

The background of the entire page is a scenic landscape photograph. It shows a deep valley with a river flowing through it. A stone bridge is visible in the lower right. The mountains are rugged, with some peaks covered in snow or light-colored rock. The sky is blue with soft, white clouds. The overall tone is peaceful and natural.

Green Pulse

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Mother Nature is the most beautiful and the most patient - the most patient to educate, to heal, in resilience and in generosity. And it has always been our responsibility to not only respect and protect her but also to learn from her.

As the new year is upon us, let us choose to reflect and integrate, in our daily lives, on the teachings from those before us and those with us who are accountable to preserve her for our future generations.

-Green in Future

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at COP28

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INTRODUCTION

SAP Business Women Network Singapore, a group that works towards gender equality and help women advance their careers co-hosted the Year End Fund Raising Bazaar and Networking event in collaboration with Women at Amazon Singapore.

Green in Future participated as a vendor at the event and displayed terrariums to further our focus on adopting sustainability and green initiatives into our daily lives. We found many interested to beautify their surrounding working environment with a little bit of green and were also interested in the workshops we offer in this regard.



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Upcycling workshops



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The Earthshot Prize Awards 2023 – A week of thought – leadership, innovation and impact

In partnership with Temasek Trust, Temasek, GenZero and Conservation International, The Earthshot Prize was in Singapore for a week-long celebration

The Earthshot Prize, founded in 2020 by Prince William, aimed at tackling climate change and protecting the planet, supports initiatives with innovative solutions by awarding them financial aid to further their ventures. The annual award recognises and rewards one million pounds to five exemplary projects that showcase work on solving key environmental issues.

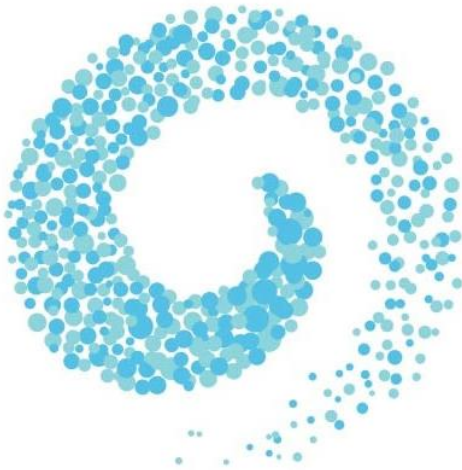
A total of 15 finalists attended the event showcasing projects under five categories: creating a waste-free world, cleaning the air, fixing the climate, reviving oceans, and protecting and restoring nature. And the five winners of the 2023 Earthshot Prize were [Acción Andina](#), [GRST](#), [WildAid Marine Program](#), [S4S Technologies](#), and [Boomitra](#). Prince William himself visited Singapore for the event and was part of the deciding jury along with the prestigious Earthshot Prize Council.

Hosted by celebrities Hannah Waddingham and Sterling K. Brown, and filmed at the Mediacorp Theatre in Singapore, the awards ceremony highlighted the stories of all of the 15 Finalists eligible for this year's Prize. The event was attended by some world-renowned celebrities and featured performances from some of the world's most exciting artists and performers.

In addition to the Prize's investment in the five Winners, all 15 Finalists will receive a year-long programme of mentorship, resources, and technical support from The Earthshot Prize Fellowship Programme. This is to further their efforts at saving the planet and includes access to the Prize's network of influential experts.



Acción Andina, co-founded by non-profit organisations Global Forest Generation and Asociación Ecosistemas Andinos, unites tens of thousands of people in local and indigenous communities to protect and restore the native forests and ecosystems. The initiative provides critical resources including salary support, project and financial management, and technical training for local conservation leaders, organizations and communities to grow long-term land protection and restoration activities. Acción Andina works closely with local communities in the high Andes to carry out conservation activities, building powerful partnerships for future land and resource management. Since 2018, almost 10 million native trees have been planted across five countries – restoring over 4,000 hectares of Andean forests and protecting more than 11,000 hectares of native forest. By 2045, they aim to protect and restore one million hectares of high Andean, native forest ecosystems across Argentina, Bolivia, Chile, Colombia, Ecuador, Peru and Venezuela.



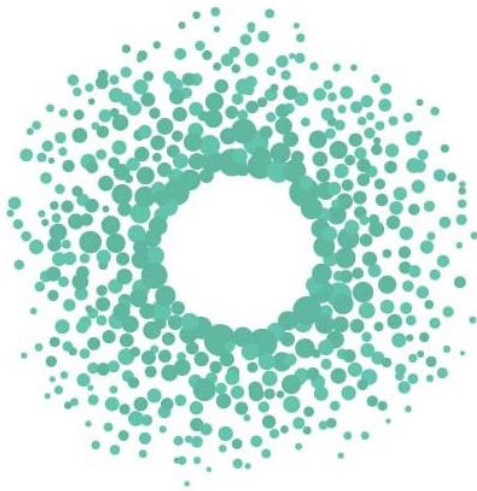
CLEAN OUR AIR

Co-founded by Justin Hung, GRST (which stands for Green, Renewable, Sustainable Technology) has come up with a cleaner process to make batteries that pollutes less and uses components that can be more easily recycled. Instead of using toxic solvents and hard-to-recycle materials, GRST has created a way to build the battery using a water-soluble binding composite, so that at the end of the battery's life, the lithium, cobalt and nickel can be more economically recovered and reused again in another battery, reducing demand for further extraction. Their method reduces greenhouse gas emissions from production by 40% and produces a battery that lasts up to 10% longer than average – characteristics that will accelerate the adoption of electric vehicles and enable more people to breathe cleaner air. GRST batteries are already being sold in multiple countries. Following the recent completion of a new factory, GRST is ready to scale the battery technology. They are targeting a five percent share of the global green battery market by 2030 and aim to establish several circular supply chains over the next few years.

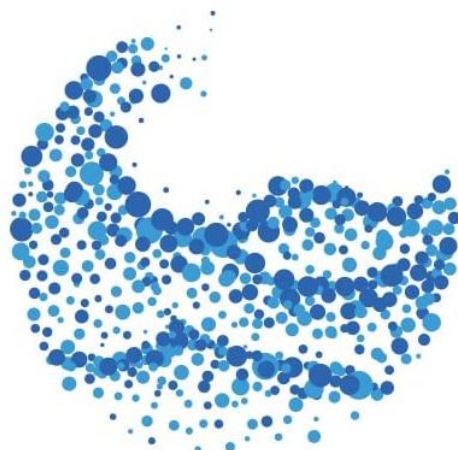


BUILD A WASTE-FREE WORLD

Founded in 2013 by six university friends S4S Technologies combats food waste, rural poverty, and gender inequality by helping smallholder female farmers preserve and market surplus produce. The organisation provides rural communities with cheaper solar-powered conduction dryers and food processing equipment to prepare their crops on-site. With a focus on supporting female farmers, S4S also supports its entrepreneurs in using the preserved waste to produce and sell valuable food products, such as ketchup. S4S creates a market, connecting commercial buyers to these products and returning most of the profits to the farmers who made them. Some 300,000 women smallholder farmers supported by S4S have recorded 10-15% increases in their profits, while the 2,000 female entrepreneurs they partner with have seen incomes double or even triple. By 2025, S4S wants to extend their reach to three million smallholder farmers and 30,000 entrepreneurs. By 2026, they predict they will have reduced food waste by 1.2 million tonnes and removed the equivalent of 10 million tonnes of CO2 from the atmosphere.



FIX OUR CLIMATE



REVIVE OUR OCEANS

Boomitra, which means “friend of the earth” in Sanskrit, is a soil carbon marketplace that rewards farmers for sustainable land management practices. The company works with more than 150,000 farmers, from half-acre smallholder farms to large ranchers, managing more than five million acres of land in some of the poorest parts of Africa, South America and Asia. Satellites and AI technology are used to monitor improvements farmers make to the soil, tracking its ability to store carbon over time. In exchange, companies and governments looking to offset their emissions can purchase independently verified carbon credits from Boomitra’s marketplace, with the majority of the revenue from each credit going directly to the farmers and ranchers. As Boomitra aims to scale their solution across the world, they have set a target to store one gigaton of CO₂ in the soil by 2030. Moreover, the sustainable farming techniques restore soil health, increase crop yields and generate more revenue. Farmers also earn new, additional income from a 70% share in Boomitra’s profits.

WildAid, a global conservation non-profit, has a plan to bolster the effectiveness of MPAs and sustainable fisheries through its Marine Programme. Led by Meaghan Brosnan, the programme unites a range of partners — from governments to charities to non-profits and academics — to exchange knowledge and tailor actions for each region. Its approach builds law enforcement capacity by making sure people have the tools, technology and resources needed to deter illegal fishing, allow wildlife to recover and improve coastal community livelihoods. The programme, currently working with a significant proportion of already established MPAs and fisheries management areas, covers an estimated 1.64 million square kilometres of ocean. With operations in Palau, Zanzibar, Mexico and beyond, WildAid is championing and strengthening ocean conservation in every corner of the globe. And with a target to grow to 250 priority marine areas in the next five years, it’s just getting started.

