Star ESG
ENVIRONMENTAL SOCIAL GOVERNANCE

SPECIAL EDITION

CAN CIRCULAR INNOVATION CRUMBLE THE CARBON EMPIRE?

Driving Malaysia's shift to a circular economy

Datuk Saidatu Akhma Hassan is the deputy secretary-general (sustainability and strategic planning) for the Housing and Local Government Ministry (KPKT)

AS Malaysia moves towards a more sustainable future, embracing the principles of a circular economy is becoming a central focus of its growth strategy. Guided by the Twelfth Malaysia Plan (RMKe-12) and aligned with the global Sustainable Development Goals (SDGs), the circular economy emphasises the reuse, recycling, and repurposing of resources.

This approach is vital in reducing the consumption of natural resources and minimising waste throughout the production and consumption cycles. With an ambitious goal of achieving net-zero carbon emissions intensity by 2050, Malaysia is committed to mainstreaming sustainable consumption and production practices, ensuring long-term sustainability for future generations.

The Circular Economy Blueprint for Solid Waste in Malaysia (2025-2035) is designed to catalyse the adoption of circular economy practices. Its success hinges on the active participation and collaboration of all stakeholders to drive initiatives that enhance climate action and reduce environmental impact. The outcomes of these initiatives will contribute to Malaysia's Biennial Transparency Reports (BTR), a key requirement under the Paris Agreement, coordinated by the Natural Resources and Environmental Sustainability Ministry (NRES).

Towards a circular economy

The Housing and Local Government Ministry (KPKT) has embraced circular economy principles in solid waste management through the Dasar Kebersihan Negara (DKN) 2020–2030. This policy envisions a clean, sustainable, and prosperous nation by fostering cleanliness at all societal levels to protect the environment.

Key to this vision is the transition from a linear to a circular economy, emphasising reducing, reusing, and recycling to minimise waste and maximise resource utilisation. A notable strategy is implementing Extended Producer Responsibility (EPR) to strengthen the solid waste management ecosystem.

Recently, KPKT introduced the Circular Economy Blueprint for Solid Waste in Malaysia (2025-2035) as a comprehensive guide for all stakeholders to drive the nation towards long-term sustainability goals.

This blueprint highlights five Strategic Pillars; Governance and Legislation, Guideline and Procedures, Digitalisation and Technology, Infrastructure and Facilities and Market Creation and 20 Circular Economy Initiatives to spur the implementation of circular economy in solid waste management.

The blueprint outlines 20 key initiatives and enablers designed

to accelerate the transition to a circular economy within the solid waste sector. Its success hinges on the active collaboration of diverse stakeholders, including government agencies, private sector entities, non-governmental organisations, academia, and the public.

Currently, KPKT oversees four separate legislations on solid waste management across different states, with no specific act dedicated to the circular economy. While provisions for initiatives like Extended Producer Responsibility (EPR) and the Deposit Refund System (DRS) exist under the Solid Waste and Public Cleansing Act 2007 (Act 672), the Act falls under the Federal Constitution's Concurrent List, allowing states the discretion to opt out.

Despite this, KPKT remains committed to refining policies and regulations to support circular economy practices. Efforts include conducting comprehensive feasibility studies, updating existing frameworks, and introducing new legislation to address evolving challenges and improve resource efficiency.

Adopting key circular models

To accelerate the adoption of circular economy practices, drive sustainability, reduce waste, and optimise resource efficiency, the blueprint outlines key circular models for the private sector to champion in advancing Malaysia's circular economy:

- Sustainable Production Inputs: Design durable products aligned with the 9R framework and integrate renewable, recyclable, or bio-based materials into production.
- Shared Use Platforms: Encourage resource optimisation through shared models, such as renting or partnering for machinery and equipment.
- Product-as-a-Service (PaaS): Transition from selling products to offering services or performance-based solutions, reducing material consumption.
- Extending Product Lifespan: Maximise product value through repair, maintenance, refurbishment, resale, or remanufacturing, minimising waste.
- Resource Recovery: Commit to collection, recycling, and upcycling processes to reclaim and repurpose materials effectively.

These efforts collectively support the transition to a more resilient, sustainable, and competitive economy.

From legislation to action

Good governance plays a critical role in the successful implementation and scaling up of circular economy initiatives across all sectors by ensuring that policies are effectively designed, implemented, and monitored. Strategic Pillar 1 (Governance and Legislation) promotes shared responsibility among stakeholders, fosters collaboration to address gaps in the circular economy, and creates opportunities for innovation and sustainability.

There are five initiatives under this pillar:

- Strengthen the implementation of the circular economy through legislative transformation. This initiative focuses on two main objectives: streamlining existing legislation and drafting the Circular Economy Act.
- Mandatory implementation of Extended Producer Responsibility (EPR). This places significant emphasis on the producers' accountability for managing waste throughout the entire lifecycle of their products. This initiative will be rolled out in phases, initially focusing on specific types of waste.
- Establishing the National Circular Economy Association (NCEA). An industry-driven entity, NCEA will serve as a platform for industry players to coordinate and drive circular economy initiatives in Malaysia. Supported by KPKT, the NCEA will develop guidelines and resources, working closely with the National Circular Economy Council (NCEC) at the national level.
- Encourage housing developers to incorporate circular economy facilities in neighbourhoods, enabling residents to easily sort and dispose of recyclables. This initiative reduces landfill waste, promotes environmental sustainability, and fosters a culture of responsibility and waste management awareness within the community.
- Strengthening the Licensing System for the Solid Waste Management Eco-system. This new initiative aims to strengthen the licensing system for solid waste management by ensuring all participants are registered and hold valid licences, creating a more regulated, efficient, and sustainable waste management system.

Additionally, the National Circular Economy for Solid Waste Council (NCEC) has been established to oversee and monitor circular economy initiatives at all levels. Chaired by the KPKT Minister, the council includes federal, state, and local agencies, industry players, academics, and NGOs to accelerate the transition to a circular economy.

Incentivising transformation

Challenges such as economic incentives, regulations, and consumer preferences for traditional linear models hinder the widespread adoption of circular economy practices. To address this, the government will introduce initiatives to support recycling and waste management facilities and collaborate with financial institutions to provide incentives for circular economy investments. This blueprint serves as a foundation for developing new financial instruments to encourage industry-wide adoption of circular business models.

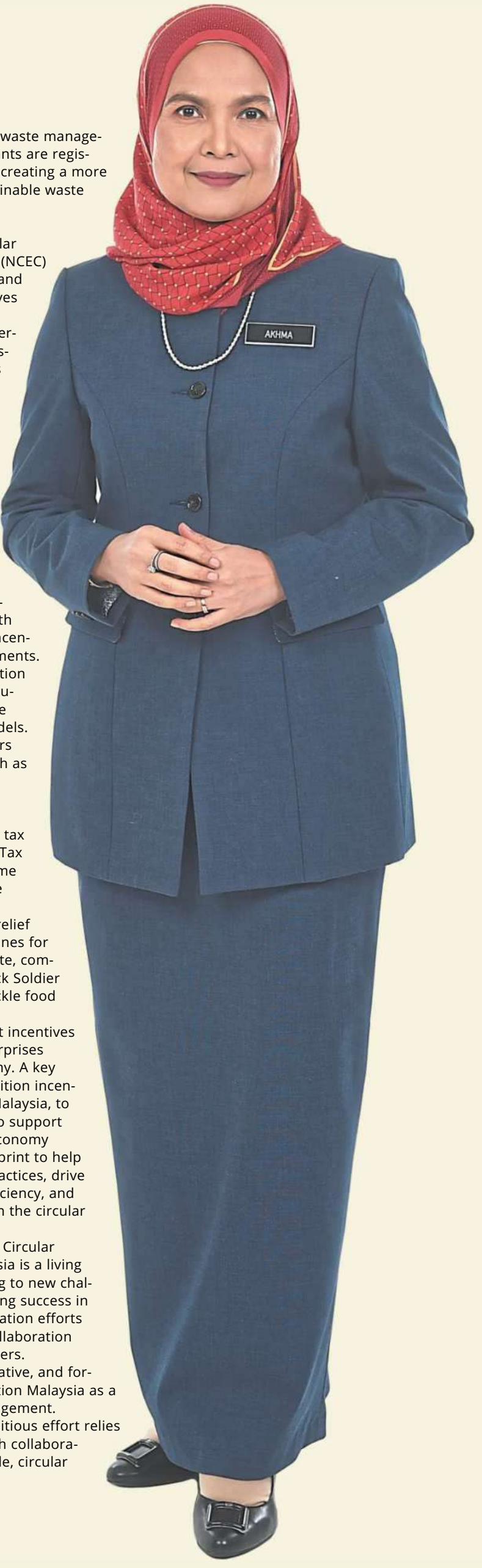
Currently, the government offers various funding mechanisms, such as the Green Technology Financing Scheme (GTFS) managed by the Malaysian Green Technology And Climate Change Corporation, and tax incentives like Green Investment Tax Allowance (GITA) and Green Income Tax Exemption (GITE) through the Finance Ministry.

Budget 2025 also includes tax relief for food waste composting machines for households, with a RM2,500 rebate, complementing programmes like Black Soldier Fly (BSF) larvae composting to tackle food waste.

The blueprint will further target incentives for small and medium-sized enterprises (SMEs), vital to Malaysia's economy. A key initiative is the Low Carbon Transition incentive, promoted by Bank Negara Malaysia, to encourage financial institutions to support companies in adopting circular economy practices. KPKT aims for the blueprint to help SMEs transition to sustainable practices, drive innovation, improve resource efficiency, and strengthen their global position in the circular economy.

In conclusion, the blueprint for Circular Economy in Solid Waste in Malaysia is a living framework, continuously adapting to new challenges and opportunities. Achieving success in circular economy and decarbonisation efforts depends on ongoing, strategic collaboration among a wide range of stakeholders.

KPKT provides a holistic, integrative, and forward-thinking framework to position Malaysia as a leader in sustainable waste management. However, the success of this ambitious effort relies on collective action – only through collaboration can the vision of a sustainable, circular economy become a reality.



ESG IN THE NEWS

OCT 21

• **Sarawak Energy Bhd (SEB)** is to power the Sarawak Data Centre Park (SDCP) project, the state's first energy-efficient four data centre hub to be located here.

Wholly-owned subsidiary **Syarikat Sesco Bhd** has inked a memorandum of understanding (MoU) with **Netrunner Sdn Bhd** on the sale and purchase of electricity for the project.

• The power and utilities sector will see a strong multi-decade growth, driven mainly by the National Energy Transition Roadmap (NETR).

TA Research, which has reaffirmed its "overweight" rating on the sector, said the country's focus on decarbonising its energy grid, particularly through renewable energy (RE) expansion, is a key factor in this positive outlook.

OCT 22

• **Samaiden Group Bhd**'s wholly-owned subsidiary **Samaiden Capital Management Sdn Bhd** and **Chudenko (M) Sdn Bhd** have entered into a shareholders agreement with their joint venture company, **Samaiden Chudenko Renewables Sdn Bhd**, to undertake a joint investment in solar photovoltaic or PV facilities and related services.

In a filing with Bursa Malaysia, Samaiden said the agreement set out the rights and obligations of each party to jointly undertake project investments in the renewable energy industry and to regulate the affairs and rights of each shareholder.

OCT 24

• The number of electric-powered vehicles (xEV) reached 33,3319 units as of Sept 30, 2024, representing about 5% of the total industry volume, says Investment, Trade and Industry Minister Tengku Datuk Seri Zafrul Abdul Aziz.

xEV includes battery electric vehicles (BEVs), plug-in hybrid EV (PHEVs), hybrid EVs (HEVs) and fuel cell EVs.

"The government views the use of HEVs and PHEVs as still relevant to achieving its targets, as the EV vehicles support the country's ambition to achieve net zero carbon emissions by 2050," he said.

OCT 25

• Competition in the automotive sector is expected to heat up as Malaysia aims to raise electric vehicle (EV) adoption to 15% of total industry volume (TIV) by 2030 compared with 5% as of September 2024.

According to **Affin Hwang Investment Bank** Research, advancements in battery technology and safety, advanced EV safety features and transition to a low-carbon economy have resulted in greater motivation to adopt EVs.

By 2025, it expects EV adoption to rise to 80% compared with the current adoption of 5% or 33,319 units of TIV as at September this year.

OCT 26

• **Gamuda Bhd** has received a letter of award from **Upper Padas Power Sdn Bhd (UPPSB)** to be the total development contractor (TDC) for the 187.5MW Ulu Padas Hydroelectric Project in Tenom and Sipitang, Sabah.

In a statement, Gamuda said that together with its joint-venture partner, **Conlay Construction Sdn Bhd**, they will incorporate a new joint venture (JV) to be the TDC worth RM3.05bil.

OCT 30

Tenaga Nasional Bhd (TNB) will continue advancing its efforts into energy transition as it renews its commitment of working together with the government to achieve net-zero carbon emissions by 2050.

Chairman Tan Sri Abdul Razak Abdul Majid said in line with the National Energy Transition Roadmap, key initiatives had been set up and ongoing.

NOV 1

• **Cypark Resources Bhd** has been granted an extension of time (EoT) for the long-delayed completion of its third cycle of large scale solar (LSS3) photovoltaic plant of 100MW in Merchang, Terengganu.

In a filing with **Bursa Malaysia**, **Cypark** announced that its 70%-owned subsidiary, **Cypark Suria Merchang Sdn Bhd (CSM)**, had received a notification letter from the Energy Commission (EC) that the application for EoT had been approved by the Energy Transition and Water Transformation Ministry for the achievement of the commercial operation date (COD) for its LSS3 project.

NOV 5

• **SD Guthrie Bhd** has partnered with **AME Elite Consortium Bhd**'s wholly-owned subsidiary, **AME Industrial Park Sdn Bhd**, to develop a green industrial park on 259ha within **SD Guthrie**'s Kulai estate in the Johor-Singapore Special Economic Zone (JS-SEZ).

In a joint statement, the companies highlighted that the upcoming industrial park is set to adhere to stringent environmental standards and sustainable practices.

• Malaysian public-listed companies (PLCs) are showing progress in adopting the Malaysian Code on Corporate Governance (MCCG), according to the Securities Commission (SC) Corporate Governance Monitor (CG Monitor) 2024 report.

The regulator said that 30 out of the 48 best practices recorded adoption levels above 90%, highlighting the commitment of many PLCs to sound corporate governance.

• **RAM Sustainability Sdn Bhd** has awarded a Platinum rating, its highest sustainability rating, to **Malaysia Steel Works (KL) Bhd (Masteel)** for its leadership in sustainability backed by extremely strong ESG fundamentals.

NOV 6

• Nuclear as an energy source is essential for Malaysia to achieve net zero by 2050 and is expected to be included in the 13th Malaysia Plan, says Economy Minister Rafizi Ramli.

"I can mention openly now, nuclear is on the table – because without nuclear and if we were to miss one or two (options), it's quite difficult for Malaysia to achieve net zero by 2050," he said during an industry dialogue session at the National OGSE Blueprint Forum 2024.

