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COVER STORY - Drivers of the Movement toward Healthy and Sustainable Building Materials Credit - ULI's Report titled 'The Materials Movement'





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ULI Report – The Materials Movement: Creating value with better building materials



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INTRODUCTION

Green in Future visited the premises of Signify, previously known as Philips Lighting, for an exclusive interview with Fabian Choh, who is part of the ASEAN Leadership team and responsible for Public and Government Affairs (ASEAN). We were shown around the Lighting Application Centre, the space Signify invested in to demonstrate sustainable lighting solutions to stakeholders and customers.

Fabian Choh has been featured as part of our 'Face to Face' segment in this newsletter, where we interview personalities making a significant contribution to sustainability and energy efficiency. Such personalities embody sustainable living on a daily basis, and we can learn from their mindset and actions so that we leave behind a safer, cleaner and liveable planet.

We are based in Singapore but our newsletter has a reach extending to South East Asia and up to Europe, with a total readership of about 6K subscriptions. Collaborate with us to be a part of our bimonthly newsletter and to feature your technology, product or business through interviews or articles. We can be reached at

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ULI Report: The Materials Movement: Creating Value with Better Building Materials

This article includes excerpts from the Urban Land Institute's recent publication, The Materials Movement: Creating Value with Better Building Materials and has been published here with ULI's permission. To learn more and read the full report, visit: uli.org/materialsmovement

The Materials Movement: Creating Value with Better Building Materials, a recent report by Urban Land Institute (ULI) provides an introduction for real estate owners, developers, and investors to understand why and how to integrate healthy, sustainable building materials in new and existing development projects.

Broadly, healthy and sustainable building materials include those that are manufactured with minimal harmful chemical and whose production releases less carbon into the atmosphere than traditional construction materials. Examples include natural products like bamboo, straw, hempcrete, and sheep's wool, as well as innovative materials like mass timber and low-carbon concrete.

In the report, ULI highlights best practices for cost-effectively integrating these materials in real estate development projects to help owners and developers meet sustainability, health, and financial goals.

Specifically, this report

- Describes the market forces that are driving real estate's movement toward healthy and sustainable building materials, including new regulations, green building certifications, increasing occupier demand, enhanced building value, and the growing importance of ESG investing;
- Outlines the science behind the life cycle impacts of building materials on human health and the environment;
- Highlights high-level strategies and best practices for incorporating better building materials, such as requesting transparent product information data, using reclaimed or recycled materials, and using fewer materials overall; and
- Shares innovative projects that successfully integrate healthy and sustainable materials to achieve positive outcomes.

Drivers of the Movement toward Healthy and Sustainable Building Materials

Regulations:

As cities and regions ramp up efforts to decarbonize as well as to regulate harmful chemicals, policies and initiatives encouraging healthy and low embodied-carbon construction will soon become more common. For real estate, developing with healthy and sustainable materials today can ensure projects are compliant with policies restricting carbon and chemicals now and into the future.

The past few years have seen a dramatic increase in the number and scale of carbon policies, incentive programs, and disclosure requirements, driving the real estate industry to invest resources and time into understanding how their business operations and activities impact climate. Policies targeting embodied carbon come in many different forms, including procurement policies (also

called "buy clean"), climate action plans, building codes, zoning and incentive programs, and policies that address industrial sector emissions.

Many regulatory agencies have based their policies on the Greenhouse Gas Protocol, an international standard that organizes emissions into the three categories described below:

Scope 1, 2, and 3 Emissions for Real Estate: Scope 1 emissions (direct emissions) are emissions from sources owned or controlled by the organization. This might include, for example, natural gas combusted in a boiler at a company's head office to heat or cool the property.

Scope 2 emissions (indirect emissions) result from electricity, heat, steam, or cooling consumed by the company, but generated elsewhere. Scope 2 emissions are released at the facility where the electricity is generated (i.e., the power plant). The power plant would report these emissions as Scope 1, but the organization purchasing and consuming the electricity would report these as Scope 2.

Scope 3 emissions (indirect emissions) occur as a consequence of the operations of the organization, but are not directly owned or controlled by that organization. For example, emissions from waste generated by a company's operations are defined as Scope 3 emissions. In real estate, the most material Scope 3 emissions are usually tenant-controlled greenhouse gas emissions and the emissions associated with development, such as the production of building materials or emissions released during the construction process.



Drivers of the movement toward healthy and sustainable building materials. Credit – ULI report

Green building certifications:

A growing number of building certifications and reporting standards include embodied carbon and material health requirements. Recognizing the importance of green certifications for investment potential, more than 100 voluntary sustainability certifications now address embodied carbon with many others focused on indoor air quality and nontoxic materials.

Occupier Demand:

Better materials can boost marketability by directly supporting a project's or firm's commitment to health and sustainability. Occupiers are increasingly demanding workplaces that are environmentally friendly and promote productivity. Combined, these unique attributes attract users and differentiate healthy and sustainable projects from the crowd.

By addressing carbon and health in materials, companies can highlight their commitment and tell their brand story to recruit top talent, who increasingly expect their workplaces to have positive effects on the environment and on society. In addition, nontoxic building materials contribute to healthier air quality, which is important for worker productivity and cognitive performance as well as mental and physical health.

<u>Indoor Air Quality:</u> While IAQ is affected by a range of factors, the products and materials within a building are an important contributor to air quality. Therefore, one of the easiest ways to improve indoor air is to source low-emission and nontoxic interior products. Poor ventilation is still a key issue across many buildings and is a contributor to sick building syndrome. Improving filtration and HVAC systems is important for improving air quality.

Enhanced building value:

Incorporating better building materials into a project can increase a development's value, especially if the project achieves a healthy or green building certification. Certified healthy and sustainable buildings have been shown to command higher rents and tend to have faster lease-ups compared to noncertified peer buildings. Even without a certification, real estate owners and developers reap the financial benefits of better materials as demand for healthy and sustainable spaces is expected to increase over the short and long terms.

ESG Investing Requirements

Building materials can play a key role in environmental, social, and governance (ESG) strategies for companies throughout the real estate value chain. As investor interest in ESG intensifies, real estate owners and developers are setting aggressive targets that consider impacts beyond the operations of their assets.

Within the "E" category, many leading real estate companies are including embodied carbon targets as part of their net zero strategies. For the "S" category, real estate firms are reporting on a variety of activities, including their material procurement practices and how well their buildings support the health, well-being, and productivity of users.

Understanding Material Impacts

Building materials have significant, far-reaching effects and can be categorized into the five areas:



Climate Health - How a material contributes to (or mitigates) global warming through greenhouse gas emissions that are released or minimized at each stage of its life cycle. Climate health is often measured as embodied carbon, which can account for up to half a building's total carbon footprint over its lifetime.



Human Health - How exposure to a material or a material's ingredients can affect human health during different phases of the life cycle. Insufficient chemical regulation has allowed harmful substances to be used in building products.



Social Health and Equity - How certain people and communities may experience more significant health or socioeconomic impacts from activities during a material's life cycle. This category also applies to ethical working conditions for people involved.

Ecosystem Health - How natural ecosystems are affected by the extraction, production, and eventual disposal of a material. Insufficient regulation and challenging economic conditions can deplete natural resource stocks before they can regenerate.





Circularity - How well a material supports a circular economy, in which there is little waste, and materials can be recycled or reused many times before they are disposed of. Only a small fraction of construction and demolition material is reused.