“The Earth is at a tipping point. We face a stark choice: either we continue as we are and irreparably damage our planet, or we remember our unique power as humans and our continual ability to lead, innovate and problem-solve. People can achieve great things. The next ten years present us with one of our greatest tests – a decade of action to repair the Earth.” – **Prince William**, Founder and President

Data and Photo Credits - <https://earthshotprize.org>

Rodrigo Fernandes

Rodrigo Fernandes is director of ES(D)G (Empowering Sustainable Development Goals) at Bentley Systems, leading the company's sustainability business strategy and initiatives. Rodrigo's charter is to empower sustainable development goals through Bentley software and services, evangelize Bentley's *handprint*, and advocate for a sustainability culture.

Rodrigo Fernandes talks to Green In Future on the company and its significance today in infrastructure and his views on sustainability and its significance today.



What is your role in Bentley? How is sustainability is being preached and incorporated in Bentley?

I am the Director of ESDG – ESG (Empowering Social and Governance) and SDG (Sustainable Development Goals). By combining the two, we have the responsibility as any other company to protect and as a software development company working for infrastructure professionals, knowing that infrastructure is responsible for a big amount of carbon footprint among other aspects. We do think we can help empower sustainability goals and help our users in achieving their SDGs with our technology.

My role is bridging the gap between users on their ambitions and needs on sustainability and what we offer them. So I need to collect information from users and bring it to product teams and bring new solutions from product teams and accelerate their adoption to users keeping sustainability as a focus. Another part is advertising these services that have been successful to our users to other potential users. The third part is educating the culture of sustainability within the company so bridging the gap becomes effective.

We also need to as a company see that ESG goals are being met within the company. If we offer such services to others to bring positive impact, we also need to manage our company's footprint. Strategizing so we can

help our users on achieving their goals, that is my role.

Share some points on how infrastructure companies integrate sustainability in their project's portfolio, how can these steps be adopted into other companies?

Some organisations pave the way for others to adopt similar services. We use what our users are using, and as a story-telling process, take it to other companies to create the awareness and interest and accelerate the adoption of our services to others, so over the course of time, the innovation becomes the norm. This helps to identify the carbon handprint, but more importantly identify their limitations and needs, things they are not doing, where we could also help or support them.

Another aspect is that there may be some solutions that we don't have, which the customers require and looking at the demand, we take it to the product teams to prioritise and develop appropriate services. Emphasizing the positives of what our services have achieved or helped but also identifying the places where we can add more so we develop our array of services, and it is user-centric – this is the two sides of a coin.

Share an example of a project where Bentley was involved in creating some

changes that helped to make a huge difference in the sustainability field.

We are always looking to creating new capabilities rather than changing what we are already doing. Some cases need small changes and adjustments to something we already offer whereas others require disruptive changes, where we need to change the whole technology.

Like when it comes to construction and embodied carbon, two years ago, we were doing a market survey for solutions, trying to find from different sectors and different project managements about embodied carbon calculation. There were many companies who were asking for this calculation, but we didn't have it at the time. When the users were asked, the urgency and need for it was different in different regions, and I realised the need to do something in this regard as soon as possible. The best method was to centralise the platform by providing the carbon calculator in infrastructure industry under Bentley and we found that approaching a third-party organisation that were the experts in the area and collaborating with them was the best possible solution. Partnering with an expert is faster and the risks were lowered when exploring this dimension. We could use this carbon reporting and visualising carbon inside IT technologies in all our infrastructure projects

and we also had success in terms that there were many early adopters from various sectors. This was because where previously it used to take six months of manual information collection from all vendors, manufacturers, construction companies, etc. and then tabulate and compile them and generate the carbon calculation, it now took only 10 minutes. We had already automated the process of generating the BOQ for calculating carbon, but aggregating and validating the information was a tedious task which became simple with this software.

So, in this case it was a disruptive change that we would like to see become the norm. And now our focus is on software for calculating operational carbon emission reports.

What is your view of Singapore's growth in sustainability measures?

Singapore demonstrates pushing boundaries through double transition – digital transition working hand in hand with sustainable transition. It's amazing how a small country, a city nation, can have so many diverse projects and technology in that aspect. These measures should be commended and promoted as it is a blueprint for many other countries, other organisations. This will be helpful for me to take to COP28, to showcase such and many other examples, how using technologies like digital twins work.

Rodrigo Fernandes has a Ph.D. in environmental engineering and has designed and managed over 20 European innovation projects on modeling water resources and environmental safety issues, authoring +30 peer-reviewed papers. He attended COP28 recently held at Dubai this year and was a speaker at many forums. He has shared the following opinion article on infrastructure, decarbonisation and digital twin technology.

Infrastructure is warming our world. There is still time to change that.

I have been passionate about the environment since I started working on a research and development team for ecology and marine resources 20 years ago. The research center director was my environmental engineering Ph.D. supervisor and a great mentor. He told me many times that “the most valuable asset of any organization is its soul: a shared purpose, built around an audacious goal and a set of common values.” His words made an immediate and significant impact on me.

COP28, the annual UN global climate conference, gives me a sense of shared purpose and call to action, serving as my guide. As an environmental engineer working in the infrastructure sector, I have a responsibility to explain the critical role that infrastructure plays—both as a cause and as a solution for climate change.

Infrastructure is the physical fabric of our society. And it is more than just the things you can see, such as roads, bridges and the buildings that surround us. It is the outputs and outcomes that communities and economies depend on, from reliable power to affordable transportation to clean and safe drinking water.

But there is a catch. The negative environmental effects of infrastructure in the industrial age are cumulative and can no longer be ignored. Today, infrastructure is responsible for 79% of total greenhouse gas emissions and 88% of all adaptation costs, and it consumes 60% of all the world’s materials. Further, a new modeling study suggests that air pollution from using fossil fuels in industry, power generation, and transportation is killing 5 million people worldwide annually—nearly 10 people per minute. So, it is not an exaggeration to say that **infrastructure defines our climate and will affect what happens next.**

This year, COP28 marks the halfway point between when the Paris Agreement was established and its 2030 targets. The world is watching as climate leaders assess our progress toward reaching these goals. A new report from the United Nations says national climate plans are not on track to limit global temperature rise to 1.5 degrees Celsius. In fact, the scenario of a disastrous global heating surpassing 2 degrees is very real, and it is currently set to rise more than 3 degrees.

So, there is intense pressure on infrastructure professionals. They are being asked to lead a monumental effort to decarbonize and climate-proof our infrastructure on a scale and pace never seen before. But the obstacles to these tasks are many, including a lack of engineers to perform this important work and challenges in aligning the necessary resources, which lead to cost and schedule overruns. As industries strive to reach ambitious net-zero emissions goals, optimizing capital expenditure investments and accelerating project execution are crucial.

Despite these challenges, I remain optimistic. Looking at this from an engineer’s perspective, I see problems waiting to be solved with technology. By combining engineering data with sensor and other data, we can recreate physical infrastructure in the digital world (which we call infrastructure digital twins) and transform the conversation. We can leverage artificial intelligence (AI), Internet of Things (IoT), modeling, simulation, and analysis to accelerate progress toward sustainability goals by anticipating, preventing, and adapting to climate risks.

One example is decarbonizing existing infrastructure. By remotely monitoring existing assets—such as dams, bridges, water and electrical grids, district heating systems, or offshore wind platforms—with an infrastructure digital twin, engineers can reduce energy consumption or the frequency of physical inspections and maintenance and, thus, reduce the carbon footprint.

When building new infrastructure, decarbonization and de-risking projects must be the priorities. With AI-powered digital twins, we can calculate and analyze the carbon and material footprint of any type of infrastructure asset in the design stage before it is even built, allowing engineers to optimize designs to ensure the lowest carbon and material outcome possible. Better information, and the ability to collaborate around it virtually, also helps reduce the risks of budget overruns and delays, a serious threat to hyperscale green capital projects that are critical to meet net-zero emissions targets.

Finally, we need to go beyond decarbonizing and do a better job at adapting infrastructure to climate change effects, protecting people and saving our limited natural resources, such as water. The increased intensity, frequency, and duration of climate hazards—such as heatwaves, droughts, floods, and storms—are increasing risks for infrastructure, and stressing the natural resources. In 2022 alone, climate disasters caused nearly 32 million internal displacements worldwide—more than displacements due to armed conflict, and an increase of nearly 43% over the previous year's levels. With digital twins, we can intelligently monitor natural systems, such as tree coverage to address urban heat islands, or anticipate structural problems in critical assets, such as detecting and preventing pipe leaks, to help increase resilience.

