EOM model came about.

"The EOM is more advanced and holistic in scope. Whatever is learnt and practiced at the workplace can be implemented at all times, even at home or in public."

Comprising four key activities, i.e. Green 5S, Islamic Quality Management System, Improvement and Innovation Initiatives (III), and Total Value-based Management (TVM), EOM stresses on the importance of human values from an Islamic perspective. Green 5S emphasises creating a safe, healthy, conducive and energy-saving working environment through the adoption of the 3Rs – reduce, reuse and recycle, while the Islamic Quality Management System comprises the MS 1900 that offers an Islamic perspective; the III involves activities such as Quality Control Circle (QCC), Kaizen and 6-Sigma, and TVM is an amalgam of best practices like TQM and MS 2300 which is related to value-based management from an Islamic perspective.

"You need to have committed employees to sustain the company, which is why you have to be able to cultivate and maintain a culture of excellence. To facilitate this, we hope to instil positive values, including integrity, honesty and professionalism, into Malaysian employees.

Dr Mohd Azman Idris SIRIM Training Chief Operating Officer.

SIRIM Training's programmes can either be targeted to the general public or conducted in a classroom setting, or as part of a consultation endeavour within a particular company. "Many companies are not sure what standards they should aim for. What we do is analyse the situation (such as the company's current culture, customers, products, industry, etc.) and then recommend what standards they should get, whether something basic or industry specific or both. If needed, we will go in to the company to assess further," he elaborates.

Nevertheless, Azman cautions that the companies also need to take the initiative to look for the appropriate training to suit their current needs. "We cannot deliver everything. Our training focuses on standards. The companies also need to be proactive in seeking out relevant training such as leadership skills and motivational workshops to ensure a continuous and optimum development of their human resources," he says.

Meanwhile, in the pipeline is its Total Productive Management (TPM) Recognition Scheme that is targeted to be launched in November. "These recognition schemes are integral, not only in providing measurable results on the effectiveness of a company's quality initiatives and feedback on how it can improve its performance, but also in sustaining a creative, innovative and quality culture for its long-term sustainability," he explained.

KERATAN AKHBAR
NEW STRAITS TIMES (SPECIAL)
TARIKH : 22 NOVEMBER 2014 (SABTU)

PERFECT FINISH

MAN loves steel. The most versatile material available today, it is used to build the world's tallest buildings, the longest bridges as well as the micro machines that operate within the world's smallest micromechanical devices. Steel is also shaped into a variety of hammers, mills, drills and pins that help us to make other products.

None of this is new, of course – man learned to cut, grind and shape steel into the tools he needed centuries ago. With the development of the steam engine, we also learned to use machines to do a lot of this cutting and grinding work.

Despite all our technology, however, most metal materials are still notoriously difficult to work with. Handle it too roughly, it goes out of shape and must be reprocessed all over again. Handle it too gently, and you'll never get it into the shape you want. And when making either very large structural steel parts or very small metal microstructures, the level of engineering precision that is required is unequalled.

The most challenging precision manufacturing work today happens at a level of detail that is practically invisible to the human eye. The phenomenon of miniaturisation is making products smaller, and the components and electronic circuits within them even more so.

Drilling, milling and manipulating these tiny parts requires tools and endmills with micrometre points and perfectly smooth finishes that are nonetheless capable of cutting and poking through very hard, very durable materials.

Making the tools and endmills that are used in these manufacturing processes is a delicate business. Firstly, the tools have to be made of very tough material in order to be able to penetrate metal, steel and silicon. Secondly, they have to comply with extremely precise specifications and have micron-perfect finishes. Even under the best conditions, an error of a single micrometre can render a tool useless.

To understand just how challenging it is to make such a tool, imagine a surface so fine and so smooth that a single strand of hair lying flat on it would seem like a four-storey building in the middle of an open field. Now, imagine trying to fashion that surface out of one of the hardest metals known to man. That is the kind of challenge the TCG 8 was built for.

*"We will **train-the-trainers and help the educational institution** set up the precision machining classroom on their premises. After that, they will be able to instruct students independently and our engineers will be available as industrial consultants."*

Ajmain Kasim
SIRIM's Micro Precision Unit head

***TCG 8**, a precision machining tool developed by SIRIM.*

*TCG 8 (1st Variance), a **precision grinding machine** developed by SIRIM.*

HARD STEEL

When it comes to precision machining cutting tools, the material of choice is tungsten carbide: a very tough metal that can be cut and formed into bits of various shapes and sizes but is nonetheless able to withstand exceptionally high temperatures. This makes tungsten carbide tools ideal for machining through hard steels or semiconductor materials, where micro-perfect positioning and finishing is crucial to the performance of the end product. With a tensile strength of 100,000-500,000 psi and a Brinell hardness of 2,570 HB, tungsten carbide tools also last much longer than standard tools, and are thus preferred for high-quantity production environments that rely on uninterrupted manufacturing schedules.