	Climate health	Human health	Social health and equity	Ecosystem health	Circularity
	<u>s</u>	*		**	Lø.
Why is it important?	11% of global carbon emissions are from the manufacture, transportation, and disposal of building materials. Embodied carbon can account for up to half a building's total carbon footprint over its lifetime.	Humans spend about 90 percent of their lives inside buildings. Insufficient chemical regulation in the United States and other countries has allowed harmful substances to be used in building products.	People of color and those with low incomes are disproportionately impacted by toxic chemicals, air pollution from material manufacturing facilities, and climate change. Complex global supply chains can hide unethical working conditions and even modern slavery.	Ecosystems around the world are impacted by the extraction, manufacture, and disposal of materials. Insufficient regulation in certain areas can allow invasive and unethical extraction practices that deplete natural resource stocks before they can regenerate.	The built environment is one of the largest producers of solid waste, and only a small fraction of construction and demolition material is reused in other buildings. Many recycling processes require energy and release carbon to grind up, burn, or convert material into different products.
What can real estate do?	Reuse and repurpose existing buildings. Select reclaimed, salvaged, or recycled materials when possible. Commit to an embodied-carbon target or "budget" for new projects. Integrate low-carbon materials for the structure and its mechanical, engineering, and plumbing (MEP) systems. Measure it: request Environmental Product Declarations (EPDs) when specifying products, conduct whole-building life cycle assessments.	Follow a chemical avoidance list to minimize and avoid the worst offenders. Prioritize high-impact areas (i.e., interiors), and choose nontoxic or low-emitting paints, finishes, and coatings. Select products and manufacturers that transparently disclose ingredients and production practices. Measure it: request Health Product Declarations (HPDs) when specifying products.	Choose nontoxic and/or bio- based materials with fewer life cycle impacts on communities and workers. Implement an ethical procurement policy and set supply chain requirements for suppliers. Select products and manufacturers with third- party verified certifications for fair labor practices. Measure it: request HPDs or other multi-attribute product certifications when specifying products.	Choose nontoxic and/or bio- based materials with fewer life cycle impacts on ecosystems, communities, and workers. Incorporate reclaimed, salvaged, or recycled materials to reduce strain on natural resource stocks. Choose bio-based materials that are sustainably harvested (i.e., Forest Service Council for timber). Measure it: request EPDs when specifying products.	Reuse and repurpose existing buildings. Prioritize reclaimed and salvaged materials when possible. Design for adaptability, reuse, and disassembly. Work with local partners to funnel construction and demolition waste out of landfills.

Material Impacts and Real Estate Actions

Understanding Material Impacts (Note: Categories adapted from the AIA Materials Pledge and mindful MATERIALS Common Materials Framework (CMF). Credit – ULI report



How Is Material Health Measured and Reported?

As research demonstrates the link between harmful chemicals and negative health outcomes, real estate stakeholders are increasingly calling manufacturers and suppliers to report on ingredients in building products. The focus on transparency and disclosure has led to a rise in labels that list a product's chemical makeup and potential to cause harm to human health.

Name	Description
	An HPD reports on a product's contents and its potential to cause harm to human health. Product ingredients are compared against scientific, toxicological, and epidemiological research to demonstrate potential adverse health effects. HPDs are considered complementary to EPDs and LCAs and are required for some building-level sustainability certifications. HPDs are a disclosure tool and do not label products as healthy or unhealthy.
Declare	A Declare label provides ingredient transparency in alignment with ILFI's Living Building Challenge (LBC). With a Declare label, a product's ingredients are screened against the LBC Red List and the LBC Watch List and then the product is given one of three statuses based on its composition.
Living Product Challenge Certification	The Living Product Challenge is a product certification program created by ILFI and structured on seven petals: Place, Water, Energy, Health and Happiness, Materials, Equity, and Beauty. Like the Living Building Challenge, the Living Product Challenge aims to create a regenerative, circular materials economy without the use of harmful chemicals. Products can receive full certification, petal certification, or a lower-level "imperative" certification, which companies can build on to achieve higher levels of certification.
GREENGUARD	GREENGUARD and GREENGUARD Gold certifications are third-party indoor air quality certifications that set limits on total VOCs, particulates, and other harmful emissions. GREENGUARD Gold is considered one of the most robust IAQ standards.
Cradle to Cradle Certification	Cradle to Cradle (C2C) is a rigorous certification program that measures a product's environmental and social sustainability across five categories: material health, material reutilization, renewable energy and carbon management, water stewardship, and social fairness. C2C also has a separate Material Health Certification to recognize performance of a product in the material health category only. While the certification process can be time-consuming, real estate leaders recognize the value of a C2C label and are often willing to pay more for certified products.

Health-Focused Product Labels and Certifications

Table showing the most popular health-oriented and multi-attribute product labels. Credit – ULI report

Making Concrete Green

Concrete has four main components: cement, aggregate, water, and air. Of these four components, cement, and its precursor material clinker, are associated with high embodied-carbon emissions. According to research by the Rocky Mountain Institute, the production of clinker alone is responsible for around 90 percent of emissions in the concrete manufacturing process.

Therefore researchers and cement manufacturers are discovering ways to reduce the amount of cement required for concrete while retaining the material's strength and integrity. The two most common ways of reducing cement include:

- Incorporating supplementary cementitious materials (SCMs). SCMs, including fly ash, slag, silica fume, and others, are waste materials from various industrial and agricultural processes. The use of these materials in concrete can reduce construction costs and carbon emissions. When SCMs come from non–fossil fuel–based sources, further reductions in carbon can be achieved.
- Incorporating admixtures. Admixtures, including superplasticizers (water reducers) and hardening accelerators are substances that can be added to the concrete mix to modify its properties, such as workability, strength, and durability. The use of certain admixtures permits the greater use of SCMs, thereby reducing the amount of cement needed for the mix.

In addition, technological advances have led to the development of new products and manufacturing methods that minimize embodied-carbon emissions:

- Carbon capture, utilization, and storage (CCUS) technologies. These technologies remove carbon from the atmosphere or from a manufacturing process and store it underground, inject it into concrete, or use it to make new products.
- Low-carbon clinker production. These strategies modify the cement manufacturing process to minimize carbon emissions.

The future is promising for carbon reductions in concrete. Recently, the Global Cement and Concrete Association announced plans to fully decarbonize the concrete and cement industry by 2050.

Project kick-off and visioning	Pre-design	Schematic design	Design development	Construction documents	Bidding/pricing	Construction administration	Operations and maintenance	End-of-life
Articulate big-picture ESG goals. Start early. Reuse and repurpose existing buildings instead of building new.	Define a materials strategy. Identify and engage knowledgeable partners and champions. Pursue green building certifications with a focus on materials.	Consider the structural system. Do not overlook mechanical, electrical, and plumbing (MEP) Systems. Design for adaptability, reuse, and disassembly. Use whole-building modeling tools (such as whole-building life cycle assessment) to inform design. Engage with manufacturers and suppliers. Choose performance- based specifications for concrete mixes.	Design for efficiency and use fewer materials. Limit or "optimize" high-impact materials. Select reclaimed, salvaged, or recycled materials. Specify bio-based or low-carbon/nontoxic materials. Request product certifications (such as EPDs and HPDs) and transparency labels.	Streamline material evaluation and reporting with material libraries and project management software.	Incorporate embodied carbon and health requirements into the competitive bidding process.	Watch for substitutions. Minimize construction waste. Reduce construction site emissions. Work with local partners to funnel construction and demolition waste out of landfills. Document the as-built embodied carbon and health of the building.	Establish health and sustainability targets for tenant fit-outs and MEP equipment replacements.	Opt for deconstruction, rather than demolition, to preserve materials for reuse.

Action Steps for Integrating Healthy, Sustainable Building Materials

Integrating healthy and sustainable building materials throughout the project life cycle. Credit – ULI report

Changes made throughout the development process can significantly affect the overall health and sustainability of the final project. The timeline provides an overview of key action steps real estate owners, developers, and their project teams can take to integrate better materials.

Project Examples

The report also features nine inspiring projects that have thoughtfully integrated healthy and sustainable building materials. Featured projects include:

- 1. Westlake 66 Hangzhou, China
- 2. 1550 on the Green Houston, Texas
- 3. Sven Long Island City, New York
- 4. PAE Living Building Portland, Oregon
- 5. Prologis Evergreen Ontario, Canada
- 6. 505 First Seattle, Washington
- 7. Holbein Gardens London, UK
- 8. Watershed Row and Wood River Mercantile Oregon
- 9. U-lex @ Othello Square Seattle, Washington

About Urban Land Institute

Urban Land Institute is a global, member driven organization comprising more than 48,000 real estate and urban development professionals dedicated to advancing the Institute's mission of shaping the future of the built environment for transformative impact in communities worldwide. ULI's interdisciplinary membership represents all aspects of the industry, including developers, property owners, investors, architects, urban planners, public officials, real estate brokers, appraisers, attorneys, engineers, financiers, and academics. Established in 1936, the Institute has a presence in the Americas, Europe, and Asia Pacific regions, with members in 84 countries.