The magnitude of transformation required means that no organization can do it alone. At COP28, governments, businesses, NGOs, and other leaders will need to embrace the role of technology in addressing our infrastructure challenges to meet sustainability goals. It is time to take bold steps and work together with a shared purpose to decarbonize the world and lead the way to a more sustainable, resilient and equitable future.

The Decade to Deliver: DPM Heng Swee Keat calls for urgent action and perspective shift to meet 2030 Agenda

Minister Grace Fu congratulates 'sustainability trailblazers' at the 2023 Singapore Apex Corporate Sustainability Awards

The UN Global Compact Network Singapore (GCNS) hosted an impactful two-day event in Singapore, starting with the 15th GCNS Summit on the 2nd of November, followed by the 8th Singapore Apex Corporate Sustainability Awards Ceremony 2023 on the 3rd of November.

15th GCNS Summit Highlights

Kicking off the two-day event, the 15th edition of the GCNS Summit welcomed over 300 business leaders, policymakers and academia working to advance corporate sustainability. Themed "The Decade to Deliver: Raising the Bar on Sustainability Ambition", the Summit underscored the need for urgent action in achieving the Sustainable Development Goals (SDGs) by 2030.

Deputy Prime Minister and Coordinating Minister for Economic Policies, Mr Heng Swee Keat, the Guest of Honour participated in a fireside chat titled "Sustainability in Uncertain Times: Bridging Complexity with Uncertainty" with Dr. Bicky Bhangu, President, GCNS.

Diverse topics were discussed by prominent speakers, such as 'Transition Pathways and their Critical Contribution in Delivering Net Zero Ambition' and 'The Role of AI in Business Sustainability'. Some of the speakers included Melissa Moi, Head of Sustainable Business, UOB, Ted Howland, Vice President of Group Sustainability at CapitaLand Investment, Yuki Yasui, Managing Director, Asia Pacific Network, Glasgow Financial Alliance for Net Zero (GFANZ), Professor Lynn Loo, Chief Executive Officer, Global Centre for Maritime Decarbonisation (GCMD) and various experts from organisations like the Global Centre for Maritime Decarbonisation and NCS Group.

The three breakout sessions were supported by our partners Accenture Singapore, CDP and Wealth Management Institute (WMI), while other event partners were Infocomm Media Development Authority (IMDA) and Enterprise SG.

The event also featured the 2023 CDL-GCNS Young SDG Leaders Award, offering young people a platform to champion sustainable development and SDG integration into business for positive change. The Champion this year was team Green Phenomena from Nanyang Technological University.

Speaking at this year's event, Dr Bicky Bhangu, President, GCNS, "We must act more urgently and boldly to address global challenges. We share the responsibility for a better future and must take action now. Collaboration between regulators, financial actors, businesses, and the public sector is essential to achieve the 2030 Sustainable Development Agenda. GCNS advocates a comprehensive approach to corporate sustainability, emphasising the importance of partnerships and collaborations."

"Companies have a leading role to play in sustainability. Sustainability is also a company's passport to operate, succeed and attract in the future. The UN Global Compact is the only common grammar shared by companies to work together on a more sustainable world and represents a powerful collective effort by companies to advance human and labour rights, gender equality, environmental

protection, and ethical business practices, all anchored in the Ten Principles and the 17 UN Sustainable Development Goals”, Jean-Pascal Tricoire, Board Member, UNGC, stated.

8th Singapore Apex Corporate Sustainability Awards

The Summit was followed by the 8th Singapore Apex Corporate Sustainability Awards Ceremony 2023. **Minister for Sustainability and the Environment, Ms Grace Fu**, the Guest of Honour, shared insights into the critical role of businesses in achieving Sustainable Development Goals (SDGs) by 2030 in a fireside chat titled “Forward Faster Corporate Sustainability”.

The inaugural by-invite-only LowCarbonSG award category recognises businesses that have made outstanding improvements in their carbon emissions (at least 5% reduction in scope 1 and 2 emissions) over a 24-month period through a commendable level of effort and / or investment.

Other Singapore Apex Corporate Sustainability Awards categories include Sustainable Business – companies that demonstrate excellence in implementing sustainable business practices within the core operations, and Sustainable Solutions – companies that excel in developing products or services that address the sustainability needs of other businesses.

Apex Awards entries are independently assessed by our knowledge partners, Engie Impact (Sustainable Business), Frost & Sullivan (Sustainable Solutions) and the Newcastle Australia Institute of Higher Education (LowCarbonSG), who shortlist companies which meet the winning criteria. Following this, site visits or in-depth interviews are carried out with the shortlisted companies. The finalists present their case to a panel of experienced judges to decide the final winners via scoring and unanimous vote.

The coveted ‘Apex Winner’ title is awarded upon a unanimous agreement amongst the judges. In the Sustainable Business category, Apex Award Winner Daikin Airconditioning (Singapore) Pte Ltd won with its R32 Air Conditioning Inverter unit, the first to provide these in residential applications.



In the Sustainable Solutions category, the Apex Award Winner Rimm Sustainability Pte Ltd for its innovative SaaS platform that enables users to collect and analyse their ESG data, as well as benchmark against all of their peers, and then make sure they are in compliance with various sustainability standards.

Maxeon Solar Technologies Ltd was the other winner in the Sustainable Business category and Sembcorp Industries Ltd, Keppel Corporation Ltd, Matex Holdings Pte Ltd and Keppel Corporation Ltd in the Sustainable Solutions category.

In the inaugural LowCarbonSG category, Tru-Marine Pte Ltd stood out with its sustainable and decarbonisation training programme, while Ovol Singapore Pte Ltd was awarded for its fuel and emissions savings. Containers Printers Pte Ltd was awarded for its comprehensive range of green initiatives.

Applicants are invited to apply for the 2024 Awards as registrations will open via the website on 06 November.

Reflecting on the event, Esther Chang, Executive Director of GCNS, expressed gratitude to the speakers and attendees for their commitment to accelerating sustainability efforts and addressing global challenges collectively. “Tonight, our award recipients serve as prime examples of businesses thinking boldly and innovatively to help us make significant strides toward the SDGs. They are achieving this by collaborating with ecosystem partners to come up with new solutions and to amplify their impact.”

About UN Global Compact Network Singapore (GCNS)

UN Global Compact Network Singapore (GCNS) is the local chapter of the United Nations Global Compact. As the leading voice on corporate sustainability, GCNS drives multi-stakeholder action to forge a more sustainable future, founded on the Ten Principles of the United Nations Global Compact and the Sustainable Development Goals. Through various platforms and partnerships, GCNS advances the stewardship of sustainable business practices and Singapore’s national agenda of becoming a regional sustainable business hub.

For more information about GCNS, please visit: <https://unglobalcompact.sg/>

About the UN Global Compact Network Singapore Summit 2023

Despite being halfway to 2030, we are still not delivering on the SDGs ambition at the necessary pace and scale. Themed “The Decade to Deliver: Raising the Bar on Sustainability Ambition”, the event hosted Singapore’s Deputy Prime Minister Heng Swee Keat as the Guest of Honour, alongside distinguished industry leaders and sustainability experts.

For more information about the GCNS Summit 2023, please visit: <https://summit.unglobalcompact.sg/>

About Singapore Apex Corporate Sustainability Awards 2023

Organised by GCNS, the Singapore Apex Corporate Sustainability Awards is the most prestigious form of recognition for companies in Singapore on corporate sustainability. The Awards recognise companies whose business operations or solutions have demonstrated excellence in embodying the Ten Principles of the United Nations Global Compact, in the areas of environment, human rights, labour and anti-corruption. The Awards also recognise companies attaining the triple bottom line.

To learn more about the Singapore Apex Corporate Sustainability Awards, please visit:

<https://apexawards.unglobalcompact.sg/>

About the CDL-GCNS Young SDG Leader's Award

Jointly organised by City Developments Limited (CDL) and Global Compact Network Singapore (GCNS), this annual case competition offers young people a platform to champion sustainable development and SDG integration into business for positive change. Previously known as the CDL-GCNS Young CSR Leaders Award, the competition has nurtured over 2,400 young leaders since inception in 2011. By aligning with the global goals for sustainable development, the Award seeks to educate and empower young leaders with SDG knowledge and skills, while inspiring companies in Singapore to take concrete actions for the SDGs.