NOV 11

• Malaysia's abundant renewable energy sources will ease the electric vehicle (EV) infrastructure development within the country, said **Geely Holdings Group** global communication lead Ashley Sutcliffe.

Referencing Malaysia's renewable energy potential, he said the country is set to become a new energy leader.

Sutcliffe highlighted the importance of government initiatives in starting infrastructure, stating that, "once the government gives it that first push, the stone just keeps rolling".

NOV 13

• **Solarvest Holdings Bhd**'s 30% owned subsidiary **Selarong Pertama Energy Sdn Bhd (SPESB)** has been approved by **Tenaga Nasional Bhd** to operate as a merchant generator.

SPESB is authorised to sell energy to the single buyer with a capacity of 29.99-megawatt alternating current (MWac), and this facility will be located in Kulim, Kedah.

• More clarity has been shed on **Tenaga Nasional Bhd's** hybrid hydro floating solar (HHFS) project, a key flagship initiative under the National Energy Transition Roadmap (NETR), as well as its Sungai Perak Hydro Scheme Life Extension Programme (LEP), which aims to prolong the life and enhance the earnings potential of the group's hydro assets.

NOV 14

• China-based Kibing Group has committed to build a new RM7.2bil solar glass manufacturing plant in the Kimanis area, about 40km south of the Sabah capital, with the exchange of documents with the two state government-linked companies.

The first was the exchange of the sublease agreement between the group's subsidiary **SBH Kibing Solar New Energy (M) Sdn Bhd** and **Fokasrama Sdn Bhd**, a wholy-owned subsidiary of the **Sawit Kinabalu Group**.

The second exchange of documents was for the heads of agreement between **SBH Kibing Solar New Energy (M) Sdn Bhd** and **Sabah Energy Corp Sdn Bhd (SEC)** to supply 25 million standard cubic feet per day of natural gas to support the new factory's operations.

NOV 15

• **IOI Properties Group Bhd's (IOIProp)** decision to install solar panels at its mall, IOI City Mall in Putrajaya was not only a decision made for the environment but one that makes business sense as well.

Group chief operating officer Teh Chin Guan said from a business aspect, embracing sustainability made complete sense because going green has become an increasingly important aspect in how businesses are run.

NOV 21

• Malaysia aims to establish itself as a leading hub for green investments to drive sustainable growth, says Housing and Local Government Minister Nga Kor Ming.

"Through the 29th Conference of the Parties (COP29), Malaysia aims to establish itself as a leading hub for green investments by promoting supportive policies and fostering strategic collaborations to drive sustainable growth,' he stated during the country's address at the Ministerial Roundtable on Urbanisation and Climate Change.

Crumbling the carbon empire with circular innovation

Integrating decarbonisation and the circular economy is increasingly vital, but can these approaches work together?

AS global deadlines for decarbonisation loom, Malaysia – like many nations – faces the urgent challenge of adopting decarbonisation and circular economy strategies to reduce environmental impact while fostering economic growth.

Central to this transformation is the circular economy, a regenerative model focused on eliminating waste, maximising resource use, and minimising environmental harm.

By aligning decarbonisation efforts with circular economy principles, businesses can unlock a range of benefits.

The shared objectives of reducing waste and emissions create a unified strategy, amplifying the potential for success. Combining these approaches not only attracts greater attention and resources from policymakers, investors, and the public, but also fosters systemic change.

Taking on duality

Sustainability expert Pauline Goh opines that it prompts businesses to rethink production and consumption models, driving more efficient resource use and lowering environmental impacts.

Noting that this integrated effort can have a far-reaching influence, Goh suggests Malaysia to adopt a dual strategy of decarbonisation and the circular economy to tackle climate change and enhance economic resilience.

"These strategies complement each other. Decarbonisation reduces emissions through cleaner energy and sustainable practices, cutting down environmental impact. Circular economy strategies minimises waste by reusing, recycling, and redesigning processes, ensuring more efficient resource use throughout their lifecycle," says the expert who has over 30 years of experience in various sectors holding senior roles.

Goh believes that integrating circular strategies is not only a necessity, but also an opportunity for Malaysia to lead the way toward a resilient and sustainable future.

She is currently a Member of the Industry Advisory Board at Sunway Business School; Swiss Malaysian Chamber of Commerce vice-chairman; BeLuxCham vice-president, French Chamber and EuroCham board member; and Alliance Française de Penang president.

She adds that integrating these approaches aligns with the nation's commitment to achieving net-zero emissions by 2050 and advancing the 12th Malaysia Plan's sustainable development goals.

An uphill battle

Integrating decarbonisation and circular economy strategies presents challenges, especially in sectors like oil and gas. The industry faces pressure to decarbonise, but adopting circular practices like repurposing decommissioned platforms, carbon capture and storage can help mitigate impacts.

In manufacturing, reliance on fossil fuels and limited recycling infrastructure hinder circular practices at scale. Malaysia also struggles with low recycling rates and high plastic waste, highlighting the need for better waste segregation and recovery systems.

Goh says: "The integration of decarbonisation and circular economy initiatives in these industries face significant obstacles. One of which is the high upfront costs associated with implementing circular economy projects and decarbonisation technologies.

"Moreover, the lack of technical expertise in adopting advanced circular solutions, coupled with resistance to change due to established practices and profitability concerns, further complicates the transition.

"Fragmented supply chains also present a barrier, as collaboration across various sectors can be difficult to coordinate."

Banking on emerging trends

Despite challenges, emerging trends and innovations are driving the synergy between decarbonisation and the circular economy. Goh shares that waste valorisation technologies are offering ways to convert industrial waste into valuable materials or energy, while green hydrogen holds promise for decarbonising heavy industries.

She adds that digital twins – a virtual model of a physical object, system, or process that uses real-time data to simulate its behaviour and performance – are being used to simulate resource flows and emissions, optimising circular designs, while the rise of biomaterials, such as sustainable aviation fuel, is aiding in replacing fossil-based materials with low-carbon alternatives – pushing the two strategies closer together.

Goh notes that digital technologies like artificial intelligence (AI), blockchain, and Internet of Things (IoT) are transforming waste management, while EPR policies, supported by Malaysia's Circular Economy Blueprint, aim to drive circular practices by 2027-2028.

Green finance, through bonds and sustainability-linked loans, is fueling investments in low-carbon and circular initiatives, with increased backing from Malaysia's financial sector.

"Technology plays a crucial role in facilitating the integration of decarbonisation and circular economy principles. AI optimises resource use and predicts waste streams, while IoT enables real-time tracking of resources and waste.

"Blockchain can improve transparency in material flows, ensuring the integrity of circular practices. Carbon capture, utilisation, and storage (CCUS) technologies help capture and store emissions, providing a critical tool for decarbonisation," she says.

Incentivising adoption

The integration of circular economy practices with decarbonisation efforts in Malaysia faces several policy and regulatory gaps. A lack of standardisation prevents the creation of a unified framework to measure both circularity and emissions reductions, which hinders ability to track progress and set clear targets.

Weak enforcement of existing waste management and emissions policies reduces their effectiveness, while limited financial incentives, such as subsidies or grants, fail to encourage businesses to adopt circular economy practices. Insufficient data collection on waste and emissions impedes informed decision-making.

However, the government recognises this and is taking steps to circumvent the issues by launching the National Circular Economy Blueprint 2025–2035.

To further drive efforts in decarbonisation and circular economy principles adoption, Goh says: "Authorities can drive circular and low-carbon adoption through tax incentives, grants for pilot projects, EPR regulations, low-carbon standards, and market mechanisms like carbon pricing and credits."

Guaranteed success?

Goh believes that the integration of decarbonisation and the circular economy significantly enhances the likelihood of success for both strategies.

"They share common goals of reducing waste, emissions, and inefficiency, creating a unified approach to sustainability. By combining these efforts, resource prioritisation becomes more effective, as the integration attracts greater visibility, investment, and policy support.

"This dual strategy drives systemic change by encouraging a fundamental shift in production and consumption patterns, amplifying their impact and fostering long-term sustainability across industries."

To effectively integrate decarbonisation and circular economy strategies, Goh advises businesses to adopt a structured approach to decarbonisation and circular economy strategies by starting with pilot projects, engaging wide-ranging stakeholders for collaboration, setting clear metrics to track progress, and leveraging government incentives like tax breaks and grants to ease the transition.

In summary, aligning decarbonisation with the circular economy offers Malaysian businesses the chance to support national climate goals while driving innovation and economic growth. Despite challenges, proactive strategies, collaboration, and a commitment to sustainability can foster transformative change.

"For Malaysia, integrating these approaches is not only essential but also an opportunity to lead toward a sustainable and resilient future," says Goh.

However, the question remains. Given that the nation relies heavily on fossil fuels as a substantial source of income, will it be successful in adopting circular strategies and reducing environmental impact?

Navigating profit and accountability

KPKT is addressing the urgency of corporate accountability in sustainability

Saidatu Akhma (left) highlights the government's efforts to establish a circular economy through strategic policies and initiatives, aligning with global sustainability goals, combating climate change, and promoting resource efficiency. Pictured with her are (from second left) KPKT minister Nga Kor Ming, secretary-general Datuk M Noor Azman Taib and deputy secretary-general (management and development) Muhammad Razman Abu Samah. — ART CHEN/The Star

IN the face of rising environmental challenges and the urgent need to decarbonise, there is increasing focus on holding companies accountable for their greenhouse gas (GHG) emissions and their ability to adopt circular economy practices.

While business-driven economic activity is a major source of GHG, it is also within the private sector that innovative solutions are emerging to prevent, mitigate, and adapt to the adverse impacts of climate change.

Businesses, therefore, not only bear responsibility for emissions but also possess the potential to lead the way in developing and implementing strategies that protect the planet and its people.

Recognising this, the Housing and Local Government Ministry (KPKT) is implementing measures to ensure businesses go beyond making commitments and take concrete actions to achieve their sustainability goals.

KPKT deputy secretary-general (sustainability planning and environment) Datuk Saidatu Akhma Hassan says: "The government is building the foundation for a circular economy that aligns with global sustainability goals, addresses climate change directly, and paves the way for a new era of resource efficiency through a series of strategic policies, initiatives, and forward-thinking blueprints.

Tackling barriers

Despite growing concerns over climate change, resource depletion, and social inequality, holding businesses accountable for sustainability remains challenging. Barriers such as greenwashing, complex supply chains, lack of consumer awareness and demand as well as a short-term profit focus complicate progress.

Overcoming these obstacles is crucial to ensuring businesses can meet their sustainability goals and contribute to a more sustainable future. The primary challenge KPKT faces is the comprehensive implementation of the circular economy across all states in Malaysia.

Saidatu Akhma shares that currently, only seven states have adopted Act 672, which is also known as Solid Waste Management and Public Cleansing Act 2007. The Act is one of Malaysia's key legislative frameworks, designed to address the shortcomings of waste management laws across Peninsular Malaysia and the Federal Territories, ensuring better coordination, enforcement and sustainability.

"To achieve a nationwide transition, a thorough strategy and action plan is needed to ensure coordinated efforts among all stakeholders, including state governments, local councils, businesses, industry players, academics, associations, and non-governmental organisations.

"KPKT's recently launched Circular Economy Blueprint for Solid Waste in Malaysia (2025-2035) provides a strategic framework to standardise legislation by harmonising existing policies and guiding the development of a new Act that ultimately unifies the circular economy in Malaysia," says Saidatu Akhma.

Raising the level of awareness and changing the mindset of both consumers and businesses towards sustainable practices are also huge challenges to the ministry.

Additionally, the infrastructure for recycling and waste management needs further development and improvement. There is also a need for more robust regulatory frameworks to ensure compliance and promote innovation in circular economy practices.

"Malaysia is moving towards a more sustainable future by integrating circular economy principles with its decarbonisation agenda. Through strategic policies, financial incentives, public-private partnerships, and technological innovation, the country aims to drive economic growth while reducing its environmental footprint," she says.

Saidatu Akhma adds that the government's holistic approach to sustainability positions Malaysia as a forward-thinking leader in both circular economy and climate action.

Enforcing answerability

Improved recycling and circularity procedures are identified as key aspects for the sustainable rollout of renewable energy sources, batteries, and other transformative technologies.

According to studies, a climate neutral economy is going to rely heavily on a wide range of raw materials that must be sourced, processed and recycled in a way that minimises the ecological impact, emissions and waste produced by businesses.

"KPKT is carrying out key measures through the Circular Economy Blueprint for Solid Waste in Malaysia (2025-2035) to hold companies accountable for their circular economy commitment," says Saidatu Akhma.

These measures include:

> Regulatory frameworks and legislation: Governments can enforce regulations to promote circular economy practices and reduce carbon emissions, such as mandatory recycling, waste reduction laws, carbon quotas, and extended producer responsibility (EPR) schemes. Clear legal frameworks ensure companies comply with environmental standards, supporting the goals of Strategic Pillar 1 – Governance and Legislation.

> Transparency and reporting requirements: Companies can be mandated to publicly report their environmental performance, including progress on circular economy initiatives and carbon reduction. Since 2016, ESG reporting has been compulsory for listed companies in Malaysia, regulated by the Securities Commission to encourage sustainability practices. This is in line with Strategic Pillar 5 – Market Creation.

> Incentives and penalties: Governments can incentivise companies meeting circular economy and decarbonisation goals with rewards, tax breaks, or subsidies, while imposing fines or penalties on those that fail to comply. This "carrot-and-stick" approach encourages accountability. This is in line with Strategic Pillar 5 – Market Creation.

> Public procurement policies: Governments can use procurement policies to drive circular economy adoption by prioritising contracts with companies that meet high sustainability standards, including waste reduction, resource efficiency, and carbon emissions criteria. This is in line with Strategic Pillar 2 – Procedure and Guideline.

> Sustainability certifications and labels: Governments can create certification programmes or sustainability labels to recognise companies that meet circular economy and decarbonisation criteria, encouraging consumers and investors to choose environmentally responsible businesses. This is in line with Strategic Pillar 2 – Guideline and Procedure, CEI 8 - Introduce Zero-Waste-to-Landfill Certificates.

> Public awareness and consumer pressure: Governments can run public awareness campaigns to educate consumers on the environmental impact of their purchasing choices, drive demand for sustainable products and create market pressure on companies to meet circular economy and decarbonisation commitments. This is in line with Strategic Pillar 5 – Market Creation, CEI 20 - Empowering Industry Driven Communication, Education and Public Awareness (CEPA) Programme.

Leveraging partnerships

Leveraging public-private partnerships (PPPs) is crucial for advancing the circular economy, as these partnerships enable the pooling of resources, innovation, and expertise from both sectors. These collaborations can drive large-scale initiatives by combining government policies with private sector efficiency, fostering innovation, and ensuring that sustainability goals are met.

PPPs help share risks, scale circular practices, and create jobs, while facilitating the development of supportive policies and regulations. Ultimately, these partnerships are crucial for making the transition to a circular economy more efficient, widespread, and economically viable.

With that in mind, Saidatu Akhma says the government is managing stakeholder engagement and collaboration in transitioning to a circular economy with the blueprint as a guide.

"It (the blueprint) stresses that successful implementation requires active participation from government agencies, the private sector, NGOs, and the public.