Luckily, tungsten carbide is only the second hardest material known to man, or else there would be no way to shape it into the cutting instruments the material is so useful for. The hardest material in the world is diamond, and that is what the TCG 8 uses to saw, shape and grind its tungsten carbide workpieces.

"Our diamond wheels are made from high quality crystals and are designed specifically for cutting tungsten carbide," says SIRIM's Micro Precision Unit, head Ajmain Kasim.

But what makes the TCG 8 really special is that it can grind and shape tungsten carbide workpieces in minimum of eight orientations with 12 different ways right out of the box."

Besides the usual X, Y and Z motion axes, the TCG 8 can also rotate, tilt and angle the headstock as well as the spindle.

With a single clamp mechanism using precision collets, the machine has a parts accuracy of two microns (± 2 µm) and is able to produce tools with a surface roughness of less than Ra 0.1 µm – smoother than the surface of a hypodermic needle.

Indeed, the engineering tolerances of the TCG8 are so fine that SIRIM decided to equip the workstation with a microscope and a quality control imaging system that allows technicians to see the tiniest detail up close. The tiniest groove, ridge or taper can be plotted out on screen via a digital software interface before the actual cutting begins, thus significantly reducing the number of defects.

By using high-quality diamond compound wheels, the TCG8 also offers an exceptionally high operating temperature. This is because diamond possesses very high thermal conductivity so that most of the heat generated during grinding or cutting is dissipated throughout the grinding wheel body towards the induced circulating air around the grinding wheel and atmosphere.

"Having a high operating temperature is important as it allows workstations to be more productive," explains Ajmain. "Cutting wheels last longer and are able to produce more tools per workcycle."

MONEY MACHINE

Given the TCG 8's portability and ease-of-use, Ajmain believes that the machine could open up a whole new world of opportunities within the country's rural population. He points to the cottage industry in Switzerland, which supplies the country's famous watch industry with many of the high-precision components and tools they use to make the world's finest timepieces.

"We designed the TCG8 to be portable and small enough to fit into a van, and it only needs single phase electric power. With some training and a little practice, anyone can take it back home, plug it in and start making high-precision tungsten carbide tools for Malaysia's burgeoning E&E sector."

Given that a typical tungsten carbide micro tool bit can cost between US$50 (RM165) and US$80 (RM264) a piece, the TCG 8 also makes an attractive case to start up a new machine shop cooperative. There were a little over 10,000 registered cooperatives in the country which raked in RM31.1 billion in sales in 2012. However, most of this income came from conventional unskilled sectors such as financial services, agriculture and housing.

The National Cooperative Policy 2011-2020 would like to see cooperatives more involved in high-value, high-skilled economic activities to protect their members from the competitive pressures of the private sector. Nonetheless, Ajmain's team recognises that semi-automated tool and cutter grinders are new to Malaysian industry, and that it will take some time to develop and educate the market. End customers will need to be sold on the idea of procuring tools from local companies rather than importing them from overseas, and local companies need to like the idea of using semi-automated milling machines to make such products instead of conventional, fully automated computer numerically controlled (CNC) machines, which are up to ten times more expensive.

"We need to carve out our niche within the current supply chain, both in terms of the market as well as the talent pool. Before companies can start selling tungsten carbide tools, they need to be able to hire TCG8 technicians to operate the machines.

"Vocational schools, engineering colleges and training and reskilling centres can fill this human capital gap by offering short TCG 8 courses to its students."

SIRIM is currently focused on building the TCG8 talent pool by promoting TCG8 training programmes to educational institutions nationwide.

A two-week module on precision grinding technology would fit nicely into any machining course and will prepare students for the rigours of high-precision fabrication and assembly.

"We will train-the-trainers and help the educational institution set up the precision machining classroom on their premises. After that, they will be able to instruct students independently and our engineers will be available as industrial consultants," says Ajmain, adding that students trained with the TCG8 will have very good prospects in Malaysia's high-value economic future.