To find out more about the CDL and GCNS Young SDG Leader's Award, please visit: <https://cdlsustainability.com/sdg-stakeholder-partnerships/cdl-gcns-young-sdg-leadersaward/>

Singapore Apex Corporate Sustainability Awards 2023 Winners

Winners Profile – Sustainable Business Category 2023

1. Daikin Airconditioning (Singapore) Pte Ltd (**APEX Winner**)
2. Maxeon Solar Technologies Ltd

Winners Profile – Sustainable Solutions Category 2023

1. Rimm Sustainability Pte Ltd (**APEX Winner**)
2. Sembcorp Industries Ltd; Keppel Corporation Ltd
3. Matex Holdings Pte Ltd
4. Keppel Corporation Ltd

Winners Profile – LowCarbonSG Category 2023

1. Tru-Marine Pte Ltd; Containers Printers Pte Ltd
2. Ovol Singapore Pte Ltd
3. Containers Printers Pte Ltd

MINISTRY OF SUSTAINABILITY AND THE ENVIRONMENT RELEASES INAUGURAL GREENGOV.SG REPORT

~ Singapore is the first country in Southeast Asia to publish a report of the public sector's environmental sustainability performance ~

~ Public sector emissions were lower, but energy and water use increased marginally in FY2022 compared to the baseline ~

The Ministry of Sustainability and the Environment (MSE) has published the inaugural GreenGov.SG report, which details the emissions profile and resource footprint of the public sector for Financial Year (FY) 2022, which runs from 1 April 2022 to 31 March 2023. The launch of the report was announced by Senior Parliamentary Secretary of the Ministry of Sustainability and Environment Mr Baey Yam Keng at the “Charting towards Net-Zero in the Public Sector” event at Singapore Polytechnic today.

The GreenGov.SG report provides a snapshot of the public sector’s latest performance on greenhouse gas emissions, energy, and water use. It covers the public sector’s assets in Singapore, including office buildings, healthcare facilities, schools, public utilities installations, public transport infrastructure, and vehicles.

The report also sets out the public sector’s key strategies and initiatives to enhance environmental sustainability.

The report excludes performance data for waste. More time is needed to improve the public sector’s data collection processes for waste, as waste disposal is not metered, unlike electricity and water use. In addition, waste tends to be comingled at bin centres, making it more challenging to attribute the waste disposed to specific agencies in cases where agencies are co-located.

Formerly known as the ‘Public Sector Taking the Lead in Environmental Sustainability’ (PSTLES) initiative, GreenGov.SG was introduced in 2021 as a key enabler of the Singapore Green Plan 2030. Under GreenGov.SG, the public sector has committed to achieving net zero emissions around 2045, five years ahead of Singapore’s national target of net zero by 2050, reducing energy and water use by 10% and waste disposed of by 30% respectively in 2030. The public sector has put in measures to green our buildings and vehicle fleets, reduce waste, and increase coming years.

Report Findings

In FY2022, the public sector emitted 3.7 million tonnes of carbon dioxide equivalent. This is about 5.3 per cent lower than the FY2020 baseline. This decrease was mainly due to the decommissioning of the Tuas Incineration Plant in early 2022. The reduction in Scope 1 emissions from this facility outweighed the increase in electricity use and the associated Scope 2 emissions across the public sector due to the post-COVID-19 re-opening of the economy.

Overall, public sector emissions are expected to rise and peak around 2025, as more public infrastructure projects, including transportation, healthcare, waste management and water treatment facilities, are completed. As more of the envisaged emission reduction strategies get implemented, long term emissions are expected to reduce and trend towards net zero emissions around 2045.

Commenting on the inaugural report, Minister for Sustainability and the Environment, Ms Grace Fu said, “Singapore is among the earliest governments in the world to publish a report of the public sector’s environmental sustainability performance. This signifies our serious commitment for the Government to be part of our action climate agenda and deliver on our GreenGov initiatives. Like the private sector and the wider community, we are learning as we embark on our sustainability journey. We encourage everyone, individuals, businesses, NGOs and community groups to join us as we drive environmental sustainability and build a greener and more sustainable future for Singapore.”

Government Chief Sustainability Officer, who oversees the GreenGov.SG movement, Mr Lim Tuang Liang, said, “The public sector believes that transparency through reporting will spur agencies to continuously strive to minimise the environmental impact of their operations. By sharing examples of our sustainability initiatives, we also hope that others can undertake similar efforts, and also provide new ideas that the public sector can learn from.”

Reduce, replace, remove

Among the initiatives detailed within the report are how the public sector will reduce energy use, including by focusing on energy-efficient infrastructure and deploying alternative low-carbon energy sources. Notable goals include of solar energy by 2030. This effort will support the national target to deploy at least 2 GWp of solar energy that same year.

Initiatives to reduce water consumption will involve improving water efficiency in building designs and fittings, as well as using non-potable water in manufacturing process, cooling towers, and sanitation.

The report also recognises that residual emissions from essential public services, such as waste incineration and used water treatment, cannot be avoided immediately. To address these residual emissions, the public sector is exploring innovative solutions such as carbon capture, utilisation, and storage technology.

To complement the GreenGov.SG report, Statutory Boards will also publish annual environmental sustainability disclosures, starting in FY2024. These disclosures will provide greater detail on how Statutory Boards are doing their part to advance environmental sustainability.

The full FY2022 GreenGov.SG report is available on www.go.gov.sg/greengovsg-fy2022.

About the Ministry of Sustainability and the Environment

The Ministry of Sustainability and the Environment (MSE) is committed to providing Singaporeans with a clean and sustainable environment, and resilient supplies of safe food and water.

MSE works alongside its three statutory boards – the National Environment Agency (NEA), PUB, Singapore’s National Water Agency, and the Singapore Food Agency (SFA) – to achieve this mission through innovation, technology, and vibrant partnerships with the private, public, and people (3P) sectors.

For more information, please visit <http://www.mse.gov.sg>

Temasek Trust Strengthens The Earthshot Prize Ecosystem with Asia Expertise and Reach

- *Focus on spotlighting Asia in fight against climate change*
- *Multi-year partnership aims to unlock global learnings and insights to identify, scale, and celebrate innovative solutions and eco-innovators*
- *Temasek Trust will work alongside other like-minded partners of The Earthshot Prize to create platforms, infrastructure, and community-building initiatives to showcase and scale regional solutions for a more sustainable tomorrow*

Temasek Trust, philanthropic steward and ecosystem-builder for good, today announced that it has expanded its long-term partnership with The Earthshot Prize, an ambitious global platform dedicated to driving catalytic change to protect and restore our planet, by becoming a Founding Partner.



Temasek Trust brings significant expertise to The Earthshot Prize that will enhance the Prize's efforts to showcase and scale innovative solutions to restore the planet by drawing on the networks of Temasek Trust's ecosystem in Asia and beyond. Together, both organisations will work to spotlight this crucial region in the fight against climate change, while also unlocking global learnings and insights to identify, scale, and celebrate innovative solutions and eco-innovators.

By creating convening opportunities across Asia, and partnering around key initiatives such as Co-Axis, a digital impact marketplace by Temasek Trust, the two organisations will aim to connect eco-innovators with funders equally committed to driving impact.

Founded by Prince William in 2020, The Earthshot Prize is a prestigious environmental prize which aims to discover, celebrate, accelerate, and scale solutions that can help put the world firmly on a trajectory towards a stable climate, where communities, oceans and biodiversity thrive in harmony by 2030. The five 'Earthshots' – simple and ambitious goals to repair our planet – are: Protect and Restore Nature, Clean Our Air, Revive Our Oceans, Build a Waste-Free World and Fix Our Climate.

Mr. Desmond Kuek, CEO, Temasek Trust, said, "Asia has many ground-breaking, high-impact innovations which need to be showcased and scaled globally to accelerate positive change. Temasek Trust is committed to creating the platforms and infrastructure for this. Our multi-year collaboration with The Earthshot Prize is rooted in a shared bias for action and ambition in catalysing innovative solutions at scale to repair our planet. We look forward to cross-pollinating ideas with other ecosystem partners of The Earthshot Prize to spotlight and scale regional solutions for a more sustainable tomorrow."

Hannah Jones, CEO of The Earthshot Prize, said: "This evolution of our partnership with Temasek Trust, as they move from strategic partner to Founding Partner, underscores The Prize's determination to expand the impact of our work in Asia, spotlight and elevate the incredible climate innovations across the region, and cement the Prize's legacy in Singapore and beyond. Together we will work to catalyse funding to eco-innovators, convene partners within APAC and collaborate across our joint ecosystems to drive impact."

This year, for the first time, the awards ceremony will be accompanied by a series of events as part of Earthshot Week. Beginning 6 November, the week will see global leaders, businesses, and investors convene in Singapore to explore exciting opportunities with The Earthshot Prize Winners and Finalists, aimed at accelerating their solutions and bringing about tangible action to repair the planet. Members of the public will also be invited to experience local activations centred on the 2023 cohort of Earthshot solutions.

About Temasek Trust

Temasek Trust, established by Temasek Holdings, is a steward of philanthropic assets, advocate of sustainability and catalyst of positive impact. It provides governance and financial oversight of endowments for an ecosystem of entities with the shared purpose of building better for every generation by protecting the planet, uplifting communities, connecting people, and advancing capabilities. In forging new pathways for philanthropy and impact investing with like-minded partners, Temasek Trust aims to promote catalytic philanthropy as a force for good. For more information, visit www.temasektrust.org.sg.