About Randall Lewis Center for Sustainability in Real Estate

The ULI Randall Lewis Center for Sustainability in Real Estate leads the real estate industry in creating places and buildings where people and the environment thrive. In collaboration with ULI members and partners, the Lewis Center drives industry transformation, cultivates leaders and champions, and helps foster solutions for sustainable, resilient, healthy, and equitable cities and communities. The center pursues these goals via cutting-edge research, global convenings, community technical assistance, and other strategies. The center's main programs are Decarbonization, Urban Resilience, and Healthy Places.

Fabian Choh

Fabian Choh, Public and Government Affairs (ASEAN), joined Royal Philips in 2014 as a Strategist in the CEO's office (APAC) before leading the marketing functions for Signify Singapore (formerly known as Philips Lighting). Recently, he was appointed to the position of Public and Government Affairs Leader (ASEAN).

Prior to Philips, Fabian spent eight years with the Economic Development Board (EDB) of Singapore, where he held various policy roles. He also served as the EDB Director for the Middle East. Fabian trained in Building Science and completed his MBA at the University of Oxford.

Green in Future interviewed him on his views on sustainability and how Signify is dedicated to achieving it through lighting. Fabian and his associates also demonstrated their products and features in various built environments during our visit to the Philips Lighting Application Center.

Briefly tell us about your role at Signify Singapore and how it has shaped your views on sustainable living. Can you elaborate on the kind of actions required to achieve sustainable living?

I am responsible for Public and Government Affairs. A large part of my work is examining energy and climate challenges in the local and regional context and what Signify can do about it. My focus is on accelerating energy efficiency and driving greater climate action for the benefit of everyone while addressing stakeholders' concerns.

Climate change is a reality, making it imperative for us to take action. The best solutions today address economic, social and environmental benefits. I'm optimistic that we're on the right track – more people are becoming aware of the importance of incorporating energy efficiency into their daily lives. They also want to have better air quality and a cleaner environment. However, there is a problem – we are not moving fast enough. According to the International Energy Agency, to meet global targets, countries must



double the speed of action to improve energy efficiency. Signify is dedicated to contributing to drive this positive change.

Under the Singapore Green Plan 2030, the target is to have about 80% of our buildings by gross floor area (GFA)to be green by 2030. I'm happy to share that simply switching to LED lighting represents a fast intervention with enormous energy-saving potential. This is especially so when you consider that on average, lighting constitutes between 20% and 40% of a typical municipality's electricity consumption.¹ It's also the least intrusive way for change and an easy decision if you look at the benefits - immediate cost savings, longer product lifespan and less waste. Sustainable living is as simple as switching an energy-efficient LED lightbulb.

Please state some of the achievements of Signify in getting your customers closer to sustainable living since you joined the



¹ <u>https://www.signify.com/global/our-</u>

company/blog/sustainability/economist-bright-lights-cleanercities#:~:text=Lighting%20accounts%20for%20a%20large,of%20a% 20municipality's%20electricity%20consumption.

company in 2014.

There are so many! In step with our commitment to making businesses in Singapore more sustainable, we have invested in the Lighting Application Centre in our office in Toa Payoh, to demonstrate to our stakeholders and customers our latest cuttingedge connected lighting solutions and showcase what they can emulate in their own spaces.



The Philips Ultra Efficient Bulb. Credit - Signify We have also launched the Philips Ultra Efficient bulbs. To put things into perspective, an incandescent light bulb has a light output of 40 watts while an equivalent LED requires 5.5 watts for the same amount of light output. With the Ultra Efficient bulbs, an industry breakthrough, we are at 2.3 watts of lighting, consuming 60% less power than the normal LED to achieve the same light output, and it can last up to 50 years².

Another significant milestone is the first LED night race at the Singapore Grand Prix 2023. We partnered with DZ Engineering SRL to supply more than 1,600 Philips ArenaVision LED floodlights that are 30% more energy-efficient and energy-saving.

Another highly relevant achievement in today's society is our contribution to the Singapore food story. During the COVID-19 pandemic, the topic of enhancing Singapore's food security resurfaced as we saw vegetables and eggs fly off the shelves at supermarkets. To build a more resilient food future for Singapore, the Singapore Food Authority has been leading a movement to build up the agri-food industry's capability and capacity to sustainably produce 30% of our nutritional needs by 2030. I am proud to say that today, Signify supplies to one of the biggest vertical farms in Singapore using energy-efficient horticulture LED lighting to produce 500 tonnes of fresh vegetables yearly. We estimate that we are contributing to the production of up to 2,000 tonnes of fresh vegetables per year amongst all the local farms currently using our horticulture lighting.

World	Climate action	13 CLIMME CLIMMERSON CLIMMER	Double the pace we achieve the 1.5°C scenario of the Paris Agreement
Better	Circular economy	12 RESPONSE	Double our Circular revenues to 32%
sr Lives	Food availability Safety & security Health & wellbeing	11 SUSTANAUL CITES AND COMMUNITES AND MELLEDRC 	Double our Brighter Lives revenues to 32%

Signify's positive impact on the environment and society is doubling. Credit - Signify

² <u>https://www.signify.com/global/our-</u> <u>company/blog/innovation/ultra-energy-efficient-led</u> Committed to enabling access to light amongst underprivileged and under-served communities, Signify Foundation has been supporting disaster relief such as supplying 12,700 emergency portable solar lighting during the earthquake in Syria and Turkey. With close to 30 billion light points across the world, lighting presents a huge opportunity for progress. With just one change to our lighting technology via an upgrade to LED, followed by scaling it with mass and speed, Signify continuously makes lives safer and more comfortable, businesses more productive and our city more liveable.

What is the Green Switch program and how does it align with Singapore Green Plan 2030?

In the built environment and other industries, transitioning from conventional lighting to connected LED can save up to 70% on lightingrelated energy consumption. We call this transition the Green Switch, and it is one of the quickest and most effective ways for achieving progress towards sustainability goals.

Signify estimates that if all the lighting points in Singapore were to switch to LED, the reduction of carbon dioxide emissions could amount to one million tons annually³. Every individual can contribute to making this happen. We need to inculcate a sense of urgency among consumers by raising awareness that right now, things are not up to speed. It is an easy and smart decision to make the Green Switch because the benefits are immediate - energy is saved and it is easier on the wallet.

Signify's Green Switch program is designed to help individuals, businesses and cities to take that step forward. With the Green Switch program, we help businesses understand how LED and connected lighting can support their sustainability goals, working with them to specify the right lighting products, systems and services. Signify's team of lighting and financial experts can help businesses overcome investment hurdles by designing a suitable lighting system and crafting a financial plan that fits their budget. Businesses can also take advantage of government grants available in Singapore through the Singapore Green Plan 2030. Of course, we can also see through the entire lighting transformation process in terms of installation and more.

Within the organization, what is the kind of culture you have, to adhere to a sustainable living on a consistent basis? And how are the employees being trained to do so?

Every one of us at Signify are ambassadors for sustainability. It is the core of our business and strategy – our DNA. We also purposefully select a variety of challenges that offer all employees the opportunity to create and share their positive sustainability impact with fellow colleagues globally via internal portals. For example, previously, we got to learn from each other about conscious consumption and а carbon-neutral organised cook-along challenge. We have also developed a learning platform with content related to sustainability, circularity, climate action, and more. This empowers us to be properly trained anytime, anywhere – an essential ingredient to becoming an effective ambassador.

What are the green goals set for you as a company in the future? And what is it that you would like other companies to learn and adopt from Signify?