He expects the TCG8 to be widely deployed and used to supply components to the automotive, electronics, oil and gas and aerospace industries, all of which rely on micron perfect tungsten carbide tools and endmills. It will be easy to arrange industry attachments with component vendors within these industries.

"These are high-growth industries in Malaysia, and the government is sparing no effort in attracting investments within these sectors. High precision tools are going to be in very high demand. Vocational students and educational institutions had better be ready," says Ajmain.

KERATAN AKHBAR
BERITA HARIAN (BISNES) : MUKA SURAT B3
TARIKH : 22 NOVEMBER 2014 (SABTU)

Cyberview bantu pacu ekonomi Bumiputera

» *Platform usahawan PKS ICT bersaing dalam pasaran lebih luas*

Oleh Mohd Zaky Zainuddin
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Cyberview Sdn Bhd (Cyberview) terus mendokong Agenda Pemerkasaan Bumiputera dalam membantu usaha kerajaan mencapai hasrat memacu ekonomi negara dengan meningkatkan penyertaan usahawan tempatan dalam kalangan Bumiputera beroperasi di Cyberjaya, Selangor.

Usaha syarikat milik kerajaan yang ditubuhkan pada tahun 1996 dan mendapat mandat menjadikan Cyberjaya sebagai bandar pintar, terus diperkukuhkan menerusi fokus dalam membangun serta memperkasakan usahawan Bumiputera dalam bidang komunikasi dan teknologi maklumat (ICT).

Menyedari betapa pentingnya usahawan Bumiputera khususnya yang terbabit dalam perusahaan kecil dan sederhana (PKS) dalam pembangunan ekonomi negara, Cyberview kini giat membantu golongan yang dianggap tulang belakang negara untuk terus menapak dalam bidang berkaitan.

Dengan persaingan hebat dalam kalangan pemain industri membabitkan domestik dan antarabangsa, Cyberview tidak mahu PKS Bumiputera dalam ICT ketinggalan tanpa sebarang bimbingan sewajarnya sehingga menjejaskan pengalaman serta kepakaran yang dimiliki.

*"Kami menyediakan **platform terbaik** kepada syarikat PKS ICT Bumiputera dalam menjalankan perniagaan"*

Nazri Tumin,
Ketua Bahagian Hab Pembangunan Teknologi Cyberview

*Isa Adam Yee (kanan) bersama Ketua Pegawai Teknikal Cruise, Syed Mohamad Taha **di pejabatnya.*** [FOTO ROSELA ISMAIL/BH]

Ketua Bahagian Hab Pembangunan Teknologi Cyberview, Nazri Tumin, berkata usaha yang dimulakan sejak sekian lama memberi sumbangan besar kepada PKS ICT Bumiputera dalam membangun dan memajukan perniagaan, walaupun terpaksa bersaing dalam persekitaran industri yang mencabar.

Perlu bimbingan

Katanya, tugas memperkasakan syarikat PKS ICT Bumiputera bukannya mudah kerana syarikat yang baharu 'setahun jagung' itu memerlukan bimbingan yang berkesan untuk memacu keupayaan mereka yang memulakan perniagaan berasaskan modal yang kecil.

Beliau berkata, Cyberview sebagai syarikat yang diiktiraf sebagai pengurus bandar siber oleh Kementerian Sains, Teknologi dan Inovasi (MOSTI) sudah menyediakan ekosistem perniagaan lengkap.

"Kami menyediakan tiga bangunan berstatus MSC kepada PKS ICT Bumiputera untuk beroperasi dan mereka ditawarkan premis pada kadar sewa yang rendah daripada kadar semasa, sesuai dengan skala tenaga kerja yang kecil bagi syarikat berkenaan.

"Selain kemudahan, Cyberview juga memberikan sokongan kepada akses pasaran dengan menawarkan khidmat latihan intensif kepada PKS ICT Bumiputera, peluang menyertai ekspo IT di peringkat domestik dan luar negara serta mengenal pasti syarikat berpotensi berkembang menerusi kerjasama dengan entiti lain," katanya.

Cyberview, syarikat di bawah Menteri Kewangan DiPerbadankan (MKD) dipertanggungjawabkan untuk menerajui pembangunan Cyberjaya selaras dengan aspirasi kerajaan menjadikan bandar pintar itu sebagai Hab Teknologi Global. Ia termaktub dalam mandat kepada Cyberview dalam merangka Pelan Strategik Hab Teknologi Global, selain memastikan pelaksanaan dan kejayaannya.