About The Earthshot Prize:

Founded by Prince William and incubated in The Royal Foundation in 2020 for a year before becoming an independent platform/organisation, The Earthshot Prize is a global environmental prize and platform designed to discover, accelerate and scale ground-breaking solutions to repair and regenerate the planet. Inspired by President John F. Kennedy's Moonshot, which united millions of people around the goal of reaching the moon, The Earthshot Prize aims to catalyse an Earthshot challenge to urgently encourage and scale innovative solutions that can help put the world firmly on a trajectory towards a stable climate, where communities, oceans and biodiversity thrive in harmony by 2030. The five challenges are: Protect and Restore Nature; Clean Our Air; Revive Our Oceans; Build a Waste-Free World; and Fix Our Climate.

The Prize aims to turn the current pessimism surrounding environmental issues into optimism by championing inspiring leadership and helping to scale incredible cutting-edge solutions. It will discover 50 winners over 10 years with the power to repair the planet. More than an award, The Earthshot Prize works in partnership with a Global Alliance of Partners to support the scaling of the solutions discovered and selected each year.

For more information about The Earthshot Prize, visit: www.earthshotprize.org

The Global Alliance Founding Partners are a group of leading global organisations and philanthropists, which act as strategic funding partners to the Prize, including Aga Khan Development Network, Bezos Earth Fund, Bloomberg Philanthropies, Breakthrough Energy Foundation, Coleman Family Ventures, DP World in partnership with Dubai EXPO 2020, Eleven Eleven Foundation, Holch Povlsen Foundation, Jack Ma Foundation, Law Family Charitable Foundation, Legado Para A Juventude, Mastercard Center for Inclusive Growth, Marc and Lynne Benioff, Paul G. Allen Family Foundation, Rob Walton Foundation, Sandy and Paul Edgerley, Standard Chartered Bank, Temasek Trust, and Wyc Grousbeck and Emilia Fazzalari.

Global Alliance Partners are non-profit environment and sustainable development organisations that bring expertise, global reach and serve as nominating organisations each year. For a full list, see website: Global Alliance - Earthshot Prize.

Architecture & Building Services 2023 spotlights the importance of a safe and resilient Built Environment

Key leaders and experts in the Built Environment industry convened to discuss and address challenging issues in Singapore and the region

Architecture & Building Services (ABS) 2023, the region's mega-expo organised by Conference & Exhibition Management Services (CEMS) to serve the Built Environment industry, opened at the Marina Bay Sands Expo & Convention Centre to industry leaders, trade visitors, and conference delegates between 15th-17th November 2023.

In its 9th edition, themed **'Designing a Safe and Resilient Built Environment'**, ABS establishes itself as the premier gathering place to facilitate a dynamic and engaging platform for interaction between buyers and sellers. The show also hosted significant domestic and global entities in the integrated Built Environment sector, emphasising Architecture & Design, Facilities Management, and Safety & Security.

ABS presented six co-located specialised exhibitions this year – ArchXpo 2023, Design Asia 2023, International Facility Management Expo 2023 (iFaME), Fire & Disaster Asia 2023, Safety & Security Asia 2023, and Work Safe Asia 2023. Designed to address various pressing issues in the Built Environment sector, from obstacles and resolutions to emerging trends and innovations, these conferences served as vital channels for delegates, industry participants, and enterprises to exchange essential knowledge to drive the industry forward.



The 11 conferences that were held are:

Wednesday, 15 November 2023

- Temasek Polytechnic-SII Security Conference 2023 by Security Industry Institute (SII)
- REDAS Integrated Digital Delivery (IDD) Symposium 2023
- ASEAN Federation of Electrical Engineering Contractors (AFEEC) and the Federation of Asian and Pacific Electrical Contractors Associations (FAPECA) Conference 2023

Thursday, 16 November 2023

- 9th International Facility & Strata Management Conference (IFSMC) 2023
- 3rd ASEAN Young Architects & Designers Forum 2023
- Symposium On Workplace Safety & Health By WSH Asia

Friday, 17 November 2023

- WSH Forum for Waste Management Industry 2023
- ASC-IBPSA Singapore Joint Seminar 2023
- AWiCs Seminar 2023
- Cywareness
- UAP Singapore Chapter - ArchXpo Conference 2023

At the conference, Temasek Polytechnic solidified a strategic partnership with Certis by signing a Memorandum of Understanding (MOU). The agreement signifies a commitment to advancing professional growth and bolstering industry readiness. Through this collaboration, both organisations aim to facilitate mutual learning, skill development, and the creation of new career opportunities within the dynamic landscape of the security industry. Several new initiatives were also announced at the conference, including the launch of the Security Association Singapore Online Outcome-based Tender Generator and Repository (OBX) and the refreshed Security Industry Digital Plan (IDP) 2.0.

ABS 2023 is co-located with the inaugural Circular Cities Summit 1.0, to advance the concept of circular cities and to work towards achieving the United Nations' Sustainable Development Goals (SDGs), with a special emphasis on Goal 11 which is making cities and human settlements inclusive, safe, resilient and sustainable.

About CEMS Conference & Exhibition Management Services Pte Ltd

Established in 1980, CEMS is a regional organiser with a global perspective. A key player in the Meeting, Incentive, Convention and Exhibition (MICE) industry in Singapore, CEMS has vast knowledge and experience in organising and managing exhibitions, conferences and other special events for government agencies, associations and private enterprises, with business activities spanning across many countries in ASEAN including Singapore, Thailand, Malaysia, Myanmar and the Philippines, China in North Asia, and India, Sri Lanka, Bangladesh and Pakistan in the South Asia and, Africa. In October 1997, CEMS achieved the distinction of being the first professional conference and exhibition organiser in Singapore to obtain the ISO 9002 certification. For the past decade, CEMS has formed strategic partnerships with both local and international players to achieve mutually desirable goals in the MICE industry.

Circular Cities Summit Launches Global Circular Cities Network Pillared By World Professional Organisations

Aligning with United Nations Sustainable Development Goals (SDGs)

The inaugural **Circular Cities Summit 1.0 (CCS)**, themed “Game-Changing Innovations for Future Cities” will be held in Singapore on 14 and 15 November 2023. The summit marks the beginning of a transformative journey to advance the concept of circular cities and to work towards achieving the United Nations' Sustainable Development Goals (SDGs), with a special emphasis on Goal 11 which is making cities and human settlements inclusive, safe, resilient and sustainable.

A key highlight of the summit will be the signing of the all-important Memorandum of Understanding (MOU) by three world-leading professional organisations, namely International Federation of Landscape Architects¹ (IFLA), International Society of City and Regional Planners² (ISOCARP), and the World Federation of Engineering Organizations³ (WFEO). This MOU not only defines and reinforces the unique role of each profession but also celebrates their shared commitment to ethical practices that enhance the quality of life for humanity. The MOU signals to the world the significance of a united front in the battle against the global climate crisis, thus aligning with SDG 13 - Climate Action. This worldwide collaboration is supported by Knauf Insulation and Uniseal Global.

CCS 1.0 marks the recognition of the collaboration's tremendous potential and opportunity to contribute to the SDGs. **These 3 founding world professional organisations will embark on a world-first journey** to foster an enduring partnership aimed at shaping a sustainable future for the world we live in. **They have extended their collaboration to a dynamic initiative, the launch of the Circular Cities Network (CCN).** The mission of this network is to rally professionals from each of these world organisations and provide them with a shared platform for the exchange of circular ideas, thereby contributing to SDG 11 - Sustainable Cities and Communities. The organisations form the all-important founding pillars of this pioneering network.

The CCN heralds a significant stride towards a more sustainable future and aligns with several SDGs. It is poised to unite professionals from diverse fields, facilitating the exchange of innovative ideas and best practices (SDG 9 - Industry, Innovation, and Infrastructure). The network will serve as a hub for the exchange of knowledge, collaborative efforts, and groundbreaking innovations. The founding partners of this initiative, IFLA, ISOCARP and WFEO, are supported by Knauf Insulation and Uniseal Global.

CCN is formed to embody the summit's vision and to bear testament to the immense potential of collaboration, i.e., to achieve the SDGs. It offers a unique platform for professionals to collaborate on projects and initiatives, within cities and across borders. Members of CCN will have the opportunity to pool their knowledge and expertise, collaborate on research endeavours, and conceive innovative solutions to usher in a sustainable future.

With the launch of CCN, the organisers announced today their invitation to all professionals within the built environment industry to join the network which provides a unique opportunity for members to learn from one another and to collectively contribute to the cause of a sustainable future, in alignment with the United Nations' SDGs. The Circular Cities Network is a global community comprising cities, businesses, and organisations tirelessly committed to realising this circular economy vision. CCN encourages collaboration, facilitates knowledge sharing, and

champions advocacy, contributing to various SDGs such as SDG 17 - Partnerships for the Goals. CCN will offer an array of resources and tools to assist its members in their transition to more circular business practices.