With our Brighter Lives, Better World 2025 program, we are taking specific, measurable actions to double our positive impact on the

³ For detailed information on Signify's conversion model, including the underlying assumptions and proposed conversion see <u>here</u>.

environment and society, using the United Nations Sustainable Development Goals as our strategic compass.

One of the goals is to double the pace at which Signify achieves the 1.5-degree scenario of the Paris Agreement. We are proud to be on track to reduce our emissions across our full value chain, as detailed in our Brighter Lives, Better World sustainability program and validated by the Science-Based Targets initiative. For example, we have been using 100% renewable electricity in our operations since 2020. We have also reduced more than 70% of our absolute operational carbon footprint since 2010, and will continue to do so, via hundreds of initiatives implemented in factories, offices, logistics, and business travel.

As Singapore accelerates its transition towards a low-carbon built environment, we as Signify are fully supportive of the Singapore Green Building Masterplan's targets of 80-80-80 in The 2030. Singapore government is supporting this goal by pushing the boundaries of energy efficiency, giving incentives, raising the standards for the Green Mark certification, and taking the lead to drive wider adoption of Super Low Energy buildings. The built environment industry also recognises the importance of retrofitting existing buildings as Singapore works towards 80-80-80 in 2030. And Signify wants to contribute positively in a focused manner.

We also aim to double the revenue from innovations which benefit society in areas such as food availability, safety and security, and promoting health and well-being.

In terms of diversity & inclusion, we are striving to double the percentage of women in leadership positions, making Signify an even greater place to work. Signify has already been awarded the Great Place to Work certification in Singapore for six consecutive years. Plastic pollution has become one of the most pressing environmental issues and Signify has started phasing out fossil-fuel based plastics from our packaging for consumer-related products. We have already eliminated more than 99% of fossil-fuel based plastics from our consumer packaging worldwide, using recycled paper-based materials as alternatives.⁴ This initiative not only supports environmental sustainability but also reduces the burden on the landfills.

Encouraging environmental sustainability throughout the entire construction value chain is imperative for Singapore to reach our sustainability goals. It is a coordinated effort, involving close collaboration within the community of designers, technology providers, constructors, regulators, and more to effectively work towards reaching the 80-80-80 goal. There is much to learn from each other and together, we can progress forward to achieve the ultimate objectives of the Singapore Green Plan 2030.

Signify has a keen passion for sustainability which they keep at the core of everything they do. Their purpose to unlock the extraordinary potential of light for brighter lives and a better world has prompted them to change the way light is created and used to have a positive impact on the planet and its residents. As stakeholders or clients, head over to the Philips Lighting Application Centre located at their offices in Toa Payoh, Singapore to explore their work and products.



⁴ <u>https://www.signify.com/global/sustainability/our-program/responsible-packaging</u>

HAINAN AIRLINES CHOOSES SATS FOR CARGO HANDLING IN SAUDI ARABIA

Hainan Airlines has awarded a contract to SATS Ltd. (SATS) for cargo handling services in Saudi Arabia. Hainan Airlines operates three Airbus passenger flights a week to Riyadh and Jeddah. The new contract will see providing warehouse handling services for over 2,400 tonnes of import, export, and transit airfreight annually, including special cargo shipments. SATS has been present in the Saudi Arabian air cargo market for over six years and handles over 60,000 tonnes of cargo and mail per annum for 19 airline customers.

"We welcome Hainan Airlines as a customer of SATS in Riyadh and Jeddah. The airline is an important and growing partner of the SATS Group globally and we look forward to supporting its growth in Saudi Arabia through the provision of high-quality cargo handling services in our modern and well-equipped facilities. This new contract also leverages the capabilities and reputation earned by Worldwide Flight Services (WFS), a member of the SATS Group, for the cargo handling services it already provides for Hainan Airlines in Europe and North America," said Bob Chi, CEO Gateway Services at SATS.

"It is important to Hainan Airlines and our customers that we work with cargo handling partners that can consistently meet the service standards we require. SATS and WFS share our approach and, together, they now offer us the opportunity to work with a single partner at more major airports across our network," said Jiandong Liu, General Manager of Ground Handling Management Division at Hainan Airlines.

This business is handled across three SATS' locations at Saudi Arabia's biggest cargo airports. In Riyadh, the SATS Airfreight Terminal covers 30,000m² and offers the capacity to process over 300,000 tonnes of cargo a year. SATS also operates a second 30,000m² warehouse facility in Damman as well as an 8,000m² facility in Jeddah with a throughput capacity of 36,000 tonnes a year. Across the three Saudi Arabia operations, SATS offers facilities to support a wide range of cargoes, including perishables chiller and freezer rooms, a temperature-controlled pharma facility, and a courier express zone. The operations also incorporate areas for live animals, valuable, and dangerous goods shipments. Additionally, SATS provides road freight services connecting the three airports as well as Medina Airport.

About SATS

SATS Ltd. (SATS) is a global leader in gateway services and Asia's pre-eminent provider of food solutions. Using innovative food technologies and resilient supply chains, we create tasty, quality food in sustainable ways for airlines, foodservice chains, retailers, and institutions. With heartfelt service and advanced technology, we connect people, businesses, and communities seamlessly through our comprehensive gateway services for customers such as airlines, cruise lines, freight forwarders, postal services and eCommerce companies.

Fulfilling our purpose to feed and connect communities, SATS delights customers in over 210 locations and 27 countries across the Asia Pacific, UK, Europe, the Middle East, Africa, and the Americas. SATS has been listed on the Singapore Exchange since May 2000. For more information, please visit www.sats.com.sg.

YTL PowerSeraya Wins First RFP under Energy Market Authority's (EMA) Centralised Process to Build 600MW Hydrogen-Ready Combined Cycle Gas Turbine (CCGT)

YTL PowerSeraya's Hydrogen-Ready CCGT Win Paves the Way for Singapore's Net Zero Future

YTL PowerSeraya Pte. Limited ("YTL PowerSeraya"), a wholly owned subsidiary of YTL Power International Berhad ("YTL Power International"), has won the first Request for Proposal (RFP) under EMA's new Centralised Process framework to develop a hydrogen-ready CCGT at its Pulau Seraya Power Station (PSPS) site. The framework strategically coordinates private sector investments to ensure sufficient generation capacity by 2028, safeguarding Singapore's future energy needs.

The construction of a 600 MW hydrogen-ready CCGT is estimated to cost \$800 million and is targeted to be completed by 31st December 2027.

The project will complement and diversify Singapore's power mix alongside solar, imported electricity, and other potential low-carbon energy sources. YTL PowerSeraya's hydrogen-ready CCGT is also set to make a substantial impact to support the nation's generation capacity to meet growing electricity demand.

Mr John Ng, CEO at YTL PowerSeraya, expressed commitment about the company's central role in shaping the nation's energy landscape. "We are honoured to be awarded the first RFP and be entrusted with the responsibility of constructing the hydrogen-ready CCGT at PSPS. YTL PowerSeraya is committed to leveraging cutting-edge technology and sustainable practices to contribute to Singapore's energy security and environmental goals."

YTL PowerSeraya's CCGT will be at least 30% volume hydrogen-ready, with the ability to be retrofitted to become operationally 100% hydrogen-ready in the future, aiding in emissions reduction, as the combustion of hydrogen gas generates no greenhouse gases, thereby underscoring the organisation's commitment to environmentally sustainable practices. This monumental undertaking by YTL PowerSeraya is pivotal in positioning Singapore to achieve her long-term net zero emissions aspiration by 2050, under the Singapore Green Plan.

Dato' Seri Yeoh Seok Hong, Managing Director of YTL Power International, said, "This project is fully in keeping with our commitment to invest for the long-term in low-carbon technologies, infrastructure and advanced energy solutions, enabling us to continue to provide the best outcomes for the benefit of our customers and communities where we operate. We are gratified by the faith and confidence placed in YTL PowerSeraya to build for the future and deliver this pioneering project in Singapore".