Untuk rekod terdapat kira-kira 244 PKS ICT beroperasi di Cyberjaya dan 32 peratus daripadanya adalah syarikat Bumiputera.

Nazri berkata, walaupun Cyberview membangunkan Cyberjaya sebagai hab teknologi global dengan membawa masuk pelbagai syarikat multinasional, namun agenda dalam memperkasakan ekonomi Bumiputera tetap menjadi tumpuan.

"Kami menyediakan platform terbaik kepada syarikat PKS ICT Bumiputera dalam menjalankan perniagaan. Kami menyediakan infrastruktur lengkap dan ekosistem perniagaan terbaik untuk memudahkan serta boleh dijadikan panduan kepada PKS ICT Bumiputera," katanya.

*"Cyberview menyediakan spektrum penuh ICT dan telekomunikasi menerusi kemudahan infrastruktur yang tersedia sejak dulu lagi untuk **membantunya meningkatkan keupayaan syarikat"***

Noor Helmi Nong Hadzmi,
Ketua Pegawai Eksekutif IX Telecom Sdn Bhd

Langkah memperkasakan agenda Bumiputera oleh Cyberview diperakui oleh syarikat PKS ICT Bumiputera yang dulunya memulakan perniagaan dengan serba kekurangan sebelum menjadi sebuah syarikat yang membanggakan.

Peluang perniagaan luas

Menurut Ketua Pegawai Eksekutif CRUiSE GPS Systems Sdn Bhd, Isa Adam Yee, bantuan dan bimbingan yang diberikan Cyberview amat diperlukan bagi syarikat kecil sepertinya yang menawarkan aplikasi mudah alih, sistem berasaskan web dan awan serta perisian sebagai perkhidmatan (SAAS).

Katanya, bimbingan yang tepat pada masanya dengan menyediakan premis di dalam bangunan berstatus MSC, jaringan infrastruktur yang terbaik, serta peluang menyertai ekspo serta pameran di luar negara mendedahkan syarikat kepada peluang perniagaan lebih meluas.

*Tariq (kiri) dan **Ketua Graphic 3D,** Idiyaz Baharuddin.*

Beliau berkata, syarikatnya yang bermula dengan modal hanya RM10,000 pada tahun 2008 itu, kini berkembang positif apabila sudah meneroka pasaran Qatar, Arab Saudi dan Afrika Selatan, selain memiliki modal berbayar RM400,000 setakat ini.

"Cyberview banyak membantu kami dalam memacu perniagaan. Agenda memperkasa ekonomi Bumiputera yang ditekankan Cyberview sememangnya bertepatan dengan hasrat kerajaan dan ia memberikan hasil amat positif kepada syarikat PKS ICT Bumiputera seperti kami," katanya.

Bagi Pengarah Urusan GLUE Studios Sdn Bhd, Tariq Mohd Noh, Cyberview memainkan peranan yang amat besar dalam membangunkan syarikat PKS Bumiputera yang beroperasi di Cyberjaya selaras dengan apa yang dihasratkan oleh kerajaan.

Katanya, bagi syarikat pembikin animasi 3D yang memiliki banyak idea untuk dikembangkan, hakikatnya tidak mampu berdiri sendiri pada peringkat permulaan tanpa sebarang panduan oleh entiti yang mempunyai keupayaan serta kemudahan yang holistik.

Beliau berkata, secara jelas langkah yang diterapkan Cyberview dalam membantu PKS Bumiputera berada pada landasan kukuh untuk mencapai hasrat memperkasakan agenda Bumiputera mengikut acuan sendiri.

Tingkat keupayaan syarikat

"GLUE Studios yang ditubuhkan pada tahun 2010 bakal menayangkan produk animasi 13 episod musim pertamanya di kaca televisyen milik Kumpulan Media Prima Bhd berjudul *Rimba Racer* awal tahun depan," katanya.

Sementara itu, Ketua Pegawai Eksekutif IX Telecom Sdn Bhd, Noor Helmi Nong Hadzmi berkata, Cyberview menyediakan spektrum penuh ICT dan telekomunikasi menerusi kemudahan infrastruktur yang tersedia sejak dulu lagi untuk membantunya meningkatkan keupayaan syarikat.

Sebagai pengendali rangkaian maya (VNO) yang ditubuhkan tahun 2008, Cyberview memperlihatkan jalan yang betul untuk syarikat berkembang di peringkat antarabangsa berlandaskan saluran yang tepat dan efisien.