Ongoing cooperation between the public and private sectors is crucial - without it, progress will be hindered, success will be unattainable.

"To foster this collaboration, the blueprint will leverage on attractive incentives tailored to support circular business models, encouraging a symbiotic relationship between the public and private sectors.

"This includes the development of waste eco-parks, sanitary landfills, material recovery facilities, and other technological innovations that the private sector can invest in. The aim is to create a holistic transformation of the entire ecosystem and business mechanisms," she shares.

This approach aligns with the blueprint's Strategic Pillars 3 (Digitalisation and Technology), 4 (Infrastructure and Facilities), and 5 (Market Creation), which collectively aim to support the infrastructure, technology, and market conditions necessary for a successful circular economy.

She adds that a strong partnership between the public and private sectors ensures the alignment of resources, technology, policy, and finance to support the transition to a low-carbon economy, accelerating efforts to meet decarbonisation targets.

In summary, success in circular economy and decarbonisation relies on ongoing strategic collaboration with diverse stakeholders.

Harnessing circular economy for greener, more resilient cities

By LAU CHING LUAN

THE waste produced by Malaysians is accelerating at an alarming rate, as experts forecast current landfills are on track to reach capacity by 2050.

Tackling this issue requires policy enforcement and incentives to encourage waste reduction, and the concept of a circular economy forms a strong foundation for how this can be achieved.

In a circular economy, waste is reframed as a valuable resource.

The model focuses on sharing, leasing, repairing, and recycling existing materials to leverage their utility for as long as possible.

Circular thinking fosters greener cities with reduced traffic congestion, reduced waste, better air quality and improved water security.

Cities also become more resilient by minimising dependence on raw materials by keeping products in use and balancing local manufacturing with global supply chains.

Reducing resource extraction and greenhouse gas emissions are at the heart of circular thinking.

It is widely acknowledged that the built environment, transportation, and food systems have the greatest potential for reducing greenhouse gas emissions through circular economy strategies.

The biggest potential reductions in emissions are found through changes in the consumption side and product design measures.

According to studies by the Ellen MacArthur Foundation (2021), when a circular economy is applied to industries like the built environment, mobility, food, electronics, and textiles, it could cut greenhouse gas emissions in Europe, India and China by 22–44% by 2050 when compared to business as usual.

The challenge of waste management presents us with an opportunity for innovative and sustainable solutions that have the potential to transform our cities into thriving green communities.

However, that requires alliances across communities, businesses, academics and governments.

In the built environment, the circular economy goes beyond regular green building practices in prioritising the reuse of existing buildings and infrastructure, a practice often referred to as retrofits.

Building for adaptability is thus essential. Creating areas and buildings that are easily repurposed guarantees their life and significance in a constantly shifting urban environment.

Driving green initiatives for a sustainable future

Prioritising green initiatives has the added benefit of improving the social and economic welfare of a city's residents.

Green cities are fundamentally attractive to young talent and companies with strong ESG commitments.

They are, by nature, more liveable and resilient, spurring job growth, reducing healthcare costs and giving an important boost to the attractiveness of a city for tourism.

Green cities serve as incubators for innovation, fostering a robust environment for sustainable industries and technologies to flourish.

As these cities prioritise renewable energy sources, waste reduction and efficient transportation systems, they generate a demand for skilled workers across various sectors.

The cleaner air of green cities leads to improved public health and reduced healthcare costs.

By prioritising green spaces and sustainable transportation options like cycling and walking paths, cities can encourage physical activity, reducing the prevalence of sedentary lifestyles and associated health issues.

Some of the most desirable tourist destinations in the world are green cities, drawing visitors with their commitment to sustainability and unique green infrastructure.

We have seen this in Singapore and Seoul, for instance.

Parks, botanical gardens, and natural reserves can serve as recreational spaces for both residents and tourists, as it does well in Hong Kong.

Lau Ching Luan is Arup Malaysia's country leader.

Greener, more competitive cities

In Kuala Lumpur, the primary targets of the Kuala Lumpur Climate Action Plan are reducing greenhouse gases through policies that decarbonise the transport and property sectors.

Recognised for its overreliance on private cars, Kuala Lumpur is improving public transport and promoting active mobility to drive modal shift.

In the property sector, many are striving to decarbonise old building stock through improved energy efficiency.

With the abundance of building stock in the city, we have an opportunity to address reduction of embodied carbon by building fewer new buildings and prioritising retrofits.

If we are to take advantage of this opportunity, having the right policy settings and financial support will be critical enablers.

Looking forward, cities will need to address sustainable and green initiatives to ensure they remain competitive on the world stage.

Arup's recently released *Redefining City Competitiveness* report examines competitiveness indicators that predict a city's ability to attract, retain and grow businesses, talent and investment, in the long-term.

The report is a measure of a city's preparedness for the future in response to risks such as climate change, as well as how it positions itself to capture future opportunities and to compete globally.

The findings suggest that Kuala Lumpur cannot afford to continue with business as usual if we want to improve our attractiveness to investors.

Harnessing the circular economy is a viable avenue for Malaysia to position our cities for future success, by improving our resilience to climate shocks and stresses that will become increasingly important over time.

For more information about Arup's "Redefining City Competitiveness" report, visit https://competitivecities.arup.com/

EIAs need to account for greenhouse gas emissions

By KUBERAN HANSRAJH KUMARESAN and ADAM FARHAN for RIMBAWATCH

JULY 2023 marked the hottest month recorded in human history.

According to the Intergovernmental Panel on Climate Change (IPCC), current policies are likely to lead to a dangerous 3.2°C rise in global temperatures – more than double the 1.5°C target set by the Paris Agreement.

In Malaysia, where many livelihoods rest upon climate-dependent industries, the gap between national environmental policies and global climate mitigation is particularly troubling.

This gap is further widened by weaknesses in Malaysia's Environmental Impact Assessment (EIA) process, which among other things, fails to adequately address the greenhouse gas emissions from projects contributing to climate change.

What is an EIA?

An EIA is meant to identify, for the benefit of both the planning authority and the public that are affected, the impacts a project has on the environment.

In Malaysia, the process of conducting an EIA is governed primarily by Section 34A of the Environmental Quality Act (EQA) and the guidelines the director-general makes pursuant to his powers under the said Act, such as the 2016 EIA Guidelines.

It is noteworthy that guidelines of this nature are, according to the Court of Appeal in the Kajing Tubek case, non-binding.

Lacking GHG emissions requirements

While there is a requirement for a Malaysian EIA to consider a project's "likely impact" on the "environment", the EQA gives no indication as to what type of environmental impacts (for example, Scope 3 emissions) require consideration; what this means is that developers can often get away with omitting consideration of a number of crucial environmental impacts.

In particular, there is no specific requirement in the EQA or in any other legislation to consider full lifecycle greenhouse gas (GHG) emissions in the mitigation measures proposed in EIAs.

This is in contrast to EIA processes in other jurisdictions, such as the European Union, where their EIA Directive establishes that European countries must conduct their EIAs with explicit reference to a project's GHG emissions.

Yet, in Malaysia, there is no requirement to consider GHGs, or any thresholds to establish the limits on how much GHG a project can or should emit based on Malaysia's remaining carbon budget.

This is evident in several EIAs for climate-risk projects reviewed by RimbaWatch, where there is only partial disclosure of expected GHG emissions, and no GHG mitigation measures are proposed.

Need to mitigate climate change

The omission of GHG emissions from the EIA process is an oversight that exacerbates Malaysia's misalignment with global climate goals.

There is an urgent need to mitigate climate change while recognising the principle of common but differentiated responsibilities, which acknowledges that different countries have varying capacities and responsibilities in tackling climate change.

As the largest exporter of liquefied fossil gas in Asia, a product which is one of the world's highest-emitting fuel sources, Malaysia is a significant emitter on the global stage.

Exemplifying this, Malaysia's national oil and gas company is listed in the latest Carbon Majors database as being the 24th highest emitting company in the world based on its emissions since the Paris Agreement.

Taking the energy sector as an example, the RimbaWatch Future Emissions Database reveals at least 67 proposed fossil fuel projects in the country, each projected to contribute millions of tonnes of carbon lock-in.

For instance, the Rosmari-Marjoram field, which received EIA approval in 2022, will allow the extraction of 800 million standard cubic feet of fossil gas per day for the next 20 years.

This project alone is expected to generate 20 million tonnes of GHG emissions annually—equivalent to the annual emissions of entire countries, such as Lithuania.

Over its lifespan, this development could release a staggering 157 million tonnes of planet-warming GHGs.

This stark reality highlights the need for a robust EIA framework, one which includes GHG emissions, that aligns Malaysian policy with global climate objectives.

Call for enhanced EIAs

As made clear by a recent Global Energy Monitor report, fossil fuel expansion in Malaysia threatens global efforts to limit warming to 1.5°C; echoing the IPCC's warning that any further fossil fuel development is incompatible with a climate-safe future.

To avoid contributing to catastrophic climate change, Malaysia must adopt a whole-of-nation approach that aligns its domestic economic activities with global climate goals.

This requires updating key environmental legislation, like the EQA and its attendant provisions on EIAs, to reflect the latest climate science.

Malaysia can look to models like New South Wales, Australia and South Africa, where projects exceeding specific emissions thresholds are required to propose meaningful mitigation measures – or face rejection.

By strengthening its EIA framework, Malaysia has the opportunity to protect its environment and contribute to the global fight against climate change.

Leading the way in sustainable water management

Air Selangor is focused on proactive efforts and innovative approaches to water quality preservation

Through advanced technologies and a commitment to sustainability, Air Selangor is playing a pivotal role in preserving this life-giving resource for current and future generations.

WATER nourishes life, sustains ecosystems, and serves as a foundation for countless human innovations. Thus, preserving water is as important as financial planning for the future because it is a fundamental resource, just as money is essential for meeting future needs and emergencies.

Without clean and sufficient water, health, food security, and daily living are severely impacted. By saving water today, this precious resource is protected for future generations but also reduces environmental degradation and safeguard the ecosystems that are vital to our survival.

Recognising the immense importance of the "drop of life", Pengurusan Air Selangor Sdn Bhd (Air Selangor) is committed to preserving this life-giving resource for current and future generations.

Air Selangor chief executive officer Adam Saffian Ghazali says, "By leveraging advanced technologies and upholding a strong commitment to sustainability, we are dedicated to safeguarding this invaluable resource for both present and future generations.

"Serving over 9.62 million people in Selangor, Kuala Lumpur, and Putrajaya as the largest water services provider, we recognise that water is far more than a mere commodity—it is essential to sustaining life, empowering communities, and driving development. "

A temporary issue and its common causes

When water contains particles such as dirt, algae, or minerals, it can appear coloured because these particles disrupt the way light travels through the water. Air Selangor reassures consumers that the occurrence of coloured water is typically not a cause for concern.

While such issues can raise concerns about water quality and safety, it is important to understand the underlying causes. Treated water naturally contains minerals like iron and manganese, which are within the limits set by the National Drinking Water Quality Standards imposed by the Health Ministry. Over time, these minerals can form sediment that settles at the bottom of the pipes.

Changes in water flow – due to factors such as pipe repairs, leaks, or water supply redistribution – can disturb this sediment, causing it to resuspend and move with the water. This can temporarily make the water appear coloured.

However, this issue is generally short-lived. If consumers experience coloured water, they are advised to run the tap for a few minutes until the water clears. If the problem persists for more than five to 10 minutes, they may contact Air Selangor at 15300 for assistance.

Safeguarding water quality

Water quality is a priority for Air Selangor, especially in the densely populated areas of Selangor, Kuala Lumpur, and Putrajaya. As the region's primary water supplier, the company is committed to ensuring that its treated water remains clean, safe, and free from contaminants.

To address challenges like coloured water, it has implemented advanced measures to maintain high water quality standards.

To guarantee that the water supplied to consumers is always clean and safe, Air Selangor employs a robust system of monitoring and testing at every stage of water treatment and distribution.

Adam emphasises that Air Selangor takes a holistic, proactive approach to preserving water quality using a combination of scientific expertise, cutting-edge technology, and proactive monitoring.

One of the key methods used is the frequent sampling and analysis of water at its treatment plants. Water samples are analysed every two hours by a team of chemists and microbiologists. This continuous testing allows experts to detect any impurities or potential contaminants before the water is distributed to the public.

In addition, Air Selangor conducts in-site testing at 34 water treatment plants (WTPs) across the region, periodically sampling 500 water samples from various points in the distribution network.

Combined with laboratory analysis, this ensures continuous monitoring of water quality. If any irregularities are detected, Air Selangor can take immediate action to prevent contaminated water from reaching consumers.

To further enhance its capabilities, Air Selangor has introduced a mobile laboratory equipped to perform preliminary water quality tests directly at water sources or water treatment plants.

This allows the company to quickly identify potential water quality issues and respond without delay. If further analysis is needed, the samples are then sent to regional laboratories for more comprehensive testing.

Water quality monitoring is not limited to detecting known pollutants. Air Selangor is also proactive in addressing emerging contaminants that pose new challenges to water treatment. These include pharmaceutical residues, per- and polyfluoroalkyl substances (PFAS), and other newly identified pollutants that are often more difficult to detect and remove using traditional water treatment methods.

Recognising the risks posed by such contaminants, Air Selangor regularly tests for emerging contaminants at its water treatment plants and throughout the distribution system, using advanced technologies to detect and manage new risks promptly.

As climate change, urbanisation, and industrial activities continue to put pressure on water resources, Air Selangor's rigorous approach to water quality preservation is more important than ever.

Adam emphasises that Air Selangor takes a holistic, proactive approach to preserving water quality using a combination of scientific expertise, cutting-edge tech-

nology, and proactive monitoring.

"By combining advanced testing technologies, mobile laboratories, and continuous monitoring, we address both traditional and emerging water quality challenges. This commitment ensures that the water supplied remains clean, safe, and reliable," he says.

Adam adds that in 2023, Air Selangor achieved an outstanding milestone, recording 99.93% compliance with the Ministry of Health Malaysia's (KKM) National Standard for Drinking Water Quality (NSDWQ) and 100% compliance with the Quality Assurance Programme (QAP).

The Drinking Water Quality Standard (DWQS), based on guidelines from the World Health Organization (WHO), is widely adopted in countries such as Singapore, Japan, and Australia.

In line with its vision to become a leading water services provider in Asia by 2030, Air Selangor continues to prioritise sustainability by ensuring safe, clean, and reliable treated water for current and future generations.

Maximising customer experience

Air Selangor, serving a vast consumer base, recognises the need for efficient customer service to address the high volume of feedback and inquiries it receives. Traditional methods like hotlines and counter services are no longer sufficient

This has led the company to launch multiple channels, including its website, app, call centres, social media, customer service counters, and self-service kiosks, to offer quick and convenient ways for consumers to provide feedback and resolve issues.

To ensure timely responses, Air Selangor aims to resolve cases efficiently and sends SMS notifications to consumers once issues are addressed.

The company's app, which has been downloaded over five million times, receives thousands of inquiries, and the call centre handles over a million calls annually.

Additionally, Air Selangor's social media platforms including Facebook, X (formerly Twitter), and Instagram, serve as key communication tools with consumers.