With over 53 years of experience in the power generation industry, this milestone stands as a testament to YTL PowerSeraya's unwavering commitment to the long-term energy security of the nation while aligning with international efforts and global sustainability agenda as we transition towards cleaner energy sources and minimising environmental impact.

About YTL PowerSeraya

YTL Power Searya is in the business of producing, wholesaling, trading and retailing of energy; with a primary focus on electricity. As an established player in Singapore's energy sector, it supplies the country's energy needs through its multi-utilities platform.

The YTL PowerSeraya Group has three subsidiaries: the retail arm under the Geneco brand provides electricity price plans and energy solutions to homes and businesses, PetroSeraya is the fuel management arm of the Group, and Taser Power which operates the Tuaspring Power Plant.

The YTL PowerSeraya Group is a wholly-owned subsidiary of YTL Power International Berhad. To find out more about YTL PowerSeraya, please visit the website: https://ytlpowerseraya.com.sg/.

2024 Predictions (Quotes from Sodexo Executives)

Sustainability in the Food Services Sector

"In 2024, the food services industry is set to undergo a significant transformation. With a growing commitment among companies to minimise their environmental footprint and the enactment of the new food waste segregation law in Singapore, we can expect **F&B businesses to shift towards a circular model**. This entails innovative approaches to converting food waste into valuable products, such as composting food scraps for fertiliser or converting food waste into biofuel.

Additionally, we anticipate a **rise in plant-based food options**. As people become more interested in healthier and more eco-friendly meals, restaurants will offer more plant-based choices to cater to this demand.

Although the trend of **local sourcing** has been evident in recent years, 2024 is expected to witness a more widespread adoption of this practice by restaurants and food service providers. This aims to reduce the environmental impact of transporting goods over long distances.

Lastly, there will be a **concerted effort to educate and involve customers in sustainable practices**, imparting knowledge about waste sorting and recycling, promoting the benefits of plant-based diets, and highlighting the significance of supporting local farmers. This approach is crucial in addressing Singapore's food insecurity and propelling the nation closer to its goal of producing 30% of its food locally by 2030."

- Qi Ni Lee, Corporate Responsibility & Diversity, Equity & Inclusion Lead for Malaysia & Singapore, Sodexo

Uniting Brands in the Pursuit of Net Zero Goals

'Collaboration among brands and companies is crucial to creating a better world. When brands come together and align their **business efforts with Net Zero goals**, a powerful momentum is set in motion. Consumers today are actively seeking out eco-friendly and sustainable products, as it's their way of doing their bit for the planet. And when brands come together and collaborate around sustainable collaborations and conversations, the impact gets amplified multi-fold.

Achieving sustainability in the food & beverage industry requires a **"whole-of-industry"** approach – from the farmers, manufacturers, consumer brands and B2B4C brands. The impact we can create together is one that is continuously reinforced through company policies, brand campaigns and even embedded in the fabric of corporate culture.'

- Jaspreet Kaur, Head of Marketing & Strategic Planning, Sodexo

StorHub, GreenA Consultants and UnaBiz Partner to Achieve Green Certification for the Largest Portfolio of Self Storage Facilities in Singapore

StorHub Self Storage Group (StorHub), Asia Pacific's leading self storage platform, announced that the company has achieved certification in <u>Arc Skoru</u> and is on track to achieve Leadership in Energy and Environmental Design v4.1 Operation and Maintenance ("LEED v4.1 O+M" or "LEED") certification for the largest collection of self storage facilities in Singapore. StorHub has partnered with GreenA Consultants and UnaBiz, to achieve the certification, marking the beginning of StorHub's journey to green certify the company's portfolio of properties throughout the region, including Australia, Greater China, Japan, Korea, and Malaysia.

LEED certification is a globally recognised symbol of sustainability achievement, and it is backed by an entire industry of committed organisations and individuals paving the way for market transformation. Its adaptability in reporting standards across various countries and regions is the key selection criterion for StorHub, as it aligns with their global ESG compliance strategy. Green building certifications such as Green Mark, BREAM, NABERS, Green Star and WELL, are also used to assess and recognise buildings which meet certain sustainability standards.

To meet the rigorous requirements of LEED certification, StorHub partnered with GreenA Consultants as the green building consultant to look at multiple energy strategies reduction and digital-led smart enabling solutions to push energy optimisation. This will in turn enable a smart integrated Facilities Management operation across the global portfolio with strategic energy management solutions.

Apart from energy emissions, water, waste, and indoor air quality are targeted for improvement in all the developments. Smart monitoring is critical in understanding improvement needed in the future and to continuously strive for reduction in emissions.

Other sustainability initiatives include a roof garden, hydroponics, and innovative engagements with the community at large that set StorHub apart from other businesses. StorHub continues to give back to society through striving towards the company's sustainability goals.

By leveraging on UnaBiz's expertise in digitalisation and IoT, the trio created a connected ecosystem that collects precise electrical and water consumption dataand indoor air quality metrics via Milesight's LoRaWAN Certified 9-in-1 indoor air quality sensors in all StorHub's 18 properties in Singapore.

With support from GreenA Consultants, StorHub was able to meet the stringent certification requirements for Arc Skoru in line with LEED certification by implementing various sustainable practices, thus aligning StorHub's progression to become the largest LEED certified portfolio of self storage buildings in Singapore , and the first to integrate multiple sites with the Arc Skoru performance platform, a sustainability reporting tool, to measure the LEED impact of StorHub's sustainability efforts.

Through a wireless retrofit solution, the project was completed in 2 phases, with quick installation turnaround time and no costly infrastructure overhaul. The utility consumption data and environmental data required for LEED certification is then seamlessly fed into this sustainability reporting tool.

StorHub actively aligns with the city-state's commitment to environmental sustainability. The self storage operator's on-going sustainability initiatives include:

- I. Installing solar PV panels with a capacity of 2.34 MW(p), planned to expand to 3.02 MW(p) by early 2024, covering about 25% of StorHub's total energy needs;
- II. Increasing the number of electric vehicle charging points from 14 to 32 stations by early 2024;
- III. Setting up recycling facilities at 18 properties to collect and reuse more than 35 tonnes of recyclables; and
- IV. Implementing various other measures to enhance energy efficiency.



StorHub's Headquarters at 615 Toa Payoh - Credit: StorHub

To support the Singapore Green Plan 2030, StorHub has secured a SGD180 million sustainabilitylinked loan (SLL) from CIMB and UOB. This is unprecedented in Asia's self storage industry, positioning StorHub as a pioneer in the industry that commits to long-term sustainability efforts.

Mr Mike Hagbeck, Group CEO of StorHub, said "At StorHub, we believe in the power of collaboration and innovation to drive measurable sustainability goals. We are committed to integrating ESG principles across our facilities in the Asia Pacific. Working with GreenA Consultants and UnaBiz enables us to structure the sustainability efforts and collect reliable and accurate data for compliance with reporting standards like LEED to facilitate audits and certifications, and to create self storage facilities that add value to our customers, investors, partners, communities, and a greener environment."

Ms Farizan d'Avezac de Moran, Senior Partner at GreenA Consultants commented, "StorHub's leadership commitment to sustainability and innovative practices has enabled us to push forward with the implementation across multiple assets in the most cost effective and efficient manner. Being the largest self storage asset owner, StorHub has shown all-round commitment to sustainability beyond energy and has included strong social and governance action. Together, we are making beneficial positive environmental and economic impact in the self storage industry."

Mr Jonathan Tan, Managing Director of UnaBiz Singapore said, "We are proud to be part of this milestone project, which showcases the possibilities of digitalisation and IoT technologies in driving sustainability. GreenA's expertise in implementation of sustainable practices for net-zero and net-positive energy buildings coupled with UnaBiz's end-to-end IoT solutions, help StorHub collect fit-for-purpose data which can be benchmarked for sustainability reporting and green certifications."

About StorHub

StorHub is a leading self storage platform in Asia with operations across key gateway cities in the Asia Pacific region. Founded in Singapore in 2003, StorHub currently owns and manages facilities spanning over 6.8 million square feet of GFA and more than 70,000 storage units across key markets in Australia, Greater China, Japan, Malaysia, Singapore, Thailand and Korea. StorHub offers individuals and businesses a range of reliable and secure storage solutions to resolve storage challenges at home or work. For more information, please visit <u>https://www.storhub.com.sg</u> and follow us on <u>Instagram and Facebook</u>.