Some key visions of the initiative will include that of a circular economy, now within grasp, aligning with SDG 12 - Responsible Consumption and Production. The vision allows the world to imagine a city where waste becomes a relic of the past. A place where materials are continually reused and recycled, where businesses and residents harmoniously work together to shape a more sustainable future.

The circular economy is not merely an admirable concept; it is an imperative one in line with the SDGs. The current linear economy is unsustainable where resources are depleting, and waste is accumulating at an alarming rate. The circular economy provides a holistic solution to these pressing issues. It can help the world reduce waste, conserve resources (SDG 6 - Clean Water and Sanitation), create jobs (SDG 8 - Decent Work and Economic Growth), and fortify professions.

CCS 2023 is expected to welcome and host some 800 conference delegates. For more information, please visit <https://www.circularcitysummit.com/>

Call to Action

Members of the built environment are invited to join the Circular Cities Network today and become a catalyst for a more sustainable future in alignment with the United Nations SDGs. By affiliating with the Circular Cities Network, sponsors and partners will:

- have access a global community of experts and practitioners
- be able to share insights and best practices
- collaborate on transformative projects that contribute to multiple SDGs
- forge connections across diverse fields and professions on a global scale
- advocate for the circular economy and sustainability, aligning with SDG 17
- promote their brand and products while contributing to SDG 12, and
- serve as CCN's seeding partners

The Circular Cities Network is an invaluable resource for individuals and organisations invested in the concept of the circular economy and is dedicated to contributing to the achievement of the United Nations Sustainable Development Goals.

Circulate Capital Announces Final Close of \$73 Million Climate Tech Fund, Bringing Total Assets Under Management to \$255 Million

Firm announces a \$7 million commitment from British International Investment (BII), its fourth investment from development finance institutions including IFC, EIB, and Proparco

Circulate Capital, a leading environmental impact investor advancing the circular economy for plastics in high-growth markets, announced today the final close of the Circulate Capital Ocean Fund I-B (CCOF I-B), bringing the fund's total AUM to \$73 million and the firm's total AUM to \$255 million. CCOF I-B invests in two complementary strategies aimed at tackling the plastic pollution crisis and fighting climate change:

- Circulate Capital Disrupt (CCD): climate-tech investments in breakthrough innovations that reduce the need for virgin plastics and limit greenhouse gas emissions across the sustainable fashion, biotech and AI, and smart materials sectors.
- Circulate Capital Recycling Supply Chains: growth investments that transform recycling and waste management supply chains in South and Southeast Asia (SSEA), scaling the highest-potential solutions and replicating their success.

Circulate Capital also announced today that it has secured a \$7 million commitment from BII, the UK's development finance institution (DFI) and impact investor. This marks the firm's fourth investment from a DFI, including the International Finance Corporation (IFC), the European Investment Bank (EIB), and Proparco, a subsidiary of the French AFD Group, with total commitments from DFIs now reaching \$32 million. These commitments are expected to help catalyze institutional investment into enterprises that develop solutions to combat plastic waste in Asia.

The firm additionally announced today that CCOF I-B has qualified for the 2X Challenge, in recognition of its significant commitment to women's economic empowerment. The Fund's nomination was sponsored by BII. This qualification is a key milestone of Circulate Capital's Gender Smart Investing Strategy, launched in March 2022.

"We're proud to welcome BII to our prestigious list of institutional investors so we can scale our investments more quickly to address the global plastic pollution crisis and advance the circular economy," said **Rob Kaplan, CEO and Founder of Circulate Capital**. "To close our climate tech fund with the support of prominent partners including global corporations, family offices, foundations, and now four of the biggest DFIs in the world signifies that the sector is ripe for the capital it needs to achieve circularity and mitigate the negative effects of climate change."

Kaplan continued: "Crossing the \$250 million AUM threshold is an exciting measure of our success, but even more a testament to the growing appetite amongst institutional and impact investors for investments in high growth companies that are delivering both deep impact and meaningful financial returns. Thus far, our climate tech strategy has invested in four impressive enterprises at the forefront of climate tech and circular innovation, and we will continue to identify and add innovators in this space to our portfolio as well as for our flagship strategy of investing in recycling infrastructure in the SSEA region."

British High Commissioner to Singapore, Kara Owen, said: "This deal will inject investment to help solve an issue which is particularly pressing in this region – plastic waste management. This UK Government funding is indicative of the strength of the UK commitment to the Indo-Pacific and our

innovative approach to tackling global challenges and development. That innovation and UK-Singapore partnership is at the core of the UK-Singapore Strategic Partnership.”

Commenting on its commitment and partnership with Circulate Capital, **Srini Nagarajan, Managing Director and Head of Asia at BII** said: “With an estimation that 11 million metric tonnes of plastic enters the ocean every year, plastic pollution is a serious threat to not just the health of our oceans but also the livelihoods of millions of people. That’s why we are proud to partner with Circulate Capital in South and South East Asia as through funding innovative circulate economy solutions, they have already prevented about 150k tonnes of plastic pollution leakage, reduced or avoided GHG emissions of about 227k tonnes, and managed or recycled a total waste of about 1.2m tonnes.” He added: “With deep sector capabilities, we look forward to learning alongside Circulate for solutions to addressing the plastic problem which could be replicated in other emerging markets.”

About Circulate Capital

Circulate Capital is a leading environmental impact investor advancing the circular economy for plastics in high-growth markets – with activities and teams in 10+ countries. Partnering with global brands and financial institutions, we transform supply chains at scale by delivering economic, social, and environmental value. Launched in 2018 by supply chain experts and leading corporations - including PepsiCo, Procter & Gamble, Dow, Danone, Chanel, Unilever, The Coca-Cola Company, Chevron Phillips Chemical Company LLC, and Mondelēz International, the firm is scaling solutions across the recycling and innovative materials value chains. Founded in and focused initially on South and Southeast Asia, the firm now targets untapped opportunities in high-growth markets to spark further development in the emerging circular economy.

About British International Investment

- British International Investment is the UK’s development finance institution and impact investor.
- British International Investment is a trusted investment partner to businesses in Africa, Asia and the Caribbean.
- It invests to support the UK Government’s Clean Green Initiative and to create productive, sustainable and inclusive economies in our markets.
- Between 2022-2026, at least 30 per cent of BII’s total new commitments by value will be in climate finance.
- BII is also a founding member of the 2X Challenge which has raised over \$16 billion to empower women’s economic development.
- The company has investments in over 1,470 businesses across 65 countries and total assets of £8.1 billion.
- For more information, visit: www.bii.co.uk

Nothing contained in this Press Release is intended to project, predict, guarantee, or forecast the future performance of any investment. This Press Release is for information purposes only and is not investment advice or an offer to buy or sell any securities or to invest in any funds or other investment vehicles managed by Circulate Capital.

NUS launches scenario-modelling facility to accelerate regional cooperation on nature-based carbon projects at COP28

A new scenario-modelling facility that aims to accelerate regional cooperation on nature-based carbon projects across Southeast Asia was launched today at COP28, the United Nations climate change conference, during a panel at the Singapore Pavilion titled ‘Beyond Borders: Harnessing greater mitigation opportunities through international cooperation’.

The S\$1 million NUS Decision Theatre was developed by the National University of Singapore’s (NUS) Centre for Nature-based Climate Solutions (CNCS), a research centre under the NUS Faculty of Science, in collaboration with ST Engineering’s satellite data and geospatial analytics business, ST Engineering Geo-Insights.

Located within the University’s Kent Ridge campus, the NUS Decision Theatre allows users to utilise the interactive platform in-person or remotely, to model outcomes from different scenarios to identify strategic collaborations for the establishment of nature-based carbon projects across the 10 countries in Southeast Asia.

For example, users will be able to adjust various parameters - including type of carbon credit, participating countries, carbon price, project duration and so on - to perform on-the-fly calculations of economic potential and co-benefits of establishing a carbon project at a specific site.

This scenario-modelling ability allows groups of users, for example policymakers, investors and carbon project developers, to play out different scenarios, adjust the parameters according to their understanding or predictions of policy and market changes, to jointly identify the optimal strategy to source nature-based carbon credits or establish new projects. This reduces the need for a “wait and see” approach in response to changing conditions, enabling quicker action to protect Southeast Asia’s rich natural landscape.



The new NUS Decision Theatre builds on the Carbon Prospecting Dashboard (<http://carbonprospecting.org>), which was first launched by CNCS and ST Engineering Geo-Insights, at COP27 in 2022. Based on data and analysis published in peer-reviewed scientific papers, the Dashboard highlights areas where carbon emissions can be avoided by protecting threatened tropical forests and mangroves, and the potential revenue that can be raised from the sale of carbon credits from such sites.

However, the Dashboard provides only an overview of the economic potential of carbon credits that can be sold from avoided deforestation projects. In reality, due to changing market or policy conditions, these credits may not be available for other countries to purchase to meet their climate targets under the Paris Agreement. There could also be new types of nature-based carbon credits - such as those from High Forest cover Low Deforestation (HFLD) regions - coming online in the future.