Through these efforts, Air Selangor strives to maintain strong communication, minimise service disruptions, and provide an exceptional customer experience.

Air Selangor has achieved another significant milestone in 2023 by obtaining the ISO 18295-2:2017 certification for its contact centre. This certification reinforces the company's commitment to improving customer service management, ensuring that it meets and exceeds consumer expectations.

The ISO 18295 specifies requirements and guides in-house and outsourced customer contact centres. The standard applies for any customer interaction with a customer contact centre.

As a company that takes pride in enhancing employee performance and improving customer support, Air Selangor tailors its approach to better equip its employees to provide more personalised, efficient service, leading to a higher level of customer satisfaction. It conducts physical engagement activities through its customer outreach programme, fostering stronger, long-term relationships with consumers.

It also streamlines complaints and feedback systems to include multiple channels that enables customers to submit inquiries, track the progress of submissions, and resolve issues related to water bills, metres, and other water supply services.

With these initiatives, Air Selangor is continually raising the bar for customer experience, ensuring that it meets the evolving needs of consumers and enhances the delivery of water supply services.

Collaborating for change

Engaging the wider community in reducing non-revenue water (NRW) is an important factor in preserving and conserving water. Air Selangor recognises its importance and has made significant strides with its recent initiatives—one of which is the Leak Reporting Campaign that was launched in August last year.

This campaign encourages both consumers and staff to report any leaks—whether they be pipe leaks, bursts, meter leaks, or suspected illegal water tapping—using the newly added "Report Leaks" feature in the Air Selangor app.

By introducing this feature and campaign, Air Selangor can quickly identify and address leaks to minimise water resource losses and promote a more sustainable use of water.

Moving forward

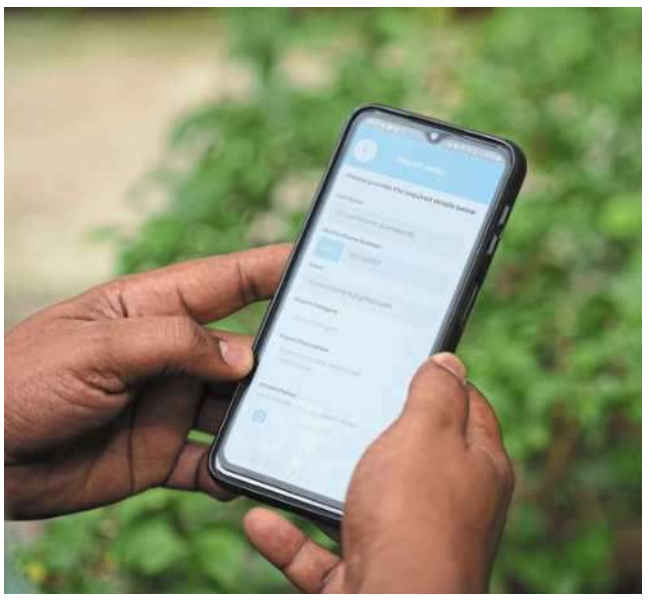
Guided by its vision to be a leading water services provider in Asia, Air Selangor focuses on providing efficient and affordable solutions that prioritise customer satisfaction, while maintaining a strong emphasis on sustainability and innovation.

At the heart of Air Selangor's mission is the adoption of sustainable practices to ensure long-term water security for future generations. The organisation leverages cutting-edge technology and innovative solutions to enhance operational efficiency and service delivery.

Beyond its core operations, Air Selangor is deeply committed to supporting the community and protecting the environment through responsible water resource management to create positive impact for stakeholders and the ecosystem alike.

"As global challenges such as climate change and water scarcity continue to rise, we are reminded of the critical importance of preserving and respecting this vital resource. Every drop counts, and every drop has the potential to make a difference," says Adam.

To learn more about how Air Selangor is preserving water and enhancing service quality, visit the official website at https://www.airselangor.com/.



Air Selangor relies on the public's help to quickly identify and address water-related issues to minimise water resource losses and promote a more sustainable use of water.

Air Selangor strives to maintain strong communication, minimise service disruptions, and provide an exceptional customer experience.

Air Selangor conducts regular water sampling and analysis at its treatment plants, with samples tested every two hours by a team of chemists and microbiologists to identify and address any impurities or contaminants before the water is distributed to the public.

Transitioning to a circular fashion economy in Malaysia

Malaysia's fashion industry has the potential to greatly contribute to the circular economy through recycling, eco-friendly production, and consumer awareness

THE fashion industry is one of the most resource-intensive sectors, significantly contributing to environmental degradation through greenhouse gas emissions, wastewater generation, and solid waste. According to the UN Environment Programme (UNEP), it is the second-largest consumer of water and accounts for 2% to 8% of global carbon emissions.

In Malaysia, the issue is intensifying with the rise of fast fashion, leading to increased textile waste and unsustainable production practices. As awareness of the environmental and social impacts of consumption grows, the circular economy model has gained momentum as a solution, aiming to eliminate waste, extend product lifecycles, and promote greater sustainability.

Malaysia faces significant challenges related to fashion waste. In 2021, fabric waste accounted for 31% (or 432,901 metric tonnes) of the country's total waste, according to SWCorp and KlothCares.

The production of textiles places immense pressure on natural resources, with cotton farming requiring vast amounts of water and dyeing processes using toxic chemicals. Additionally, Malaysia's waste management infrastructure is not fully equipped to handle the growing volumes of textile waste, resulting in most of it being sent to landfills, which contributes to further pollution.

Unlocking sustainable potential

The shift towards a circular economy in Malaysia's fashion industry opens up several promising opportunities. One such opportunity is the growing demand for eco-friendly and ethically produced clothing. Local designers and manufacturers can capitalise on this trend by adopting sustainable practices, such as using organic materials and implementing dyeing techniques that minimise water and chemical use.

Additionally, there is a rising interest in textile recycling, with startups in Malaysia developing innovative solutions for sorting and repurposing used clothing, thus helping to reduce waste and create new resources from discarded textiles.

Another promising area is the expansion of second-hand and resale markets. Thrift stores and online platforms for clothing swaps are gaining popularity, providing a sustainable alternative to fast fashion by extending the lifespan of garments and reducing the demand for new products.

Low King Hserng
Co-chair technical and research committee Waste Management Association of Malaysia (WMAM)

Furthermore, prioritising local production offers significant environmental benefits by minimising the carbon footprint associated with transportation and promoting "Made in Malaysia" products. This not only supports local businesses but also contributes to the reduction of emissions, making it a key strategy for creating a more sustainable fashion industry.

Fashion waste is the second-largest consumer of water and accounts for 2% to 8% of global carbon emissions. - 123rf

Conquering obstacles

The transition to a circular economy in Malaysia's fashion industry faces several challenges that need to be addressed. One of the key obstacles is the prevailing fast fashion culture, which prioritises low-cost, disposable clothing. This mindset remains a significant barrier to sustainability, and changing it requires widespread education on the value of durability and environmentally conscious consumption. Encouraging consumers to choose quality over quantity is essential to shift the market towards more sustainable practices.

Malaysia's textile waste management infrastructure is still underdeveloped, making efficient recycling systems difficult to implement. Establishing effective recycling solutions requires substantial investments and clear policies to ensure long-term success.

Another challenge lies in the cost of sustainable materials, which are often more expensive to produce. This price difference creates difficulties for small businesses trying to compete with larger mass-market retailers that prioritise low prices, making it harder for sustainable fashion to gain a foothold in the mainstream market.

Impactful initiatives

Despite the challenges, several successful initiatives in Malaysia are driving the shift toward sustainable fashion and circular economy practices. One notable example is the rise of sustainable fashion brands like Batik Boutique and Kualesa.

Batik Boutique combines eco-friendly practices with traditional batik techniques to create handmade products, empowering local artisans while reducing environmental impact. Similarly, Kualesa promotes bamboo-based apparel, which is known for its comfort, durability, and minimal environmental footprint.

In the realm of upcycling, companies like Kanoe and Biji-Biji Initiative are transforming discarded materials into higher-value products. Kanoe upcycles fabrics into handmade clothing, while Biji-Biji repurposes materials such as seat belts and textiles to create innovative products that reduce waste and promote creative reuse.

Recycling initiatives are also gaining traction in Malaysia. Fashion e-commerce platform Zalora has launched programmes encouraging customers to donate unwanted clothes for recycling. Meanwhile, global retailers like H&M and Uniqlo are running garment collection programmes – H&M's Garment Collection Program and Uniqlo's Re.Uniqlo initiative – both of which collect used clothing for recycling or redistribution.

The demand for second-hand fashion is also on the rise, with online platforms like Carousell and Shopee gaining popularity as consumers seek affordable and sustainable alternatives to fast fashion. Local thrift stores are thriving as well, offering more options for customers looking to reduce their environmental impact through conscious consumption.

Partnership fosters progress

Promoting circular practices in Malaysia's fashion industry requires a collaborative effort from the government, businesses, and consumers. The government can make a significant impact by implementing policies such as tax incentives for sustainable practices, funding recycling programmes, and developing infrastructure for textile waste management.

Additionally, government procurement policies can prioritise sustainable fashion, setting an example for the industry.

Fashion businesses also have a crucial role to play by adopting sustainable practices throughout their supply chains, including sourcing eco-friendly materials and designing products for longevity and recyclability. Embracing circular business models, such as clothing rental or repair services, can further promote sustainability.

Consumers, too, can drive change by supporting brands committed to sustainability, purchasing second-hand items, and taking better care of their clothes. Educating consumers on the environmental impact of their purchasing choices is essential for fostering responsible consumption and advancing the circular economy.

Transitioning to a circular fashion economy in Malaysia presents an opportunity to reduce environmental impact, conserve resources, and create a sustainable fashion industry. By addressing challenges like waste, overproduction, and unsustainable consumption, Malaysia can set an example for other nations in South-East Asia. Collaboration between the government, businesses, and consumers will be key to shifting towards sustainability and building a more resilient, circular economy for the future.

ESG and the next gen: What's mindful, what works

By MALAR ODAYAPPAN

ORGANISATIONS are recognising the importance of integrating ESG principles into their strategy and operations, driven by regulatory requirements, investor pressure and societal expectations.

As the demand for green jobs and ESG expertise continues to grow exponentially, businesses acknowledge the significance of attracting and engaging the next generation of employees in ESG roles.

There are meaningful opportunities for the next generation to make an impact in roles as varied as sustainability analysts, climate risk analysts and carbon management analysts.

Various studies have shown that the next generation workforce comprising Generation Z and millennials value environmental sustainability, social consciousness, as well as a sense of purpose in their work.

Being more mindful about making an impact and searching for value than the generations before them, they are drawn to companies that are committed to environmental, social and governance (ESG) principles, including sustainable practices, social impact and ethical governance.

When it comes to workplace preferences, the new generation values flexibility, work-life balance and opportunities for continuous learning and development.

These values are deeply rooted in family upbringing.

Making ESG roles attractive

As businesses adapt to meeting the growing demand for ESG roles, leaders should cultivate a positive culture by encouraging collaboration, offering education opportunities and empowering sustainability champions throughout the organisation.

They need to ensure that their corporate values genuinely reflect a commitment to ESG principles.

This should be evident in the company's operations (including ESG considerations in procurement policies), culture (encouraging the next gen to share their views openly in meetings), and strategic goals (committing a substantial portion of investment to ESG-efficient infrastructure).

In parallel, they should prioritise ethical business practices such as working with suppliers that adhere to environmental and social standards.

It is encouraging to observe a leading outdoor apparel company making significant strides in attracting young professionals by embedding environmental sustainability and social inclusivity into its core values and business practices.

Given that the apparel industry contributes up to 6.7% of global greenhouse gas emissions, valuable lessons can be learnt from this company's approach.

Its sustainability practices not only resonated with consumers but also appealed to a younger workforce as evidenced by the various accolades it has received for its efforts in sustainability and corporate responsibility.

The next generation workforce is adept at discerning genuine initiatives from greenwashing.

A 2022 research from Edelman showed that 70% of Gen Zs will always fact check what brands say and will unfollow them if they're not truthful.

Companies should be transparent in communicating their ESG goals, achievements, and ongoing efforts, including timely progress updates.

Beyond sustainability reports, social media campaigns and company websites, there is value in showcasing success stories and highlighting the tangible impact of ESG initiatives to build trust and appeal to young professionals who are seeking purpose in their careers.

Valuable employee experience

Attracting young professionals is only half the battle; businesses must also engage and work to retain them.

To support young professionals who are keen on continuous learning and development, businesses can offer them a path for upskilling.

This can be via ESG-focused training programmes, workshops and certifications, both through curated in-house training or partnering with external training providers or educational institutions to provide specialised ESG courses.

On the technical and vocational education and training (TVET) front, a number of institutions have begun introducing sustainability courses in their programmes, aligning with market needs and providing companies with a pool of industry-ready talent to tap into.

In engaging the next generation workforce, other areas of collaboration include building partnerships with non-governmental organisations (NGOs), government agencies and other organisations to provide young professionals with diverse experiences such as secondment or volunteer opportunities.

Moreover, participating in business-related forums and networks can help companies and their employees stay updated on best practices and emerging ESG trends.

Mentorship programmes can also be highly effective. Experienced leaders can guide and inspire the next generation, sharing their knowledge and expertise in ESG practices.

Malar Odayappan is the Social Impact, Sustainability and Climate Change director for PwC Malaysia.

Additionally, offering leadership opportunities and clear career progression paths in ESG roles can motivate young professionals to grow within the company, helping with retention and contributing to the continuity of ESG initiatives.

For the next generation workforce, being able to see the direct impact of their work is important beyond financial rewards like awards and bonuses.

Businesses can create opportunities for young professionals to engage in ESG projects and initiatives.

This could include creating advisory boards where young professionals serve as participants, nurture their leadership skills and champion the interests of their peers in sustainability projects as well as corporate responsibility (CR) programmes.

It is heartening to observe a number of market-leading brands engaging Gen Zs in sharing their perspectives on sustainability or providing input on how to address the concerns of their demographic.

Technology and innovation are powerful tools for engaging the next generation in ESG roles.

Digital platforms such as social media, virtual collaboration spaces and webinars offer businesses opportunities to network and look for future ESG talent.