About GreenA Consultants

Singapore based, GreenA Consultants, was founded in 2009 with the mission of syncing both environmental engineering and corporate sustainability targets in achieving decarbonation goals. Their diverse portfolio of projects spans across Asia and Africa. GreenA's strong sustainability engineering knowledge and strategic foresights of decarbonization challenges sets them apart as a sort after valuable partner. For more information visit: <u>www.greenaconsultants.com</u> and follow us on LinkedIn.

About UnaBiz

UnaBiz is a global Massive IoT service provider that specialises in solution design, manufacturing, connectivity and data platform services across a hybrid of low-power wide-area (LPWA) technologies such as Sigfox OG, LTE-M, NB-IoT and LoRaWAN, to power sustainable business growth. Founded in 2016, the company is headquartered in Singapore, with R&D centres in Taipei and Labège (FR), and sales offices in Tokyo, Paris, Madrid and Holland.

UnaBiz owns the Sigfox OG technology that connects 12 million sensors for 1500 B2B customers on the global OG Network, owned and commercialised by 70+ national Operators worldwide. The company focuses on Utilities, Supply Chain & Logistics, Security and Facilities & Building Management.

UnaBiz was accredited by the Infocomm Media Development Authority of Singapore (IMDA) in 2021 affirming its position as one of the digital champions to contribute to Singapore's Digital Economy vision. Additionally, the government supports Singapore companies to build capabilities and capture new opportunities around sustainability. Grants and financing options are available for enterprises to support capability and product development projects that improve energy and water efficiency, and certification for greener retrofits that help building owners achieve their sustainability goals.

UnaBiz envisions a closely connected world powered by simple technology because it believes in "Less is More". By uniting people and IoT technology, it aims to create an impact on a massive scale, to help every person and every organisation on the planet live smarter, simpler, and more sustainable way.



ZALORA CHAMPIONS CLOTHES RECYCLING THIS LUNAR NEW YEAR WITH DONATION PROGRAM / INITIATIVE

Donors receive S\$10 cashback for their next ZALORA purchase

ZALORA, Asia's leading fashion and lifestyle e-commerce destination, and part of Global Fashion Group (GFG) is thrilled to announce the extension of its Snap and Drop apparels donation program on its website and mobile app. In the spirit of embracing sustainability and honoring the cultural tradition of spring cleaning, symbolizing the removal of bad luck and ushering in the Lunar New Year with a fresh start, this collaboration with Life Line Clothing, a local zero waste textile collector, aims to inspire donations of preloved apparels to be reused or recycled into new items during this festive period.

To add an extra dash of excitement for donors this Lunar New Year, **donors will receive \$\$10 cashback** that can be redeemed for purchasing new apparels on their next ZALORA purchase. Collected textiles will be diverted from landfills and sent to a Life Line Clothing facility to be sorted, then be reused and resold if in good-condition or repurposed as raw materials for household items like gloves and tote bags.

Donors can drop their pre-loved apparels at 60 textile recycling bins island-wide, including easily accessible heartland and downtown locations:

Ang Mo Kio
City Hall
Kranji
Punggol
Tampines
Bedok
Clementi
Marina Bay
Queenstown
Tanjong Pagar
Bukit Batok
Hougang
Pasir Ris
Sengkang
Tiong Bahru

•Buona Vista • Jurong • Paya Lebar • Somerset • Yishun

To take part in the Snap and Drop Program:

1. Pack any clothes, shoes, bags or other fabric items

2. Snap a picture of their bag of donated items in front of the collection box at one of the drop-off locations

3. Drop their items into the collection box, and do note down the collection box number (SG0XXX) located at the front of the box

4. Fill up a form located on the ZALORA website to obtain cashback

In an effort to make these repurposed items more easily accessible to customers, and to provide a greater range of sustainable and environmentally-friendly pre-loved products, Life Line will offer selected upcycled items which have passed authentication and condition checks for purchase on the ZALORA website and app.

Arvind Devadasan, Head of Sustainability, ZALORA said: "As we approach the Lunar New Year, a time when the tradition of buying new clothes is deeply ingrained, we want to offer a meaningful alternative to the disposal of preloved garments. Our Snap and Drop initiative not only aligns with our values of sustainability, but also provides individuals to play a pivotal role in creating a greener and more sustainable fashion ecosystem."

ZALORA's upcycling and cashback programs have currently been rolled out in Singapore and Malaysia, with plans being explored to expand to other markets in the Southeast Asian region longside local upcycling partners. This program is part of ZALORA's sustainability initiatives on promoting a more circular fashion economy to tackle climate change, and part of a broader movement in GFG's long-term People and Planet Positive strategy.

About ZALORA

ZALORA is Asia's Online Fashion and Lifestyle Destination. Founded in 2012, the company has a presence in Singapore, Indonesia, Malaysia, the Philippines, Hong Kong and Taiwan. ZALORA is part of the Global Fashion Group, the world's leader in online fashion for emerging markets. ZALORA offers an extensive collection of top international and local brands and products across apparel, shoes, accessories, and beauty categories for men and women. Offering up to 30-day free returns, speedy deliveries as fast as 3 hours, free delivery over certain spend, and multiple payment methods, and a loyalty subscription program Znow offering unlimited free and fast delivery. ZALORA is the online shopping destination with endless fashion and lifestyle possibilities.

About Life Line Clothing

Life Line Clothing is one of the leading authorities on textiles recovery in Asia Pacific with operations in Singapore and Malaysia. Their factory is the only ZERO waste, ISO Accredited textiles recycling facility in the region, helping to divert tonnes of discarded textiles from landfill every day by processing the items into over 500 different categories, ensuring to prolong the life of textiles.

About Global Fashion Group

Global Fashion Group is a leading fashion and lifestyle destination in LATAM, SEA and ANZ. From our people to our customers and partners, we exist to empower everyone to express their true selves through fashion. Our three ecommerce platforms: Dafiti, ZALORA and THE ICONIC connect an assortment of international, local and own brands to 800 million consumers from diverse cultures and lifestyles. GFG's platforms provide seamless and inspiring customer experiences from discovery to delivery, powered by art & science that is infused with unparalleled local knowledge. Our vision is to be the #1 fashion & lifestyle destination in LATAM, SEA and ANZ, and we are committed to doing this responsibly by being people and planet positive across everything we do. For more information visit: www.global-fashion-group.com

LG'S 'HACK FOR HEAT' FINALE POINTS TO EXCITING, SUSTAINABLE FUTURE FOR HVAC

Company Empowers Young Talent in Europe to Reimagine HVAC for a Better Tomorrow

The grand finale of its first-ever heating, ventilation and air conditioning (HVAC)-themed student hackathon, *Hack for Heat*, took place on 26 January 2024 at the LG office in Courbevoie, France. The groundbreaking event saw talented youth from across Europe competing in teams to help redefine the future of HVAC and create a better tomorrow for all.

LG understands the importance of transitioning to low-carbon heating systems and is fully committed to supporting the EU's Green Deal. In line with this commitment, LG offers efficient and sustainable HVAC solutions. As part of efforts to foster the next generation of HVAC innovators and help bring about positive change, LG organised the *Hack for Heat* hackathon, inviting students to apply their passion and unique ideas to three key challenges facing the HVAC industry:

• **HACK HEAT FOR DESIGN:** Redefining HVAC design to seamlessly integrate into urban landscapes, with a focus on aesthetics, size and cost.

• **HACK HEAT FOR PLANET:** Creating 'zero carbon' heat pump systems while addressing every aspect of the supply chain.

• **HACK HEAT FOR USERS:** Crafting engaging educational content to connect with consumers and spread awareness about LG's commitment to sustainable development solutions.