REDUCING AMBIGUITY BY OUTLINING THE TYPE AND SHARE OF CARBON CREDITS

One source of uncertainty in the establishment of nature-based carbon projects lies in national policies that would affect the quantity of carbon credits in each country available for international trading. This is because some countries may want to count their forest protection or restoration efforts toward meeting their own climate change targets.

Another uncertainty is the type of carbon credit that can be used to meet national climate targets under the Paris Agreement. Currently, most credits in the global carbon markets are from projects that protect threatened forests. However, discussions are ongoing as to whether such protection credits should continue to be used for meeting national targets, due to concerns over their environmental integrity.

At the same time, there are also discussions about whether credits from non-threatened forests, or High Forest cover Low Deforestation (HFLD) regions, should be allowed for use in meeting national targets. Currently, HFLD credits are not yet tradable in the market, but they are available on the NUS Decision Theatre for users to model future scenarios in which they are.

The NUS Decision Theatre addresses all these uncertainties by mapping out three different carbon credit types – protection, restoration and HFLD credits – and the share of each type of credit from the 10 Southeast Asian countries. The interactive platform allows users to adjust the proportion of nature-based carbon credits that each of the countries allocates for international trade.

This allows for rapid calculations of the size of the region's pool of carbon credits available for trading. It also helps users narrow down locations to source for compliant carbon credits, identify possible sites for establishing carbon projects and calculate their potential return of investment. A greater understanding of these factors could also pave the way for new partnerships across the region.

Professor Koh Lian Pin, Associate Vice President and Chief Sustainability Scientist at NUS, and Director of CNCS, said: "The NUS Decision Theatre will enable stakeholders – such as countries, businesses, and carbon project developers – to come together to work through the different scenarios and trade-offs on how to protect nature in Southeast Asia to meet various goals, whether it be their Nationally Determined Contributions under the Paris Agreement, voluntary net-zero pledges, or other climate goals. Having a platform to model the different scenarios will help to reduce the ambiguity involved in the decision-making process and enhance the effectiveness and efficiency of cross-border carbon credit trading, while also creating new economic opportunities."

For enquiries about the NUS Decision Theatre or to book a demonstration, please contact Mr Sean Ng at ng.sean@nus.edu.sg or email CNCS at cncs@nus.edu.sg.

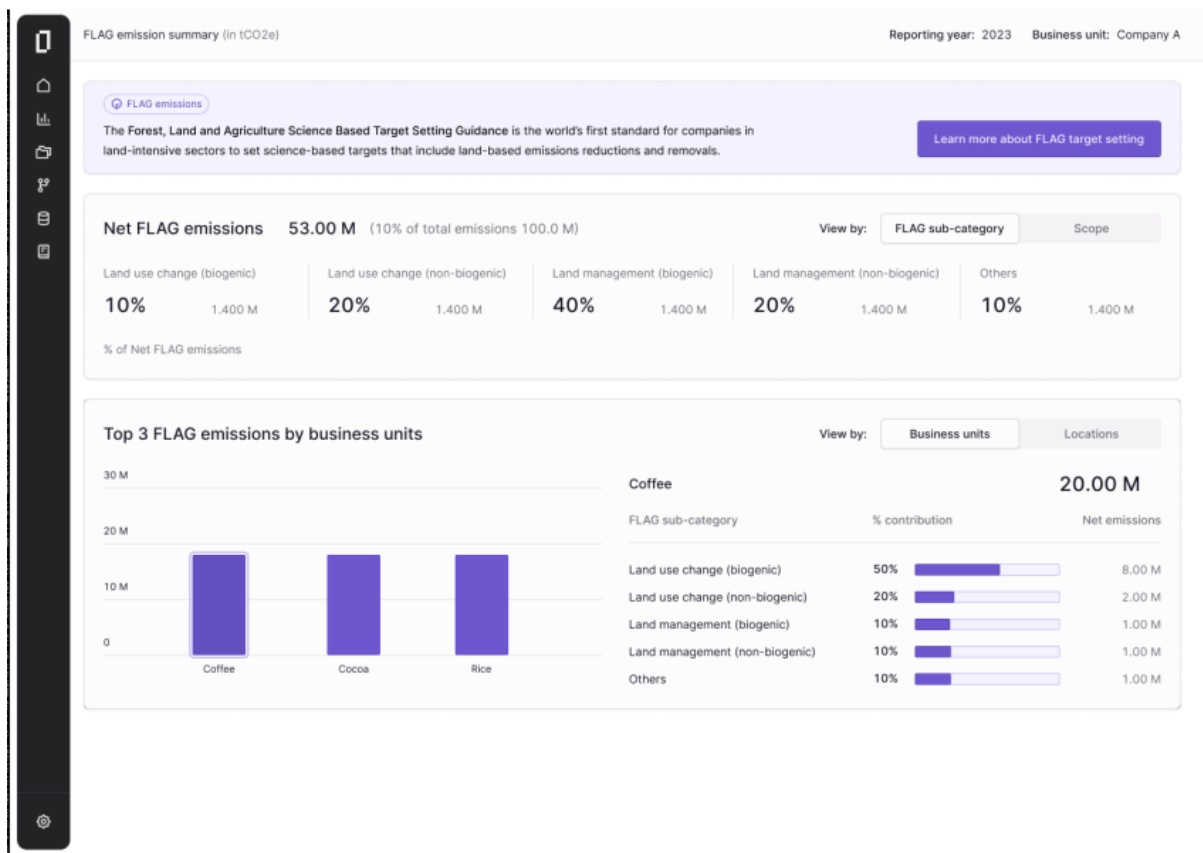
About National University of Singapore (NUS)

The National University of Singapore (NUS) is Singapore's flagship university, which offers a global approach to education, research and entrepreneurship, with a focus on Asian perspectives and expertise. Our multidisciplinary and real-world approach to education, research and entrepreneurship enables us to work closely with industry, governments and academia to address crucial and complex issues relevant to Asia and the world. Researchers in our faculties, research centres of excellence, corporate labs and more than 30 university-level research institutes focus on themes that include energy; environmental and urban sustainability; treatment and prevention of diseases; active ageing; advanced materials; risk management and resilience of financial systems; Asian studies; and Smart Nation capabilities such as artificial intelligence, data science, operations research and cybersecurity. For more information on NUS, please visit nus.edu.sg

Terrascope announces the ability to measure and reduce FLAG emissions on its decarbonisation platform

Terrascope becomes one of the first SaaS Platforms with the ability to measure emissions in line with FLAG

Terrascope, an end-to-end enterprise decarbonisation platform, announced the addition of a new module to its SaaS platform, specifically designed to empower enterprises in land-intensive sectors with the measurement and management of Forest, Land, and Agriculture (FLAG) emissions. This enhancement makes Terrascope one of the first SaaS platforms to incorporate FLAG emission capabilities, offering a robust solution for organisations to achieve more accurate carbon accounting and to advance their sustainability objectives.



FLAG measurement on Terrascope

**Note: Data is representative, not pertaining to any company*

The Forest, Land and Agriculture Guidance [FLAG] is the world's first standard for companies in land-intensive sectors to set science-based targets (SBTs) that include land-based emissions reductions and removals. The SBTi FLAG Guidance impacts a number of sectors in the food and agricultural value chain, such as food & beverage, agriculture, packaged goods, luxury, hospitality, amongst others. The food and agriculture value chain contributes to 34% of global emissions, largely from upstream activities such as deforestation, land use changes, and agricultural practices. The direct dependence on upstream activities to land use emissions underscores the urgency for tools like the FLAG module, in order to enable enterprises to effectively manage their land-based emissions, aligning with science-based targets and the Paris Agreement's goal of limiting global warming.

Maya Hari, CEO, Terrascope, said, *"We are excited to unveil our new FLAG module, to further support enterprises in the food & agriculture value chain on their decarbonisation journey. Food & Agri value chains represent approximately 30% of global emissions, with a majority of these emissions originating upstream, making it essential to have a precise understanding and management of land-related emission sources. Integrating FLAG capabilities into our platform is a pivotal step in enabling large enterprises to identify and act upon these land-related emissions more effectively."*

Terrascope's approach to managing and reducing FLAG emissions includes compliance with SBTi, as well as alignment with the new GHG Protocol for land sector removals. This module enables enterprises in the FLAG sectors to measure land-based emissions from their own operations as well as their supply chain. Enterprises can also measure their decarbonisation initiatives involving carbon sequestration and better land management using the Terrascope's FLAG Module.

Starting with FLAG screening, Terrascope's FLAG Module reviews a company's operational and value chain model to determine their FLAG exposure and the need for SBT FLAG Targets. For companies that need this, a measurement tool covering land use change estimation and land management emissions from farming activities such as fertiliser application, farm activities or livestock rearing is deployed. This includes proprietary capabilities to disaggregate FLAG emissions from third party databases. The emission calculations are consolidated into separate FLAG and Energy inventories, ensuring accuracy and avoiding double counting. The FLAG module then enables enterprises to set SBTi-aligned FLAG targets, and their long and short-term decarbonisation plans.