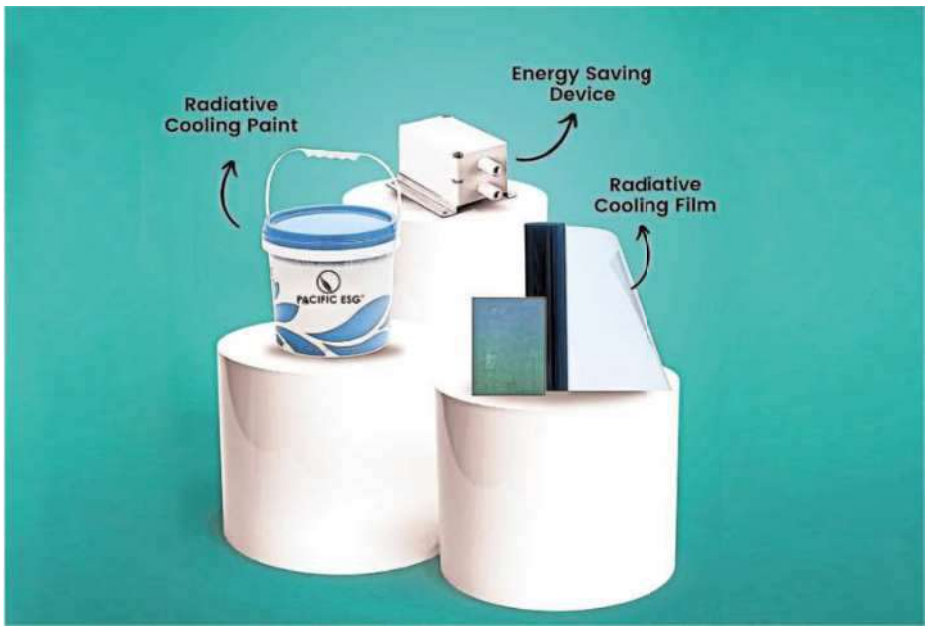
Additionally, adopting innovative ESG solutions can be an avenue to attract young professionals interested in green technology, encouraging new ideas and fostering a sense of ownership.

Businesses can leverage incentives announced by the government to invest in renewable energy, sustainable supply chains, and smart technology to enhance their ESG initiatives.

Conclusion

Attracting and involving the next generation in ESG positions requires a multifaceted approach that aligns corporate values with ESG principles.

By understanding the values and drive of the next generation workforce, businesses can create a dynamic environment that fosters participation and innovation, leading to a more engaged workforce and sustained societal outcomes.



Pacific ESG's energy efficiency solutions. We focus on providing comprehensive, solution-centric offerings to address the unique sustainability needs of businesses.

The Energy Efficiency Imperative: Securing a Sustainable Future Under New Regulations

Pacific ESG empowers businesses with sustainable energy solutions

THE call for businesses to adopt greener operations is becoming increasingly urgent as Malaysia continues its march to a net-zero carbon emission future.

Shareholders and customers are becoming more sophisticated and discerning, meaning that corporate entities will need to cater to not only their needs but the needs of the world at large.

It is with this in mind that Pacific ESG was created, to empower businesses and communities with Energy Efficiency (EE) solutions to achieve Sustainable Development Goals (SDGs).

At a time where the market is saturated with renewable energy products such as solar PV systems, Pacific ESG stands out among the crowd by offering energy efficiency solutions to enrich the sustainability landscape.

These include Radiative Cooling Paints, a revolutionary Energy-Saving Device (ESDs) and a Radiative Cooling Film as solutions for practical and effective ways to reduce energy consumption and environmental impact.

As a leading provider of sustainable solutions, Pacific ESG, through its services, is committed to help clients achieve six out of the 17 SDGs that are adopted by all United Nations members.

At its heart is the desire to drive positive environmental and climate impact, by reducing carbon footprints and optimising energy consumption.

Preach and practise

Since its inception, Pacific ESG has always been an active participant in the net-zero carbon goal, reducing carbon footprint across all aspects of its operation.

Pacific ESG is confident that the radiative cooling film will address the increasing demand for sustainable solutions in the office building sector.

"We see energy conservation as a pathway to more than just savings – it's about creating forward-looking assets that appeal to conscious consumers and establish lasting value in a competitive market," said Pacific ESG Director, Simon Shek, adding that the company's commitment creates sustainable environments and enhances long-term value and desirability of its energy efficiency solutions.

Underlining these efforts are the sustainability certificates and awards accredited to Pacific ESG, most notably the MYHIJAU mark.

This is Malaysia's official green recognition scheme endorsed by the government, bringing together certified products and services that meet local and international environmental standards under one single mark.

In essence, the impressive consolidation of the many local and international environmental standards Highlight Pacific ESG's strong commitment towards sustainability, as well as products that third-party tested and certified to be effective and safe.

Recently, the company also participated in the International Greentech & Eco Products Exhibition and Conference Malaysia (IGEM) 2024 exhibition in Kuala Lumpur – South-East Asia's largest leading trade event for green technologies and eco-solutions.

It was a golden opportunity for Pacific ESG to showcase its innovative energy-saving solutions. Many visitors were intrigued by the potential of these solutions to seamlessly integrate into their operations.

Pacific ESG delivered a comprehensive Energy Efficiency Solution for Wang Zheng Berhad's entire office building with innovative radiative cooling film technology.

Recently, the company applied its radiative cooling film onto the windows of client Wang Zheng Bhd's whole office building, yielding very encouraging results.

This innovative material helps cooling by harnessing cutting-edge technology to efficiently reflect and refract light and heat, while also achieving up to 94% mid-infrared emissivity, which is unique compared to others.

It lowered the indoor temperature of buildings all through electricity-free cooling, which leads to substantial energy savings on air conditioning.

At the same time, the aesthetic appeal of Wang Zheng Bhd's building is maintained without putting up shawls and cardboard onto window blinds anymore.

Pacific ESG's participation at the ENERtec Asia 2024 also marks a significant milestone as it provides the company much-needed exposure on the global stage.

The numerous positive feedback and interest generated during the event showed that Pacific ESG is on the right track in introducing these innovative technologies and solutions.

To better elucidate the green impact it has brought to the industry, several case studies comprising past and current clients need to be mentioned.

Simon Shek, Director of Pacific ESG: "We envision a world where businesses seamlessly integrate smart energy solutions."

Shuen: "Pacific ESG's commitment creates sustainable environments and enhances long-term value and desirability of our properties."

Trio of energy-saving solutions

True energy savings is when energy is not consumed in the first place.

This ties back Pacific ESG's revolutionary radiative cooling paint and film that provide "electricity-free cooling" for clients.

The specialised cooling paint reflects up to 95% of visible light, 15% more than the average paint on the market.

This is among the unique features that gets Pacific ESG's clients coming back for more.

Also, Pacific ESG's cooling paint and film reflect heat outward in the mid-infrared range with emissivity of over 95%.

This translates to a reduction of up to 3-5°C in indoor ambient temperature and up to 20-30°C for external surface temperature.

Yet, Pacific ESG is already looking ahead, driving continuous innovation to deliver better and greener sustainable solutions.

"We not only mitigate risks and enhance resilience but also pave the way for a more sustainable and prosperous future for generations to come," said Pacific ESG Director Shuen Wai Hung.

Sustainability under new regulations

A prominent steel company was thrilled to record energy savings of 13.22% four weeks after installing a revolutionary product by Pacific ESG called the Energy Saving Device (ESD).

ESD leverages minerals with dielectric properties to increase electron density and conductivity. It enhances electric current flow to promote 7-15% electricity savings.

Another client, MAHA Chemicals Sdn Bhd, achieved an impressive 8.93% energy savings just 18 days after installing the ESD, highlighting the effectiveness of the solution.

Topping this record is another client that charted a monumental 11% energy savings under five weeks after implementing the product.

These successes are salient testimonies towards Pacific ESG's vision to be the leader in providing energy efficiency solutions that revolutionise the way organisations manage and optimise their energy resources in Malaysia.

"We envision a world where businesses seamlessly integrate smart energy solutions to enhance operational efficiency, reduce costs and contribute significantly to the global transition towards a low-carbon and sustainable energy ecosystem," said Shuen.

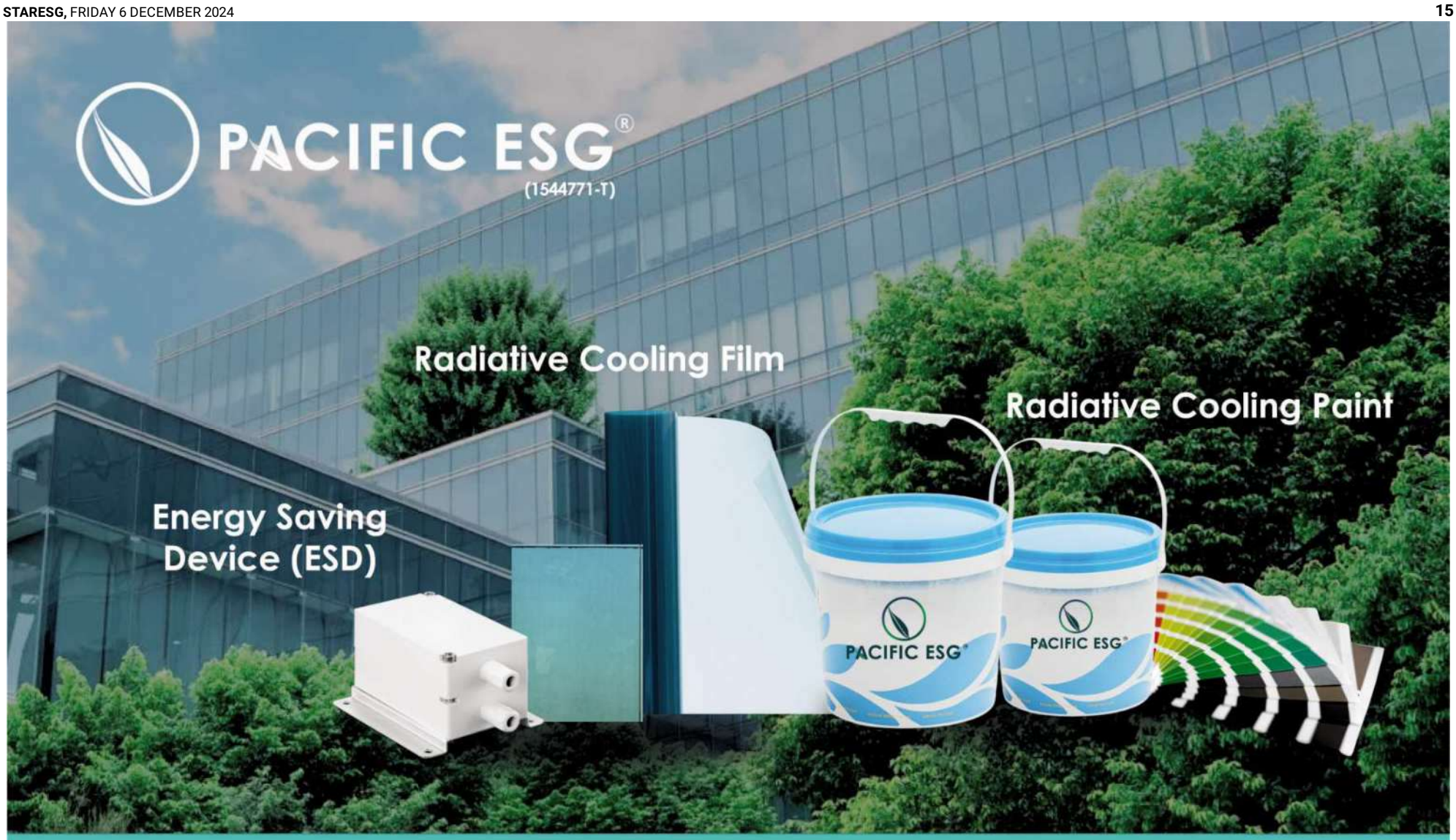
This is crucial, as the Budget 2025 announced a carbon tax on the iron, steel and energy sector that is likely to arrive in 2026. Safe to say, Pacific ESG's clients will be ready for it.

Furthermore, the Energy Efficiency and Conservation Act (EECA) will be enforced on Jan 1 next year and is aimed at regulating energy consumption and promoting energy conservation across various sectors.

Sustainability is the name of the future, and businesses that do not uphold this key value will be left behind.

Such a future is achievable with energy-efficient solutions from Pacific ESG.

To discover how these solutions can be incorporated into your operations visit www.pesg.net



Pacific ESG: Accelerating Sustainability Through Energy Efficiency

As the world accelerates toward a sustainable future, energy efficiency emerges as the fastest and most impactful path to success. Whether you are a homeowner, business leader, or policymaker, adopting energy-efficient solutions not only significantly reduces your carbon footprint but also drives down energy costs.

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Empowering sustainability leaders

A competency framework to drive corporate responsibility

By UN Global Network Malaysia & Brunei

BURSA Malaysia Berhad (Bursa Malaysia) and the UN Global Compact Network Malaysia & Brunei (UNGCMYB) jointly developed the Corporate Sustainability Practitioner (CSP) Competency Framework on Oct 28.

Referred to as CSP 2.0, it serves to support credentials building of practitioners and professionals involved in Malaysia's corporate sustainability space, with the aim to raise the professional standards of corporate sustainability practitioners in Malaysia.

UNGCMYB shared with StarESG on how the framework supports sustainability practitioners, leaders, and talents across all organisational levels – entry-level, mid-level and senior-level.

(From left) UNGCMYB executive director Faroze Nadar, Dewan Rakyat Speaker Tan Sri Johari Abdul and Bursa Malaysia Group Sustainability director Dr Ahmad Hezri Adnan, during the launch of the CSP 2.0 by Bursa Malaysia and UNGCMYB.

Who can use the CSP 2.0

As sustainability is a shared responsibility, this comprehensive framework enables individuals, regardless of their primary roles, to build essential competencies that foster cross-disciplinary collaboration and strategic alignment.

It serves as a definitive guide for organisations and practitioners by establishing clear performance expectations and competencies necessary for integrating sustainability into operations across sectors and industries.

It can function as a roadmap to identify skill gaps, set performance benchmarks, and implement structured development plans, ensuring professionals at all levels are equipped to meet the demands of sustainability.

For entry-level practitioners, the framework establishes foundational competencies that focus on building awareness and understanding of sustainability principles.

At the mid-level, it advances strategic thinking and implementation capabilities, empowering practitioners to lead impactful sustainability initiatives effectively.

For senior-level professionals, it outlines the leadership competencies for shaping and influencing sustainability governance, ensuring that organisational strategies align with broader stakeholder expectations and global sustainability goals.

By providing a clear and structured competency model, CSP 2.0 raises professional standards and also acts as a catalyst for cultivating a skilled workforce that can champion transformative change.

Critical skill development, innovative thinking and leadership qualities essential for navigating the complexities of sustainability are emphasised.

This approach fosters talent capable of bridging operational gaps, breaking down silos, and driving cross-industry collaboration.

Talent development becomes a holistic process that creates new job opportunities, enhances career growth, and improves the quality of life for all.

The framework positions sustainability as a business priority – a key driver of innovation, organisational resilience and societal well-being.

CSP 2.0 ensures that individuals across all levels are prepared to meet current sustainability challenges while anticipating future needs.

By fostering the right talent, the framework equips organisations to build resilient, forward-thinking teams to advance Malaysia's sustainability agenda.

These practitioners become proactive change agents, driving progress and delivering a lasting impact on businesses, communities and the environment.

Who benefits from using CSP 2.0

The CSP 2.0 is a transformative tool designed to benefit organisations across sectors, particularly those aiming to embed sustainability into their operational fabric, leadership strategies and various job functions.

By applying to disciplines beyond traditional sustainability roles, such as

operations, finance and marketing, the framework ensures a comprehensive and inclusive approach to fostering sustainability.

Companies of all sizes can leverage it to tailor sustainability functions that align seamlessly with their unique operating environments and corporate DNA.