The *Hack for Heat* grand finale will feature six teams representing Spain, Portugal, the U.K., Hungary and France. Each team will have the opportunity to present their projects to a jury comprising LG executives from various business units. The winning team will be rewarded with an all-expenses-paid trip to Seoul, South Korea, where they will have the chance to immerse themselves in the local culture, explore the city's renowned landmarks and enjoy an exclusive tour of LG headquarters.



Open to the public and media, the *Hack for Heat* finale was held at Workstation, 25 Quai du Président Paul Doumer, Courbevoie, France, on 26 January 2024 between 8:30am to 3:30pm.

"Hack for Heat reveals LG's strong commitment to innovation and firm belief in the power of young talent to shape the future of HVAC," said James Lee, head of the Air Solution Business Unit at LG Electronics Home Appliance & Air Solution Company. "We are thrilled to welcome the unique ideas of these passionate, young innovators, and look forward to seeing how their contributions will transform the industry and make people's lives better."

For more information about the event, visit www.lg-hackforheat.com/en/challenges/2023-edition.



About LG Electronics Inc.

LG Electronics is a global innovator in technology and consumer electronics with a presence in almost every country and an international workforce of more than 74,000. LG's four companies – Home Appliance & Air Solution, Home Entertainment, Vehicle component Solutions and Business Solutions – combined for global revenue of over KRW 80 trillion in 2022. LG is a leading manufacturer of consumer and commercial products ranging from TVs, home appliances, air solutions, monitors, service robots, automotive components and its premium LG SIGNATURE and intelligent LG ThinQ brands are familiar names world over. Visit www.LGnewsroom.com for the latest news.

About LG Electronics Home Appliance & Air Solution Company

The LG Home Appliance & Air Solution Company is a global leader in home appliances, smart home solutions, air solutions as well as visionary products featuring LG ThinQ AI. The company is creating various solutions with its industry leading core technologies and is committed to making life better and healthier for consumers by developing thoughtfully designed kitchen appliances, living appliances, HVAC and air purification solutions. Together, these products deliver enhanced convenience, superb performance, efficient operation and compelling health benefits.

About LG Electronics Singapore Pte Ltd

LG Electronics Singapore Pte Ltd (LG Electronics Singapore) is a fully-owned subsidiary of LG Electronics Inc., the pioneer and market leader of the Korean electronics industry. LG Electronics Singapore operates three business units – Home Entertainment, Mobile Communications and Home Appliance & Air Solution. In recognition of its vision to enrich people's life with smart technologies and innovative design, LG Electronics Singapore has been recognized with prominent local and international accolades, such as the CNET Asia Editor's and Readers' Choice Awards, HWM+HardwareZone.com Tech Awards, Red Dot Design, and GfK No. 1 Awards. For more information, please visit www.lg.com/sg.

Adoption of ESG metrics in executive incentives by APAC companies increases, WTW study finds

Companies in Energy, Real Estate and Industrials see the highest increased use of ESG measures in 2023

There is continued increase in the adoption of Environmental, Social and Governance (ESG) measures in executive incentive plans across markets, including Asia Pacific (APAC), according to a new global study by WTW (NASDAQ: WTW), a leading global advisory, broking and solutions company. Overall, the number of leading companies in APAC incorporating ESG metrics increased by 14% in 2023 over the previous year (from 63% in 2022 to 77% in 2023).

Of the top 352 companies in APAC, 264 companies disclosed the metrics they use in executive incentive plans. While all European and North American companies disclose some information about the metrics used in incentive plans, only three-quarters of the APAC companies did. WTW's analysis of companies in Australia, China, Hong Kong, India, Japan, Malaysia and Singapore shows a large disparity in the use of ESG metrics across the region, with the highest prevalence observed in Australia, Japan and Singapore. In these three countries, the use of ESG metrics is comparable to Europe and North America. In other parts of APAC, disclosures on executive incentive design and use of ESG metrics is often inconsistent.

Markets	Percentage of companies that incorporate ESG metrics in their incentive plans
APAC average	77%
(n = 264)	
Australia	86%
(n= 100)	
China	29%
(n = 7)	
Hong Kong	55%
(n = 11)	
India	56%
(n = 9)	
Japan	72%
(n = 100)	
Malaysia	63%
(n = 8)	
Singapore	93%
(n = 30)	

Figure 1: Prevalence of ESG metrics in executive incentive plans in APAC in 2023

(*n* = number of companies and those that disclose information about the use of metrics)

"The use of ESG measures in executive incentive plans in APAC are considerably influenced by the level of disclosure requirements in each country. In the region, Australia, Japan and Singapore continue to emerge as market leaders in the disclosure of metrics used and the integration of ESG measures into executive incentives.

"Although disclosures are not as strong in markets China, Hong Kong, India and Malaysia, we see leading companies picking up pace in their ESG commitments and aligning business practices with ESG priorities," said Zhu Xujing, Asia Pacific Leader, Executive Compensation and Board Advisory, WTW.

While growth is occurring in both short-term and long-term incentive plans (STI and LTI), most of that is happening in short-term incentive plans. In APAC, two-thirds of the companies reported using at least one ESG metric in their STI plans, an increase of 15% from previous year. On the other hand, about one-third (30%) of all top APAC companies included ESG metrics in their LTI plans. "Companies in consumer staples, energy, financials and utilities were more likely to adopt ESG metrics than other industries in past year. This year, we see a marked increase in the use of ESG metrics in both real-estate and communication services, in addition to companies in energy and the industrial sectors in APAC," added Xujing.

Metrics in the Social category saw the most significant increase in APAC, and human capital-related measures remain the most popular with 57% of the companies including that in their incentive plans. Compared to previous year, the use of Environmental metric rose from 28% to 39%, Social metric rose from 47% to 60%, and Governance metric rose from 31% to 36%. People and HR measures, such as employee engagement, continue to be the most commonly used in the Social category, followed by safety-related measures tied to minimising incidents. Measures related to carbon or CHG emissions are the most used Environmental metrics according to the disclosures by companies.

"We continue to observe keen interest from institutional investors to articulate how ESG and sustainability priorities drive long-term sustainable value creation. Increasingly, there is more pressure on ESG-related disclosures and progressive sustainability practices across markets in APAC. More and more companies are incorporating executive incentives with ESG measures, and Remuneration Committees see this as an important tool to ensure alignment with interests of all stakeholders, including long-term interests of shareholders," said Shai Ganu, Managing Director and Global Practice Leader, Executive Compensation and Board Advisory, WTW.

About the study

This research study reviews public disclosures from 1146 companies listed in the S&P 500, TSX 60 in Canada, nine major European indices including the FTSE 100, and 352 of the largest companies across seven markets in the Asia Pacific region. These include companies in communication services, consumer discretionary, consumer staples, energy, financials, healthcare, industrials, IT, materials, real-estate and utilities industries.

About WTW:

At WTW (NASDAQ: WTW), we provide data-driven, insight-led solutions in the areas of people, risk and capital. Leveraging the global view and local expertise of our colleagues serving 140 countries and markets, we help organizations sharpen their strategy, enhance organizational resilience, motivate their workforce and maximize performance. Working shoulder to shoulder with our clients, we uncover opportunities for sustainable success—and provide perspective that moves you. Learn more at wtwco.com.

EVENT LISTING

EVENT NAME	VENUE	DATE	
Geo-Connect Asia 2024	Singapore	6 th - 7 th March, 2024	
Plastic: Remaking our world	Singapore	9 th March – 23 rd June 2024	
BuildTech Asia	Singapore	19 th - 21 st March	
Renewable Energy Expo	Hanoi, Vietnam	20 th - 21 st March, 2024	
World Battery and Energy Storage Industry Expo	Guangzhou, China	8 th - 10 th August, 2024	





Fazer invites Singapore to taste the future with worldfirst chocolate snack bar powered by Solein[®]

• Fazer offers Singaporean consumers the first taste of Solein - protein created out of thin air without agriculture - in the form of a chocolate snack bar

• Fazer is the first FMCG company ever offering products including Solein to retail consumers, available at The Cocoa Trees stores across Singapore

• Limited edition Taste the Future chocolate snack bar powered by Solein is rich in iron and fibre

• Fazer has invested in Solein by Solar Foods to fulfil its ambition to be an innovative leader. Fazer invests in research and development in line with its strategic priority of accelerating growth through innovations, on-trend categories and foodtech

Fazer, a Finnish Food Experience company, introduced today a limited-edition chocolate snack bar as part of its pledge to encourage its customers to taste the future. Fazer will give people the opportunity to taste for the first time a retail consumer product including Solein by Solar Foods, a Finnish food technology company on a mission to revolutionise global food production. Fazer's chocolate snack bar will be offered at The Cocoa Trees stores through its partnership with FNA Group, a Singaporean distributor.