"Bayangkan, dengan bantuan, pertolongan dan panduan Cyberview, IX Telecom yang dulunya memulakan operasi di rumah dengan modal RM30,000, kini berkembang pesat dan memiliki modal berbayar RM1 juta dalam masa tujuh tahun.

"Malah, perniagaan kami yang dulunya hanya mempunyai pelanggan di Singapura dan Hong Kong, kini terus berkembang di lebih 200 negara. Ia termasuk Indonesia, Kazakhstan dan Amerika Syarikat, manakala di Malaysia pula beberapa nama besar seperti Telekom Malaysia (TM), AirAsia dan Malindo Air juga menjadi sebahagian daripada pelanggan kami," katanya.

KERATAN AKHBAR
UTUSAN MALAYSIA (BISNES) : MUKA SURAT B19
TARIKH : 22 NOVEMBER 2014 (SABTU)

Bioteknologi tawar 83,000 pekerjaan

KUALA LUMPUR 21 Nov. - Dasar Bioteknologi Kebangsaan (NBP) yang diperkenalkan kerajaan sejak 2005 telah membuka sebanyak 83,000 peluang pekerjaan terutama kepada graduan dalam industri bioteknologi di negara ini.

Ketua Pegawai Eksekutif BiotechCorp, Datuk Dr. Mohd. Nazlee Kamal berkata, perkembangan industri bioteknologi di bawah NBP melalui tiga fasa yang bakal membuka lebih banyak peluang pekerjaan menjelang fasa ketiga pada 2020.

"Menerusi fasa pertama pada 2005 hingga 2010 dan fasa kedua (2011-2015), sebanyak 83,000 peluang pekerjaan diwujudkan dan kita akan meneruskan usaha mencipta jaringan antara pemain industri dengan graduan bagi memudahkan mereka mendapatkan pekerja yang bersesuaian menjelang fasa ketiga pada 2016 hingga 2020.

MOHD. NAZLEE

"Untuk itu, BiotechCorp mengambil langkah menubuhkan portal pekerjaan khas sebagai platform kepada graduan mendapatkan pekerjaan yang memberi keuntungan kepada kedua-dua belah pihak sama ada majikan mahupun graduan," katanya pada Pameran dan Persidangan BioMalaysia dan Bioekonomi Asia Pascifik 2014, di sini, semalam.

Program tahunan yang diadakan sejak 2002 itu memberi tumpuan kepada sektor bioteknologi dan pembangunan modal insan.

Menurut Mohd. Nazlee, selain berusaha menyediakan platform kepada syarikat-syarikat berkembang, BiotechCorp berhasrat melahirkan 40 syarikat bioteknologi tempatan bertaraf dunia menjelang 2020.

"Pada fasa ketiga (2016-2020), kita memberi tumpuan kepada pembentukan syarikat bioteknologi bertaraf dunia. Bagi menuju ke arah usaha tersebut, kita akan memberikan bantuan dalam bentuk bimbingan dan dorongan kepada mereka," katanya.

KERATAN AKHBAR
BERITA HARIAN (BISNES) : MUKA SURAT B1
TARIKH : 22 NOVEMBER 2014 (SABTU)

BIOGAS SAWIT

PELUANG JANA EKONOMI IMPAK TINGGI

» *Kerjasama BiotechCorp, Gas Malaysia teroka potensi bahan bakar baharu*

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Pengguna di negara ini berpotensi menikmati harga gas yang lebih rendah sekiranya rancangan mengkomersialkan biogas kelapa sawit sebagai bahan bakar baharu untuk menggantikan penggunaan gas asli menjadi kenyataan.

Ia susulan kerjasama antara Perbadanan Bioteknologi Malaysia (BiotechCorp) dan Gas Malaysia Bhd bagi meneroka potensi mengkomersialkan biogas kelapa sawit negara dalam tempoh dua tahun, sekali gus bakal mewujudkan satu lagi aktiviti ekonomi baharu berimpak tinggi di negara ini.

Jika dilaksanakan kelak, projek itu dijangka membabitkan pelaburan berbilion ringgit bagi mewujudkan infrastruktur pengeluaran gas boleh diperbaharui di kilang kelapa sawit seluruh negara dan menjadikannya sebagai produk tambah nilai baharu.