This flexibility enables businesses to demonstrate a "tone at the top," cascading sustainability priorities from senior leadership to every level of management.

At its core, the CSP 2.0 serves as a definitive guide, outlining the skills and competencies needed for practitioners to navigate the complex corporate sustainability ecosystem effectively.

By providing clarity on the expectations for sustainability roles, it empowers organisations to foster a culture where ESG principles are understood and operationalised.

For leadership teams, the framework offers strategic value by providing a structured roadmap to assess and develop the competencies required to drive sustainable outcomes.

It helps identify performance standards and pinpoint existing gaps in skills, knowledge or willingness in team members.

Such insights enable organisations to implement targeted training and development initiatives to bridge these gaps.

The framework also aligns sustainability efforts with broader business goals by equipping leadership teams with tools to inspire meaningful change, while achieving measurable results.

By fostering a structured approach to competency-building, it ensures that organisations meet compliance requirements but actively create value through sustainable practices.

CSP 2.0 key competencies

CSP 2.0 is built on a dynamic and progressive competency model that addresses the shifting demands of the corporate sustainability landscape.

Central to the framework are five proficiency levels for each sub-competency, based on Bloom's Taxonomy.

This tiered approach offers organisations a structured pathway to assess, develop and enhance their workforce's capabilities, enabling them to achieve higher levels of expertise in sustainability practices effectively.

Drawing inspiration from the Learning Leader Competency Model, CSP 2.0 outlines six critical leadership competencies: managing essential processes and resources, inspiring people, building social networks and partnerships, achieving personal mastery, and governing organisational performance.

Together, they empower leaders to seamlessly integrate sustainability into their governance structures and operational strategies, driving transformative change across their organisations.

To remain relevant, the framework is designed to be periodically updated. This adaptability ensures it reflects emerging best practices, innovative learning approaches, and evolving stakeholder expectations.

Organisations are encouraged to use the framework to conduct regular self-assessments, to stay aligned with global trends and proactively address new challenges in the sustainability domain.

CSP 2.0 bridges current practices with future expectations, positioning itself as a forward-looking tool for navigating the complexities of corporate sustainability.

It equips leaders and practitioners with the knowledge and skills needed to design and implement impactful, long-term initiatives while maintaining agility in the face of emerging global priorities.

Its comprehensive approach defines competencies that are essential for success and fosters continuous improvement.

Doing so also prepares organisations to meet the demands of an evolving sustainability landscape in confidence and with a sense of purpose.

The framework also highlights seven core competencies tailored to different roles within an organisation:

- for **senior executives**, the framework emphasises strategic leadership by focusing on driving sustainability governance, securing resources, and earning stakeholder trust.
- **sustainability managers** will be equipped to implement initiatives, manage departmental performance, and foster cross-functional collaboration.
- **entry-level practitioners** can concentrate on executing sustainability programmes, monitoring and reporting performance, and building a strong foundation of knowledge.

Each competency is designed to reflect the evolving corporate sustainability landscape, blending technical expertise with personal mastery.

This ensures that practitioners at all levels are not only effective in their roles but also serve as credible and trustworthy advocates for sustainability within their organisations.

As the framework's dynamic structure is based on the Bloom's Taxonomy, it promotes continuous professional development.

With its five proficiency levels, it allows individuals and organisations to progressively enhance their capabilities while conducting regular self-assessments.

This ensures that they remain agile and well-prepared to adapt to the ever-changing priorities and challenges in global sustainability efforts.

Where CSP 2.0 has most impact

CSP 2.0 aims to create an immediate and transformative impact by operationalising sustainability across industries, enabling businesses to meet the growing demand for sustainable practices in a competitive global market.

In the current landscape, sustainability considerations are emerging as critical benchmarks for trade, rivalling traditional parameters such as price and quality.

To stay relevant and competitive, businesses must now integrate ESG sustainability into their core operations.

This shift necessitates a robust framework that clearly defines the skills and competencies required for sustainability practitioners to effectively drive change within their organisations.

It addresses this need by offering a structured roadmap that supports the creation of tailored sustainability functions across sectors and industries.

It acknowledges the diverse operational environments of Malaysian companies, enabling them to adopt approaches that align with their unique organisational DNA.

By embedding sustainability into governance, strategy and value chains, the framework empowers organisations to achieve tangible outcomes that align with global sustainability benchmarks.

The most immediate impact of the framework will likely be seen in sectors that are directly tied to trade, manufacturing and supply chains, where sustainability credentials are increasingly scrutinised by international stakeholders.

Industries such as palm oil, manufacturing, energy and retail are expected to benefit from its implementation, as they respond to mounting pressures from regulators, investors and consumers to demonstrate their commitment to sustainable practices.

Additionally, the framework's role in elevating the competencies of corporate sustainability practitioners will have a ripple effect across all levels of management.

By defining aspirational roles and equipping practitioners with the necessary tools, organisations will be able to foster a culture of accountability and innovation, ensuring sustainability is not just a compliance exercise but a driver of long-term value creation.

Finding support when implementing

To empower organisations and practitioners in adopting the CSP 2.0, a Digital Self-Assessment Tool has been developed as a cornerstone resource.

This tool offers a practical and user-friendly entry point for evaluating existing competencies and pinpointing areas for growth.

By identifying specific gaps, practitioners can address skill deficits that may hinder their effectiveness in sustainability roles and align their capabilities with evolving organisational demands.

Upon completing the self-assessment, users receive customised recommendations for learning materials, training modules, and resources tailored to their unique capacity-building needs.

This personalised approach ensures that both individuals and organisations can strategically enhance their sustainability competencies, fostering a culture of continuous professional development.

Accessible via Bursa Malaysia's Sustainability Portal (https://csp.bursasustain.bursamalaysia.com/login), the tool provides a seamless platform for practitioners to deepen their expertise and align their roles with broader sustainability goals.

By streamlining access to curated resources and actionable insights, it supports organisations in systematically embedding sustainability at every operational level.

Reasons for developing CSP 2.0

Malaysia's corporate landscape faces a growing need for sustainability leaders who can bridge strategic objectives with actionable outcomes.

Traditionally, businesses have grappled with challenges such as fragmented approaches to sustainability, unclear role definitions, and inconsistent governance practices.

The framework addresses a critical gap in the local ecosystem by defining clear, aspirational roles that enable organisations to effectively operationalise sustainability across diverse sectors and industries.

It provides a structured roadmap that aligns organisational goals with global sustainability benchmarks, empowering practitioners to act as change agents for responsible, future-ready businesses.

More importantly, the framework does not advocate a one-size-fits-all solution.

By recognising the diverse operational environments and unique DNAs of companies, it offers flexibility for organisations to tailor their sustainability functions in alignment with their strategic priorities.

Rather than prescribing a specific governance structure, it encourages companies to adopt practices that resonate with their culture, ensuring a strong "tone at the top" cascades through every layer of management.

By equipping sustainability practitioners with the competencies needed to navigate evolving demands, the CSP 2.0 strengthens the foundations of Malaysia's corporate sustainability ecosystem.

It establishes a shared language and benchmark for excellence, fostering a cohesive approach to embedding sustainability into business strategies, operations and decision-making processes.

Reasons for building competencies

In today's rapidly evolving landscape, sustainability is no longer an optional initiative – it is a vital driver of business resilience, innovation and long-term success.

The Covid-19 pandemic illuminated vulnerabilities across global systems, prompting governments, investors, and corporations to reassess their priorities.

ESG considerations have emerged as key factors in mitigating risks and seizing opportunities in this new era of business.

In Malaysia, regulatory frameworks such as the Malaysian Code of Corporate Governance (MCCG 2021) place significant emphasis on the roles of boards and senior management in addressing sustainability challenges.

However, achieving meaningful and lasting progress requires a commitment to building sustainability competencies across all levels of an organisation, from leadership to operational teams.

This ensures that sustainability is not siloed but becomes a shared responsibility across all disciplines and job functions.

It promotes accountability, as employees at all levels gain the knowledge and tools needed to align their actions with the company's sustainability goals.

It also enhances collaboration, bridging gaps between departments and creating a unified approach to ESG initiatives.

Embedding sustainability competencies across an organisation also drives value creation.

From enhancing resource efficiency and reducing operational costs to improving stakeholder trust and opening doors to new markets, companies that prioritise sustainability are better positioned to thrive in a competitive, ESG-driven global economy.

Investing in these competencies signals a strong tone from the top, while empowering teams at every level to contribute to sustainability objectives that are scalable, consistent and impactful.

From practitioners to change agents

The framework equips practitioners with the tools and insights needed to lead a transformation within their organisations.

By defining clear competency standards across various levels, it provides a structured pathway for building expertise in corporate sustainability.

Practitioners can align their initiatives with organisational goals, regulatory requirements and stakeholder expectations, making sustainability a core business driver.

Through targeted professional development and skills enhancement, it empowers leaders, talents and practitioners to bridge gaps in knowledge and adapt to the fast-evolving ESG landscape.

By fostering a culture of collaboration and inclusivity, it equips all employees with the tools to integrate sustainability into their daily responsibilities and decision-making processes.

They become strategic leaders who are inspired to champion initiatives that drive measurable environmental, social and economic impact.

It nurtures their capacity to engage stakeholders effectively, influence organisational culture, and deliver outcomes that resonate far beyond the bottom line.

To download an electronic version of the CSP 2.0, scan this QR code.

Stemming the tide in water loss

By ERIC QUAH
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WATER plays a crucial role in the creation and sustenance of life on Earth – the lifeblood of our planet.

It hydrates all living things, regulates the climate and, since the 18th century, has been a vital component in various industrial processes, from manufacturing to energy production.

With average rainfall of 2,000mm to 2,500mm per year, Malaysia is blessed with an abundance of water.

That perception has given us a skewed confidence in our water's security, as Malaysians consume more water than what the World Health Organization (WHO) recommends, which is just 160 litres per capita a day (LCD).

On average, domestic water consumption in 2023 in Selangor, Kuala Lumpur and Putrajaya hit 241 LCD, as reported in the Domestic Water Consumption report by National Water Services Commission (SPAN).

This should be compared with other countries that consume much less: Singapore consumes 151 LCD, Thailand uses 193 LCD and a large country like China only takes in 179 LCD (Source: Air Selangor Water Handbook).

The United Nations even noted that the country's availability of piped water in households is almost universal at 95.9% in 2019, with rural areas being at 84.7% as compared to 98.7% in urban areas.

In fact, the average domestic water consumption in Selangor, Kuala Lumpur and Putrajaya reached 241 litres per capita per day (LCD) in 2023, as reported in the Domestic Water Consumption report by the National Water Services Commission (SPAN).

But as can be seen in recent years, availability of potable water has become an issue, with drought and climate change causing river levels to drop in parts of Peninsular Malaysia.

Or the cases of river contamination that result in state-wide water cuts, thanks to unscrupulous industrial practices.

Some researchers foresee water security may become an issue in the near future as the population grows larger and more urbanised; as industrialisation and irrigated agriculture expand in size to accommodate the population boom.

Lost run-offs

One of the many problems that water services provider companies in developing countries face is non-revenue water (NRW), which is treated water that is "lost" before it reaches consumers.

The reasons could be as innocent as a pipe leak or pipe burst that was not reported to the nefarious, such as illegal piping and modifying or connecting water meters illegally.

Early this year (Jan 8) The Star reported that SPAN chairman Charles Santiago declared that NRW has to be resolved and proposed a RM10bil budget allocated to the water sector each year to protect the sources and upgrade infrastructure for the next three to four years.

The article indicated that NRW stood at 37.2% at the national level, with Johor and Penang having the lowest at 26.3% each, followed by Selangor at 27.8%.

As the largest water services provider in Malaysia, Air Selangor is responsible for the abstraction, treatment and distribution of treated water to 9.62 million consumers in Selangor, Kuala Lumpur and Putrajaya.

In conjunction with World Water Loss Day that takes place on Dec 4 every year, the water utility company stated that it has undertaken many initiatives to reduce NRW.

Beyond operational, the company believes that providing clean and safe treated water is priceless to its consumers and is committed to ensuring that the treated water in the system can be distributed without wastage.

Sustainable NRW reduction

Reducing NRW remains a top priority for Air Selangor despite the many challenges faced.

This is to ensure that all produced water reaches customers and is billed accurately. NRW has negative impacts on the customers and the businesses.

These losses can result from various factors such as leaks, pipe bursts, reservoir overflows (physical loss), meter inaccuracies, and water theft (commercial loss).

To address that, Air Selangor implemented NRW reduction in two separate categories: the Physical Loss Reduction strategies and the Commercial Loss Reduction.

Strategic NRW reduction programmes to reduce physical loss includes Active Leakage Control, District Metering Zones, technological interventions, pressure management, and pipe replacement.

To improve billing accuracy and address illegal tapping as part of the Commercial NRW Reduction Programme, Air Selangor will also replace degraded or malfunctioning consumer water meters.

This initiative is essential for ensuring accurate billing, enhancing customer satisfaction, and supporting better water management.

The effectiveness of these initiatives has led to the achievement of an average reduction of about 1% from 2017-2023, which translates to significant daily water savings of approximately 33 million litres per day, benefiting around 125,000 consumers daily.

Pipe replacement programme

Air Selangor has planned to continue enhancing existing infrastructure to reduce NRW from leakages in ageing pipelines.

This is distinct from its investments to ensure the stability and consistency of its water supply service levels.

These programmes are ongoing and will include doubling pipe replacement efforts, from 150km a year to 300km a year starting from 2024; and 400km from 2034 onwards.

Significant results

As of 2023, Air Selangor has managed to achieve the NRW level of 27.8%. This achievement has surpassed SPAN's NRW matching grant target of 28.5%.

Matching grants were allocated by the federal government, whereby a sum of RM1.371bil is apportioned to help water operators overcome the NRW issue more effectively and sustainably.

It has also achieved a pipe burst Index of 4.18 bursts per 100km per year of pipeline, an improvement from 5.35 bursts per 100km per year recorded in 2022.

Community involvement

The significant investments and global best practices have extended to community involvement, such as the Leak Reporting Campaign, where Air Selangor had repaired over 34,808 leaks from January to October 2024.

This campaign is open to the public with a T'nG e-Wallet credit incentive to encourage active and continuous participation from customers to report leakages via the Air Selangor mobile app.

This campaign aids the company in its commitment towards ensuring sustainable and efficient water distribution management for its customers.

Customers can easily report pipe leaks, burst pipes, meter leaks, or illegal pipe installations through the Air Selangor mobile app, which can be downloaded from either Apple App Store or Google Play.

Water security may become an issue in the near future as the population grows larger and more urbanised; as industrialisation and irrigated agriculture expand in size to accommodate the population boom.

Visit Air Selangor's website at www.airselangor.com/reportleaks-campaign/ for more information.

Discussion on the role of the board in an increasingly sustainable environment (from left to right) has Wu as moderator, with Thomas, Rejina and Joubert as panel speakers.

Sustainability guide for boards of directors launched

Climate action handbook applicable throughout South-East Asia

AS SOUTH-East Asia faces increasing vulnerability to both physical climate impacts and transition risks, such as evolving regulations and shifting market preferences and behaviours, it is critical for corporate boards to incorporate climate considerations into their decision-making processes. Home to over 685 million people (around 8.5% of the world's population), South-East Asia is projected to account for 6.5% of CO2 emissions by 2040.