The limited edition dark chocolate, strawberries and hazelnut snack bar contains oat puffs that are high in fibre and is powered by Solein, a highly functional, nutritious and versatile ingredient. In Fazer Taste the Future chocolate snack bar, Solein enriches the flavours and makes it high in iron. Solein received its novel regulatory approval in Singapore in 2022, marking a significant step toward achieving the country's target of producing 30% of Singapore's nutritional needs by 2030. This is also the first time Solein[®] is available for people to try it within a FMCG product.

"Singapore is the perfect test ground for our Taste the Future Chocolate Snack Bar, with a highly innovative food ecosystem and people who are not only passionate about food, but curious to try new things that are new, with nutrition and sustainability benefits. We at Fazer are dedicated to leading the food industry to a viable future and are constantly looking at how we can improve our own sustainability and impact the future of the food industry as a whole," said Heli Anttila, VP, New Product Development at Fazer Confectionery.

Fazer is the biggest shareholder of Solar Foods and has been working hand-in-hand with the R&D team on product development for Fazer. Solar Foods' Factory 01 will be complete in H1 2024, so this limited edition run of a consumer snack bar containing the nutritious ingredient will provide a good testing ground for future market roll outs once Solein is in full production. This is in line with reducing Fazer's own emissions and creating products that are 100% sustainably sourced for a more viable future for the food industry as a whole.

"This is an exciting moment for us working with Fazer - the very first time people can try Solein within a consumer snack bar. This also demonstrates the potential of Solein[®] as a sustainable and nutritious fortifier. With this introduction in Singapore, we are getting valuable customer feedback on Solein's viability in a new product category and also get a sense of the consumer acceptance of future ingredients. Our shared aim extends beyond this pivotal moment, targeting a wider scale European launch in 2025-2026 with a whole range of products," said **Pasi Vainikka, CEO at Solar Foods**.

Fazer has been in Singapore for almost 30 years, with FNA Group as their distributor. Fazer's range of chocolate and snack products have been available across the city state within The Cocoa Trees

stores and at Changi Airport. Throughout the years, The Cocoa Trees has not only established itself as a leading confectionery and snacks retailer but also as a brand that is synonymous with gifting occasions.

"Fazer has been a long-term partner and we have seen the brand grow in popularity in the Singapore market during that time. It's no secret that Singaporeans are adventurous and passionate when it comes to food, so Fazer's introduction of this sustainable, delicious and nutritious chocolate snack bar is bound to excite them. I look forward to seeing what the response is in store over the coming weeks," said Pamela Loo-Song, Director, Retail & Local Sales, The Cocoa Trees Singapore.

Customers are invited to taste the bar at a one-time public sampling opportunity this Saturday (20 January) between 12pm and 4pm at The Cocoa Trees store at Raffles City Shopping Centre. From now to 18 February, customers will also get to redeem their own Taste the Future snack bar with every \$30 spent in store on Fazer products, while stocks last.

About Fazer:

Fazer, The Food Experience Company, enables people to enjoy the best moments of their day. Our mission, Food with a purpose, builds on our strong 130-year heritage, consumer first approach and innovations to create the sustainable food solutions of the future. With our dedicated team of approximately 5,000 professionals, we focus on fast-moving consumer goods and our direct-to-consumer business in Northern Europe, and beyond with exports to some 40 different countries. Fazer's operations comply with its Code of Conduct that is based on the Group's values and the UN Global Compact. In 2022, Fazer Group had net sales of 1.1 billion euros.

About The Cocoa Trees, FNA Group:

Since the inception of Focus Network Agencies (FNA Group International) on 1 October 1991, Mr and Mrs Loo, together with a team of committed staff and partners, have steadfastly grown the business from a distributor of just 2 agency lines to a recognized leader in the distribution and retailing of chocolate and confectionery in the Asia Pacific realm. https://www.fnagroup.com.sg/

Founded under the esteemed banner of FNA Group International, The Cocoa Trees stands as an emblem of trust, quality, and approachability in the confectionery realm. With a singular focus on offering exceptional chocolates, the brand has flourished, bearing testament to its unwavering commitment to excellence. With over 20 stores across Singapore and representing more than 60 globally acclaimed confectionery brands, The Cocoa Trees is dedicated to delighting every customer with a curated selection of the world's finest chocolates.

About Solar Foods:

Solar Foods is a food-tech company that develops revolutionary innovations for the global food industry. Solar Foods produces a protein called Solein[®] using air-captured carbon dioxide and electricity. Solein production, independent of weather and climate conditions, liberates global protein production from the limits of traditional agriculture. Solein can be produced in harsh environments, such as desert and Arctic areas or even outer space, where traditional food production is not possible.

Solein[®] is a registered trademark of Solar Foods. www.solarfoods.com I www.solein.com

Taste the Future info box - elevator pitch & facts

Fazer Taste the Future chocolate snack bar, 44 g

• *Fazer Taste the Future snack bar* is a dark chocolate snack bar with hazelnut, dried strawberries and Solein[®]. In chocolate cocoa solids 70% minimum.

• The snack bar contains 2% Solein grown with CO2 and electricity.

• Singapore is the only country in the world with a novel food approval in 2022 for Solein, microbial protein rich powder.

• Fazer is the first FMCG company introducing the Solein product to the world in Singapore.

• Solein[®] is a highly functional, nutritious and versatile ingredient. In Fazer Taste the Future chocolate snack bar Solein enriches the flavours and makes the snack bar high in iron.

• Fazer Taste the Future snack bar contains crunchy oat puffs created by Fazer Lab, Fazer's R&D and foodtech innovation unit. Oat puffs of Nordic origin make the chocolate snack bar high in fibre.

• Taste the Future snack bar is vegan friendly and palm oil free. All Fazer's chocolates are made from 100% responsibly produced cocoa.

• Handmade Fazer Taste the Future snack bars have been produced as a limited edition in Helsinki, Finland. The handmade snack bars will be available as a part of bundle offer in selected Coconut Trees stores in Singapore from 18 January 2024.

What is Solein[®]?

Solein is a protein grown without agriculture. It is nutritionally rich. It can taste and look like anything you use it for. It is unparalleled in its functionality – it can be used in any food, regardless of diet. Solein is a novel protein grown out of thin air. Solein is produced by Finnish company Solar Foods. It originates from a natural, unmodified, single-cell organism. Instead of watering and fertilising the organism, Solein is created by a fermentation process that utilises air and electricity as its primary resources.

Solein is one of the most sustainable proteins in the world - Solein is grown without agriculture. It only needs a tiny fraction of the land, water, and energy compared to animal or plant production.

Solein is a nutritious goodness - Solein is an extremely diverse protein ingredient. It also provides iron, fibre, and B vitamins. For Fazer Taste the Future chocolate snack bar, Solein brings iron which is usually lacking in plant-based diets.

Solein in Singapore - Solar Foods received the first novel food regulatory approval for Solein[®] on 29 September 2022 in Singapore from the Singapore Food Agency (SFA).



Green In Future is a novel venture of like-minded professionals with

achieving a sustainable future as the target. Among the many services provided, the diffusion of technology to as many as possible and as far as possible, educating and generating awareness by being the link between the producer and the user, giving adequate training to the interested to adopt an innovation in Urban Landscaping, Urban farming, Education, Environmental issues and Health etc. are in the forefront.

For further details, please contact:

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