Perlu miliki perangkap gas

Naib Presiden Kanan BioIndustri, Bahagian Pembangunan Perniagaan dan Pelaburan BiotechCorp, Zainal Azman Abu Kasim (**gambar**), berkata ketika ini biogas yang dikeluarkan daripada aktiviti pengilangan kelapa sawit akan dibiarkan bebas ke udara sebagai bahan buangan.

Namun, katanya, kerajaan sudah mengeluarkan arahan menjelang tahun 2016, semua 422 kilang kelapa sawit seluruh negara perlu memiliki kemudahan memerangkap gas supaya ia tidak dibebaskan ke ozon.

"Kami melihat langkah itu sebagai peluang menjana satu aktiviti ekonomi baharu yang mana gas itu yang boleh digunakan sebagai bahan bakar baharu untuk menggantikan penggunaan gas asli bagi pengguna isi rumah, komersial dan industri, selain ditambah nilai bagi penghasilan produk lain.

"Ia adalah gas terbuang, maka jika dipasarkan, kami menjangka harganya lebih rendah sekitar RM19 bagi setiap million British thermal units (MMBtu) berbanding harga pasaran gas asli tanpa subsidi sebanyak RM43 per MMBtu.

Bantu dapatkan insentif

"Fasa pertama kerjasama ini akan berlangsung antara enam bulan hingga setahun bagi mendapatkan satu standard pengumpulan dan pemprosesannya sebelum ia dikomersialkan," katanya kepada *BH* di Kuala Lumpur, semalam.

Menerusi kerjasama itu, Gas Malaysia akan menggunakan kepakaran dan infrastrukturnya bagi membantu pengeluar kelapa sawit yang memiliki kemudahan memerangkap biogas kelapa sawit untuk menambah nilai pengeluaran mereka.

BiotechCorp akan bertindak sebagai penyelaras dan penyedia insentif untuk membantu Gas Malaysia mendapatkan insentif bersesuaian, membawakan teknologi terbaik industri serta memperkenalkan biogas itu kepada pelabur berpotensi.

> *"Kami melihat langkah itu sebagai peluang menjana satu aktiviti ekonomi baharu yang mana* ***gas itu yang boleh digunakan sebagai bahan bakar baharu*** *untuk menggantikan penggunaan gas asli"*

BERITA ONLINE
BERNAMA.COM
TARIKH: 22 NOVEMBER 2014 (SABTU)

Ribut Petir Di Perairan Perlis, Kedah, Johor Barat Berterusan Sehingga Malam Ini

KUALA LUMPUR, 22 Nov (Bernama) -- Cuaca ribut petir di perairan Perlis, Kedah dan Johor Barat dijangka berterusan sehingga Sabtu malam.

Jabatan Meteorologi dalam kenyataan di sini berkata keadaan sama turut berlaku di perairan Phuket dan Selat Melaka.

Keadaan itu boleh menyebabkan angin kencang sehingga 50 kilometer sejam dan laut bergelora dengan ombak mencapai ketinggian 3.5 meter yang berbahaya kepada bot-bot kecil.

-- BERNAMA

BERITA ONLINE
BERNAMA.COM
TARIKH: 22 NOVEMBER 2014 (SABTU)

Gempa Bumi Kuat Berlaku Di Utara Laut Maluku

KUALA LUMPUR, 21 Nov (Bernama) -- Gempa bumi kuat berukuran 6.5 pada skala Ritcher melanda utara laut Maluku, Indonesia pada pukul 6.10 petang tadi.

Jabatan Meteorologi Malaysia dalam satu kenyataan berkata pusat gempa ialah 179 kilometer (km) dari barat laut Ternate, Indonesia dan 991 km tenggara Semporna, Sabah.

Gempa tidak membawa sebarang ancaman tsunami.

-- BERNAMA

BERITA ONLINE
BERNAMA.COM
TARIKH: 22 NOVEMBER 2014 (SABTU)

Gempa Sederhana Landa Sempadan Myanmar-India

KUALA LUMPUR, 21 Nov (Bernama) -- Gempa bumi sederhana berukuran 5.8 pada skala Richter melanda sempadan rantau Myanmar-India awal pagi ini.

Menurut kenyataan **Jabatan Meteorologi Malaysia** di sini, gempa bumi pada 2.14 pagi itu berlaku di 23.5 darjah utara dan 93.5 darjah timur iaitu kira-kira 226km barat laut Monywa, Myanmar.

Bagaimanapun gempa itu, tidak mendatangkan ancaman tsunami.

-- BERNAMA