The region faces threats of (and some areas have already witnessed) rising sea levels, increased heat waves, strengthened typhoons, extreme floods and droughts, and unprecedented weather events.

In addition, Asia could lose 14.9% of its GDP by 2050, significantly affecting livelihoods, with Indonesia, Malaysia, the Philippines, Singapore and Thailand potentially losing seven times their total economic output without ambitious climate action.

Conversely, achieving net-zero emissions by 2050 could boost the Asia-Pacific's GDP by 6.3% above projections and create up to 36.5 million additional jobs by the 2030s.

Recent commitments by countries in the South-East Asian region to achieve net-zero emissions and the growing integration of climate considerations into national policies reflect an urgent call for businesses to adapt swiftly.

The need for corporate boards to take decisive climate action has never been more critical.

With the growing adoption in South-East Asia of international reporting standards like those from the Task Force on Climate-Related Financial Disclosures (TCFD) and the International Sustainability Standards Board (ISSB), as well as the emergence of foreign regulations such as the EU's Corporate Sustainability Reporting Directive (CSRD) and Corporate Sustainability Due Diligence Directive (CS3D), companies are urged to improve transparency and develop comprehensive decarbonisation transition plans to meet their net zero objectives.

In response to these evolving reporting requirements and standards, corporate boards in South-East Asia play a pivotal role in navigating corporations through the challenges of climate change.

To assist them, environmental law charity ClientEarth launched the *Guide on Climate Action for Boards in Southeast Asia* on Nov 8, at the Institute of Corporate Directors Malaysia (ICDM) in Kuala Lumpur.

The guide, co-published by Climate Governance Malaysia (CGM) and Earth on Board, aims to provide corporate directors with insights to address the increasing complexity of climate-related legal risks, regulations and governance requirements within the region.

It provides corporate directors with a comprehensive framework for climate governance.

It also offers guidance on emerging legal risks, including litigation risk directors and corporations face regarding greenwashing and other climate-related liabilities, while outlining key regulatory and market shifts in South-East Asia's net-zero transition.

The launch opened with welcoming remarks by ICDM president and chief executive officer (CEO) Michele Kythe Lim, with keynote speakers from ClientEarth legal consultant Elizabeth Wu and its legal and policy researcher Kyoko Okuyama, as well as Cambridge Institute for Sustainability Leadership independent advisor and co-head tutor in Sustainable Finance Simon CY Wong.

"The guide highlights how climate leadership goes beyond regulatory compliance, it requires boards to set bold climate ambitions, engage meaningfully with stakeholders, and integrate sustainability into core business strategies," said chairperson and director Datin Seri Sunita Rajakumar of CGM.

"As interest in climate-related resolutions and litigations grows in South-East Asia, corporate boards must step up to drive change, to ensure a positive impact on the communities they serve."

Wu said, "In view of the urgency of the planetary crisis, this guide seeks to encourage robust climate leadership by directors when navigating climate challenges in South-East Asia.

She mentioned that by showcasing diverse regional examples, the guide aims to help directors translate climate ambitions into concrete action.

"Whether it's establishing effective governance structures, grappling with legal and litigation risks or developing transition plans, the guide provides boards with practical insights adaptable to their unique industry contexts to drive meaningful climate action within their organisation," she added.

A panel discussion was also held featuring former attorney general Tan Sri Tommy Thomas, Institutional Investors Council advisor Rejina Rahim and Earth on Board founder and CEO Philippe Joubert.

"At Earth on Board we defend the idea that 2015, with the adoption of the SDGs and the Paris Agreement, must be seen as a pivotal year in the area of boards' duties," said Joubert.

"Duties of care and diligence and responsibility toward the way and the content of what is reported externally by the company are now subject to a different scrutiny by society, and it is urgent that boards understand that this will challenge the way they must fulfil these duties. This guide is a tool to help the boards navigate these fundamental matters."

Thomas opined that from a legal standpoint, corporate directors in South-East Asia must exercise heightened vigilance in climate risk governance.

"As the regulatory landscape evolves, new aspects of director liability are emerging, positioning climate risk oversight as an essential element of directors' fiduciary duties — not merely an advisory responsibility," he said.

He added that companies that do not adequately consider and manage foreseeable climate risks, or those that cause harm through carbon-intensive operations that exacerbate the climate crisis, are increasingly facing legal action.

Drawing from off-the-record stakeholder interviews, the guide offers actionable steps, including embedding sustainability across board-level committees, establishing dedicated governance structures, assessing climate risks and opportunities, setting science-based climate ambitions, and ensuring alignment throughout the company's value chain.

CGM is the national chapter for the World Economic Forum's Climate Governance Initiative, while Earth on Board represents an ecosystem of sustainability actors dedicated to helping organisations achieve an earth-competent board; where board members are proficient in sustainability.

ClientEarth is a non-profit environmental organisation that uses the law to create systemic change that protects the Earth for – and with – its inhabitants.

The Guide on Climate Action for Boards in Southeast Asia is available for download at www.clientearth.asia.

What's the price for a sustainable future?

Carbon pricing and regulations on externalities, human rights, and community impacts help level the playing field for private sector investment and action. - Unsplash

HOW do we accurately price the value of a sustainable future?

Global annual greenhouse gas emissions (GHG) are far beyond the 1.5°C path laid out in the Paris Climate Agreement. While recent discussions at the 29th Conference of Parties (COP29) in Azerbaijan have attempted to readjust our path, on the current trajectory we're on track for a catastrophic 4°C warming above pre-industrial levels.

Global emissions must be drastically reduced to limit global warming, and carbon pricing will be a vital piece of that puzzle. These mechanisms work by placing a price on the volume of carbon produced by heavy emitters – an important intervention in a market where power and industry account for over half of annual GHG emissions.

In a world with no carbon pricing, the private sector would almost always choose energy projects that yield higher returns – as opposed to those with higher reductions in carbon emissions, but lower financial returns. This reflects the current market system where profitability outweighs environmental considerations, making carbon pricing an essential policy measure to advance our agenda on climate.

To shift market behaviour, laws and incentives must account for the broader value of ecosystems and societal impacts. However, responsibility doesn't rest solely on the public sector, the private sector must collaborate with governments, advocating for impactful climate policies and providing technical expertise.

Carbon pricing and regulations on externalities, human rights, and community impacts help level the playing field for private sector investment and action.

This is slowly being implemented or under consideration for implementation in South-East Asia, with Singapore launching a modest carbon pricing mechanism in 2019 and Malaysia announcing intentions to bring in carbon taxes on high-emitting industries by 2026. Thailand and Indonesia are also exploring carbon mechanisms, with the latter having already implemented an emissions trading scheme (ETS).

Dave Sivaprasad
Managing director and partner; Southeast Asia Lead, Climate and Sustainability, Boston Consulting Group

Levelling the playing field

Climate financing has reached US$1.4 trillion for energy transition investments in 2023. However, an estimated US$150 trillion is required to reach net zero globally by 2050, highlighting that a substantial gap needs to be bridged.

Without a level-playing field that incorporates carbon pricing, private sector funds will not flow into low-carbon investments—unless there are regulatory mandates in place, such as a ban on the sale of internal combustion vehicles.

Carbon pricing can take the form of carbon taxes, ETS or a blend of both. The EU Emissions Trading System is the most prominent and mature of these mechanisms, although there are various markets globally which together cover over five gigatonnes of CO2 equivalent (GtCO2e).

Countries like Sweden, Denmark, Canada, South Korea, and Japan have implemented a combination of carbon taxes and ETS. In some cases, they have applied ETS to high emitting sectors while imposing a carbon tax on the rest of the economy.

Carbon pricing provides the financial incentive for emission reductions, in turn enabling an effective carbon financing ecosystem. Both carbon taxes and ETS play key roles in this, giving businesses the cost of emissions, which can then inform internal carbon pricing and decarbonisation strategies.

Preparing your business for carbon pricing

Companies should set a science-based pathway with interim targets, supported by a separate removal plan to address residual emissions, such as using carbon-removal certificates. They should also fund solutions beyond their value chain that benefit climate, people, and nature to create meaningful ESG impact beyond net-zero commitments.

The number of carbon pricing initiatives globally is growing, with 39 national and 33 subnational initiatives in place as of 2023, covering around a quarter of total global emissions.

Carbon pricing ranges widely across jurisdictions, from around US$1 tonne of carbon dioxide (tCO2) to US$150 tCO2e. Less than 1% of emissions covered are currently mandated at pricing in the range recommended as being required by 2030 – US$61 to US$122 tCO2e – to meet the goals of the Paris Agreement.

Global carbon pricing revenues topped US$100bil in 2023, but there are still major gaps in global coverage. What's critical for companies in Malaysia and South-East Asia, however, is how they respond to a changing ecosystem.

Malaysia has pledged to achieve net zero by 2050, and is considering the role that carbon pricing can play in a sustainable circular economy of the future.

Carbon pricing is an important policy lever for Malaysia. Revenue generated from carbon pricing can be reinvested in carbon finance projects, creating demand for carbon finance instruments and a maturing carbon market. This will support a low-carbon reduction in emissions in line with the country's 2050 goals.

Singapore has introduced a carbon tax of S$25 per tonne for emitters that produce over 25,000 tCO2e until 2024, with a view to reach S$50 to S$80 per tonne by 2030. That's an important step, but falls short of the ambitions required to achieve our shared climate goals.

Malaysian corporates can go further. This matters for businesses not only because they face significant financial costs from the escalating impacts of climate change, but also compliance risks through exposure to global carbon taxation systems.

The EU's Carbon Border Adjustment Mechanism (CBAM) – expected to be in place by 2026 – is the most significant of these mechanisms, imposing a substantial fee for imports of goods from countries which don't comply with EU climate standards. Malaysian exporters face escalating costs if they can't manage their carbon footprint.

Companies can prepare for this by implementing internal carbon pricing in operational and capital allocation decisions. Low-carbon operations are a competitive advantage, especially for businesses targeting markets with stringent carbon standards like the EU. By adopting internal carbon pricing, companies not only safeguard their long-term viability but also position themselves more competitively in their industry.

Carbon-abatement pathways will vary by industry, but the imperative remains constant. As exposure to carbon pricing continues to grow both domestically and globally, it's not enough for companies to ensure their carbon numbers add up. They must also be able to explain the process and rationale behind them.

What's the carbon price for a sustainable business? That's the new question for corporate ESG.

Are you managing or leading ESG?

Lessons from Asean

By PIETER E. STEK

THERE are two common misconceptions about ESG, the movement towards increasing firms' focus on sustainability, social responsibility and ethical governance.

First, that ESG is merely a compliance issue, and second, that it primarily concerns what happens within the firm.

A year-long research project undertaken by the Asia School of Business (ASB) and Maybank's ASEAN Research Center, covering ESG stakeholders across all 10 Asean member states, showed that ESG awareness is driving fundamental changes in many businesses.

The biggest opportunities and threats are largely found in the external environment of firms.

Many businesses in Malaysia perceive ESG as a threat. You only need to open your newsfeed to see how ESG regulations in Europe or the US are impacting Malaysian exports.

It seems even Asian neighbours, like China and Thailand, have caught the "ESGeebies."

Amid these external changes, a natural reflex is to try to regain control by looking inward: Buy solar panels! Post pictures of staff volunteering! Get new certifications!

Stek: Asean region offers many examples of organisations that have seized new opportunities related to ESG.

Pieter E. Stek is the senior lecturer at the Asia School of Business.

While such ESG performances may bring some benefits, they can also obscure the need to fundamentally rethink the business from an ESG perspective.

We don't have to look far for inspiration: our Asean region offers many examples of organisations that have seized new opportunities related to ESG.

While each of these situations is unique, they all involve rethinking the organisation's business model and building alliances with external stakeholders.

Starting close to home, we interviewed a Malaysian SME processing seafood.

Recognising the threat of overfishing to its ability to source raw materials, the company is now exploring farmed fish, developing a circular model, together with new partners, whereby fish and vegetables are farmed together.

In Indonesia, faced with rising fuel costs and air pollution, a South Korean start-up identified the potential to retrofit conventional motorcycles into electric bikes.

This process is cheaper and has a lower environmental impact than scrapping and producing new electric bikes.

In Thailand, a petroleum company is investing heavily in biofuel production.

It believes its rural customer base is better served by biofuels, and that biofuel production itself can help revitalise rural areas.

As an oil and gas importer, investment in biofuels also helps improve Thailand's balance of trade.

In Laos, solid waste management and wastewater treatment projects were combined to create a "bankable" waste processing initiative.

Improved waste collection created new opportunities for recycling (and employment) while also reducing the toxicity of sludge from water treatment plants, making it usable for agricultural purposes.

By adopting a more holistic and circular economy approach to waste management, a new funding model emerged.

Asean is still growing, and green buildings and infrastructure represent a major opportunity for incorporating ESG principles.

While Indonesia's new capital, Nusantara, has garnered much attention, to the west of Jakarta, a new 60sq km energy-efficient, low-waste and public-transit-oriented city is also taking shape.

Privately funded and with a target population of 450,000, the development is as much about ESG as it is about providing residents with a high quality of life, often lacking in heavily congested and polluted Jakarta.

Each of these examples demonstrates leadership, as businesses integrate ESG concepts into a compelling value proposition.

Concerns about overfishing lead to sustainable agriculture. Electric vehicles offer a solution to reducing transportation costs. Biofuels revitalise rural areas.

Recovery of materials and nutrients supports better waste management. Building a green transit-oriented city improves quality of life.

These examples also highlight the importance of policy support and stakeholder engagement.

Governments have a role to play in providing favourable regulation in areas such as construction, transportation and waste management.

Businesses leading in ESG are proactive in their outreach, whether to suppliers, clients, business partners or regulators.

Rather than solely managing their internal operations, they seek to influence and lead the broader business ecosystem in which they operate.

While the role of businesses is important, governments can also act as ESG entrepreneurs.

One of the largest but least discussed ESG policies in Asean is Indonesia's biofuel mandate.

Currently, Indonesia requires 35% palm oil-based biodiesel content for diesel sold in the country.

The country hopes to raise this mandate to 50% starting next year.

Its biofuels policy offers clear environmental benefits by promoting the use of renewable energy.

However, the policy also supports the livelihoods of Indonesian palm oil farmers and a thriving domestic biodiesel industry.

Biodiesel has also helped Indonesia manage its balance of trade by reducing diesel imports and stabilising palm oil prices, thus amplifying the policy's socio-economic benefits.

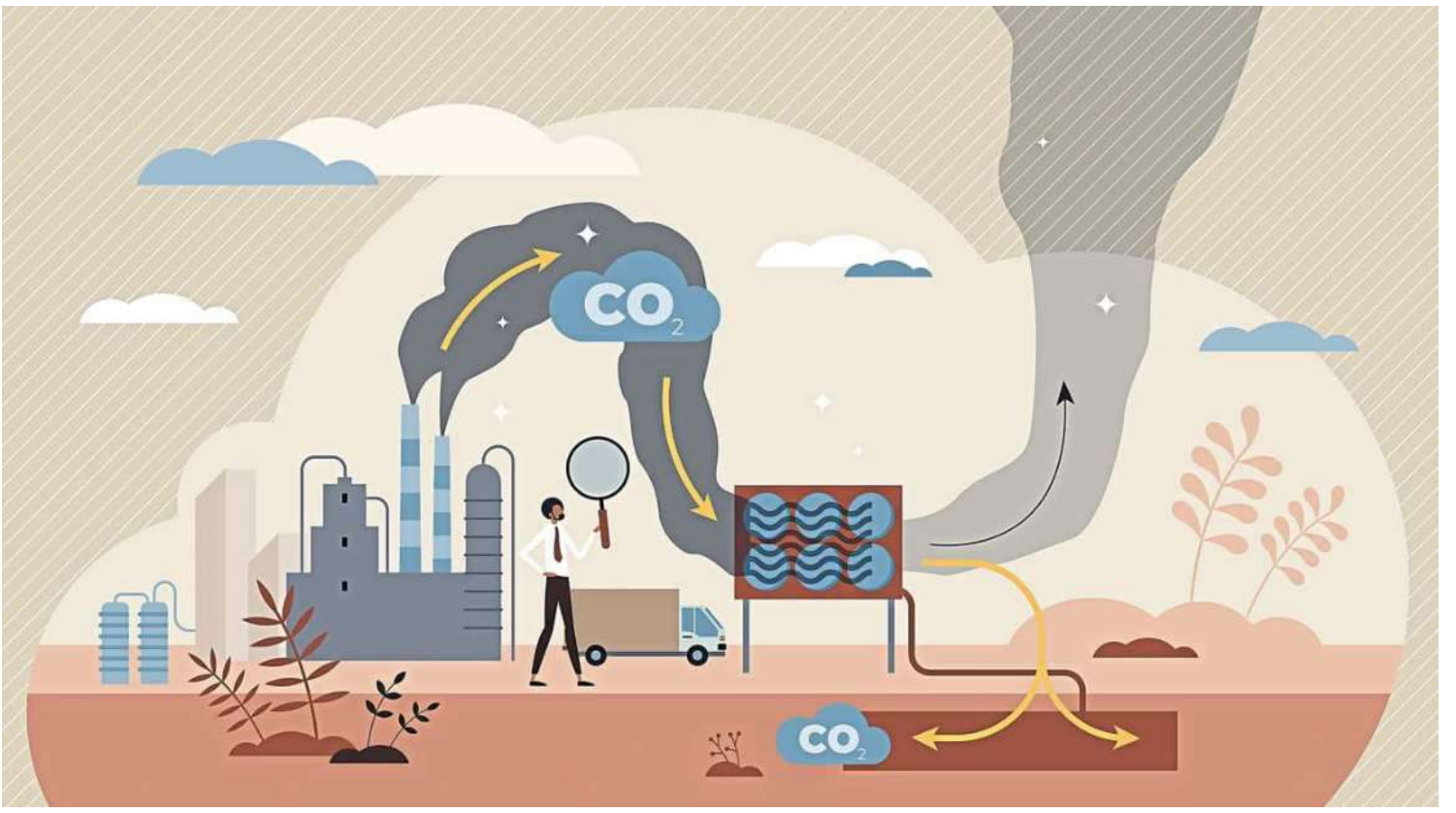
In summary, businesses and governments that focus solely on "managing" ESG with an internally-focused and compliance-driven approach risk being blind to deeper ESG opportunities and risks.

Leadership in ESG in Asean requires a clear understanding of an organisation's external environment and a re-evaluation of existing business models.

It requires developing new ideas and building coalitions to execute them successfully.

Whereas ESG management is focused on short-term goals and maintaining control, ESG leadership looks to the long-term, building coalitions and trust.

While managing ESG may seem like the safe and prudent option, what is truly needed is leadership.



Leveraging CCUS for Malaysia's climate and economic transformation

Aishah Hatta from Global CCS Institute talks about the potential of CCUS to help tackle climate challenges

CLIMATE change is no longer a looming threat – it is an active crisis reshaping our world and how we live in it. For Malaysia, the impacts are visible: intensifying storms and frequent flooding are already disrupting livelihoods.

As part of South-East Asia, a region especially vulnerable to climate change, Malaysia must act decisively to mitigate these risks while safeguarding economic growth.

The Malaysian government's commitment to achieving net-zero emissions by 2050 is a positive step forward. However, reaching this goal, limiting global warming, and addressing the most severe climate risks will require a range of effective solutions.

Among the solutions, carbon capture, utilisation, and storage (CCUS) is a vital tool for climate mitigation and supporting Malaysia's economic resilience in a low-carbon future.

What is CCUS?

CCUS refers to a set of technologies that capture carbon dioxide (CO2) emissions from industrial processes or directly from the air, and permanently store them deep underground, preventing their release into the atmosphere. CCUS is particularly critical to decarbonise hard-to-abate sectors like cement, steel, fertilisers, and natural gas and will be vital to reducing historical CO2 build-up in the atmosphere.

The captured CO2 can be stored safely underground in geological formations or used to create products such as building materials or synthetic fuels. When CO2 is used to create other products, the application is called carbon capture, utilisation and storage. This approach follows the principles of the circular carbon economy, enabling re-use as well as storage.

Experts – including the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA), among many others – have consistently highlighted that CCUS is essential for meeting global climate goals. While CCUS is not a standalone solution, it complements renewable energy, energy efficiency, and reforestation efforts, forming a comprehensive climate action toolkit. The international carbon capture and storage industry is gaining momentum, with over 50 operational facilities worldwide and hundreds more under development.

Malaysia's progress on CCUS

Malaysia is emerging as a regional leader in CCUS, leveraging its natural and industrial advantage. A key opportunity lies in establishing CCUS hubs – geological storage sites capable of receiving CO2 from domestic industries and other countries in the region for a fee. These hubs not only facilitate decarbonisation but also create new revenue streams and strengthen regional cooperation.

The Malaysian government is taking concrete steps to advance CCUS. A dedicated CCUS legislative framework is expected by the end of the year, providing the regulatory clarity needed to attract investment and deploy projects.

In 2023, the government released the National Energy Transition Roadmap (NETR), which includes CCUS among its ten flagship initiatives, with plans to establish three hubs. Additionally, the New Industrial Master Plan 2030 (NIMP 2030) recognises CCUS as essential for decarbonising Malaysia's heavy industries while fostering a new, competitive sector.

These initiatives send a strong signal to the private sector, offering clarity and confidence for CCUS infrastructure and technology investments.

The energy and industrial decarbonisation plans underscore the government's commitment to following a model in which environmental sustainability, economic growth, and social responsibility are not competitive but mutually reinforcing.

Economic and social benefits of CCUS

Beyond its environmental advantages, CCUS offers substantial economic opportunities. Developing CCUS infrastructure can create thousands of skilled jobs, including engineers, geologists, and construction workers. This is already underway in the United States and Europe. Malaysia can replicate this success. With plans for three CCUS hubs under the NETR, the country has the potential to create new jobs and upskill existing roles for the green economy.

CCUS enables high-emission industries such as cement, steel, and fertilisers to continue operating sustainably, safeguarding jobs that might otherwise be at risk in the process of decarbonisation. Malaysia's manufacturing and energy sectors stand to benefit from CCUS as it allows these industries to decarbonise while maintaining their competitiveness in the global market.

It can ensure that industrial workers, especially those in fossil fuel-dependent regions, are not left behind during the transition to net zero. This aligns with the NIMP 2030, which emphasises decarbonising hard-to-abate sectors.

Aishah Hatta is a senior storage lead at the Global CCS Institute based in Kuala Lumpur. With extensive experience in the energy sector, she specialises in geological storage development plans for carbon capture and storage. The views expressed here are the writer's own.

As Malaysia navigates the energy transition, maintaining energy security while ensuring sustainable economic growth remains a critical challenge. For a developing nation like Malaysia, this means striking a balance between leveraging its rich natural resources and meeting climate commitments. The adoption of CCUS allows the country to continue benefiting from economic growth these resources while addressing emissions.

Global collaboration is key

The global experience with CCUS has demonstrated that success hinges on collaboration and extends beyond national borders.

Collaboration across governments, industries, and academia will be crucial to aligning policies, streamlining processes, and building necessary infrastructure. Malaysia and trading partners across Asia can benefit from knowledge-sharing, investment, and technology transfer to accelerate their CCUS journey.

The time to act is now

Malaysia stands at a crossroads in its climate and economic journey. The country has the natural resources, industrial base, and regional positioning to become a leader in CCUS.

By scaling up its efforts and fostering collaboration, Malaysia can achieve its climate goals while unlocking new economic opportunities.

As global momentum for CCUS grows, Malaysia has the opportunity to carve out a leadership role in this transformative space, building on its early successes and leveraging international partnerships to scale up deployment.

The time to act is now, and Malaysia has every reason to rise to the occasion. By embracing CCUS, the nation can ensure a sustainable, prosperous future for generations to come.

Adopting automation for a circular economy is 'the new black'

By LOH HAO TORNG

AS THE world faces urgent environmental crises, from resource depletion to growing waste generation, the need for sustainable practices within supply chains has never been greater.

Traditional, linear production models – characterised by extracting raw materials, producing goods, and discarding them after use – lead to substantial energy and material waste.

This not only depletes finite resources but also strains the environment's capacity to manage the waste we produce.

In Malaysia alone, a staggering 39,078 tonnes of solid waste is discarded daily, equivalent to approximately 1.17kg per person, according to the Solid Waste Management and Public Cleansing Corporation (SWCorp), as reported in *The Star* on Jan 2, this year.

The warehouse, often overlooked as a significant contributor to environmental impact, is emerging as a key player in the transition to a more circular economy.

Increasingly, warehouses are turning to automation as a solution to optimise operations, reduce waste, and lower energy consumption.

Improved ergonomics reduces waste

Automation minimises waste in product handling and transport by improving accuracy and efficiency across the warehouse.

Unlike manual handling, automated systems operate with minimal error margins, ensuring goods are moved, sorted and stored with care.

This precision reduces the likelihood of mishandling, which can result in damaged products, especially in sectors dealing with fragile or high-value items like electronics or pharmaceuticals.

Loh Hao Torng is a Warehouse Automation and Customer Service expert with over 15 years of experience in the industry.

Since joining Swisslog in March 2007, he has specialised in optimising Warehouse Management Systems (WMS) and automation technologies, helping Swisslog clients across South-East Asia improve operational efficiency, reduce downtime and streamline workflows.

Warehouse management systems (WMS), often considered the "brains" of the warehouse, offer real time data and analytics that enable better decision-making.

By optimising packaging materials and utilising smart inventory capabilities, WMS can help prevent overstocking and spoilage – particularly essential in sectors like food and pharmaceuticals.

Optimised spaces, less energy needed

Traditional warehouse operations often require significantly larger land space to accommodate inventory and manual handling processes, leading to a larger footprint, increased construction costs, and higher ongoing operational expenses.

For example, warehouses with manual storage systems and forklifts need wider aisles, which necessitates a greater amount of space, while an automated warehouse can operate with narrower aisles, requiring only 25% of the space of a traditional warehouse.

Larger traditional warehouses also consume significant energy to operate – powering lighting; heating, ventilation and air conditioning (HVAC) systems; material handling equipment; and security systems.

This is especially significant for traditional cold chain warehouses, where cooling and refrigeration demand high energy consumption.

Take, for instance, the Automated Storage and Retrieval Systems (ASRS), which offers a solution to both space and energy challenges.

By maximising vertical storage, ASRS can increase storage density and save up to 75% of floor space.

Designed to function autonomously and with energy-saving properties, ASRS can also function lights-out and cut consumption by up to 15%, contributing to further energy savings.

Furthermore, with proper maintenance and software updates, ASRS typically have a longer lifespan than a manual racking system.

Minimising the physical footprint of warehouses also reduces the need for industrial expansion into ecologically sensitive areas, as exemplified by the pressures faced by sites like Gunung Kanthan, Perak – where the risk of industrial encroachment into such pristine limestone ecosystems highlights the importance of sustainable land use in industrial planning.

Empowering the workforce

While automation is a powerful tool for driving efficiency and a circular economy, it is essential to recognise the human element that underpins its success.

To maximise the benefits of automation, organisations should prioritise equipment maintenance and workforce development.

Proper maintenance ensures peak performance and extends equipment lifespan, while training and development programmes equip the workforce with skills needed to operate, maintain and optimise these systems.

This shift allows the workforce to transition from repetitive manual tasks – such as carrying, picking, and sorting – to higher-value, strategic roles, fostering innovation and efficiency within the organisation.

By providing employees with the necessary training, companies can empower them to embrace automation and leverage its potential, including increased safety, technical skills and data analysis skills.

This makes logistics providers like Swisslog key players in promoting sustainable practices throughout the supply chain.

By offering innovative automation solutions and providing expert training and support, these providers can help businesses reduce their environmental impact, improve operational efficiency, and contribute to a more circular economy.

SMALL ACTS ➤ BIG IMPACTS

Wrap up the year with kindness!

Compiled by ONG HUEY ERN
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As December unfolds, we find ourselves reflecting on the year gone by, a mix of nostalgia and anticipation swirling within us.

While we may feel a tinge of regret for missed opportunities, there is also a hopeful spark lighting the path to a new year—one brimming with potential for growth and positive change.

In this season of giving and renewal, let us focus on the opportunities to make a difference, both for ourselves and the world around us.

Embrace the spirit of the season by engaging in acts of kindness and sustainability with our advent calendar. Each day offers a simple yet impactful way to contribute to a brighter, more sustainable future.

Let's step forward together, making this December not just a time of reflection, but a journey of meaningful actions and cheerful giving.

Download this calendar and share it with your friends - let's make doing good a team effort!

6 Support a local business

7 Donate to a food bank

8 Practise mindful consumption - consider necessity before buying

9 Reduce energy use

10 Start taking shorter showers

11 Try to avoid turning on the aircon today or for as long as possible

12 Spend at least one hour in nature

13

Volunteer your time at an animal shelter

14 Share a positive story about sustainability on social media

15 Reduce Plastic Waste - avoid single-use plastics by using your own bags, containers and tumblers

16 Help your neighbour with errands

17 Try mending broken bridges

18 Challenge yourself to go waste-free and explore sustainable alternatives

19 Buy gifts from local artists or fair-trade sources during your trip

20 Volunteer your time at a soup kitchen

21 Give someone a genuine compliment

22 Volunteer your time at an orphanage

23 Research an organisation that interests you. Consider donating or volunteering

24 Look for things to recycle and repurpose items around your home

25 "Pay it forward"

26 Set sustainable goals for the new year

27 Plan simple meals to reduce food waste for the new year

28 Start a compost bin at home

29

Clean out your wardrobe and donate clothes you no longer wear

30 See what unnecessary items you can declutter around the home

31 Try organising a sustainable-centric celebration to ring in the new year - upcycled decor, minimise food waste

Stay tuned to the next issue to find out how you can make a difference to a better future.

Infographic by SMG Brand Studio