For enterprises required to set FLAG SBT targets, the Terrascope FLAG module is an essential asset. It enhances operational efficiency and optimises decarbonisation investments, while simplifying compliance efforts. The module provides a transparent, comprehensive view on a singular platform, uniquely enabling the inclusion of carbon removal strategies in decarbonisation plans.

Nikita Asthana, Global Head & Vice President, Sustainability Finance, Olam Agri, said, *"Terrascope has been a key partner and enabler of our decarbonisation journey. Along with the ongoing reduction planning, the timely addition of the FLAG module to the platform is set to further enhance our decarbonisation strategy, and we are looking forward to the precise tools that will streamline our reporting and enable the management of land-related emissions in line with our sustainability goals."*

As a decarbonisation platform with a focus on Food & Agriculture companies across the value chain, from growers, to processors, manufacturers, distributors and retailers, FLAG is one of many upcoming product modules that Terrascope is launching to support material emissions reductions. Additional capabilities to calculate emissions from Land Use Change and farming activities such as fertiliser application and livestock rearing, to modelling Commodity Pathways and Land Sector Carbon Removals will be available in subsequent releases.

About Terrascope

Terrascope is an end-to-end decarbonisation SaaS platform that enables enterprises to measure and reduce their Scope 1, Scope 2 and Scope 3 emissions. As an AI-powered platform that leverages data science, machine learning, and sustainability expertise, the Terrascope aids large companies in decarbonising both their business operations and supply chains, guiding them on their net zero journey.

Publicly launched in June 2022, Terrascope works with customers across sectors, from agriculture, food & beverages, manufacturing, retail and luxury, to transportation, real estate and TMT. Globally headquartered in Singapore, Terrascope operates in major markets across APAC, EMEA, USA, and is a partner of the Monetary Authority of Singapore's ESG Impact Hub.

Plastic: Remaking Our World

Date: 27 January 2024 to 23 June 2024

Venue: National Museum of Singapore, Exhibition Gallery 1

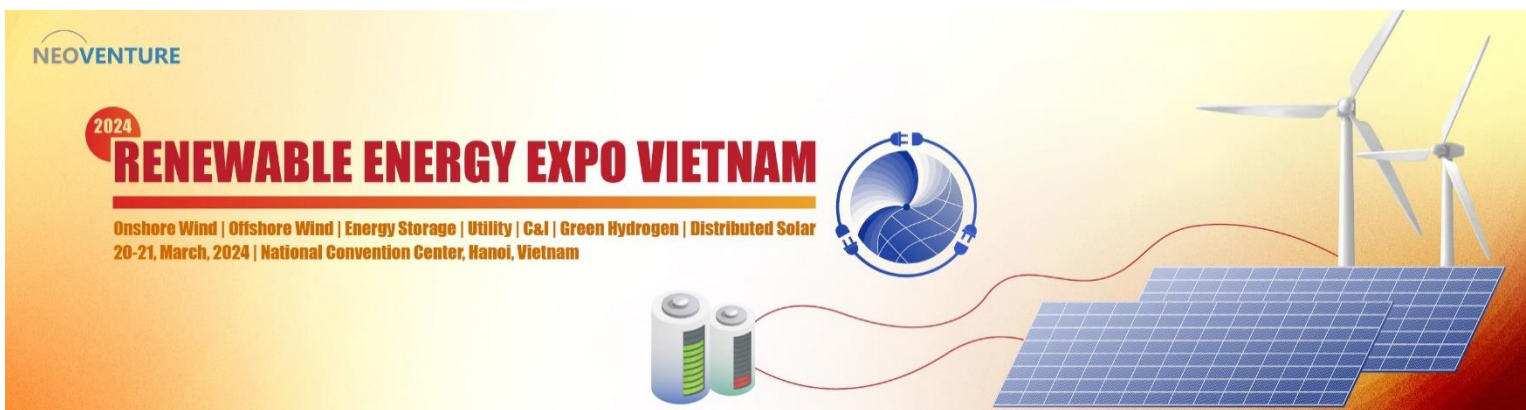
Admissions: \$5 for Singaporeans and Permanent Residents (Adults)



Plastics have shaped our daily lives like no other material: from packaging to footwear, from household goods to furniture, from automobiles to architecture. A symbol of carefree consumerism and revolutionary innovation, plastics have spurred the imagination of designers and architects for decades. Today, the dramatic consequences of the plastic boom have become obvious and plastics have lost their utopian appeal.

Plastic: Remaking Our World examines the history and future of this controversial material: from its meteoric rise in the 20th century and its environmental impact to cutting-edge solutions for a more sustainable way of using plastic. It features over 300 objects, posters, films and photographs from the Vitra Design Museum and its partners, including rarities from the dawn of the plastic age, objects of the pop era and contemporary designs and projects, with additional content on the use of plastic and sustainability in Singapore.

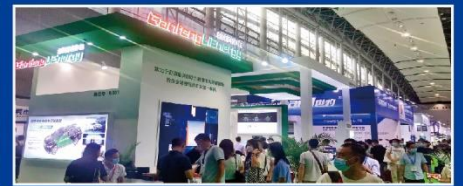
Website: nationalmuseum.sg



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WBE is currently looking for reliable partners to represent our show in the worldwide markets!

The region's leading international geospatial industry event returns to Singapore

Geo Connect Asia returns to Singapore on the 6th & 7th March 2024 to build on its position as the region's leading international show for the geospatial, positioning and remote sensing industries. With the theme ***Geospatial driven impacts: underground, ground and sea to sky*** the conference programme addresses key challenges facing the Asian region, from public health and critical infrastructure to Geo + AI and the monitoring of utility operations.

Geo Connect Asia also embraces the demands for digitalisation of the construction industry, through the co-located Digital Construction Asia show. The launch of Marine & Hydro Asia provides focus on the hydrospace challenges of managing key issues relating to Asia's coastal and marine waters.

More than 130 companies are expected to take part in the combined exhibitions, with more than 70 speakers contributing to the associated conferences. Working with the Singapore Land Authority (SLA), as its Strategic Partner, Geo Connect Asia provides a platform for the introduction of geospatial based solutions across the region.

Mr Ng Siau Yong, Director, GeoSpatial and Data Division & Chief Data Officer of SLA, comments: "We are delighted to support Geo Connect Asia, as Strategic Partner, in our mission to mainstream geospatial-based applications and solutions in Singapore, across public agencies and industry. Themed Geospatial driven impacts, this international industry event provides the perfect opportunity for all participants to demonstrate the influence and learn about the power of geospatial information and technology at work and in the daily lives of citizens."

More than 3,500 professionals are expected to attend Geo Connect Asia and its sister shows, which includes the co-located Drones Asia, relaunched as Drones & Uncrewed Asia, providing a dedicated platform for the region's UAV markets.

Geo Connect Asia is organised by Singapore based Montgomery Asia and was launched in Singapore in 2019.

Please note online registration is now open for conference bookings and professional visitors. Visit www.geoconnectasia.com or www.dronesasia.com for more information.

About Geo Connect Asia 2024

Geo Connect Asia 2024 specifically focuses on bringing the industry together for two days of face-to-face discussions and networking from 6th & 7th March 2024 in Hall A & B, Sands Expo & Convention Centre, Marina Bay Sands. The event will provide a collaborative business meeting platform for industry professionals from across South-East Asia. Discover how geospatial solutions and location intelligence can take your business to new heights and meet and network with some 3,500 industry professionals physically and virtually, all sharing a collective vision of the global geospatial community.

Visit website: <https://www.GeoConnectAsia.com>

About Drones & Uncrewed Asia 2024

The second edition of Drones Asia (now named as Drones & Uncrewed Asia – D&UA) event will be co-located with Geo Connect Asia, Digital Construction Asia and Marine & Hydro Asia on the 6th & 7th March 2024 in Singapore. The specialised show will build on the learnings from UAV Asia 2022 and create the platform for the complete drone ecosystem.

D&UA 2023 provides a focused meeting place for the region's UAV industries. In addition to the focus on providing integrated geospatial applications for key sectors across Southeast Asia, the event will incorporate the latest in aerial, unmanned and ground-based solutions.

Visit the Drones & Uncrewed Asia website: <https://www.DronesAsia.com>

About Montgomery Asia

Established in 2016, Montgomery Asia is a fully-owned subsidiary of UK-based Montgomery Group, one of the most widely respected exhibition companies in the world since 1895.

Montgomery Asia focuses on the growing Asian market, bringing the group's flagship events to this region, as well as developing new trade shows that meet the needs of the Asian market.

Visit website: <https://www.montgomerygroup.com/se-asia>



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.

OUR SERVICES:

- E-Newsletter
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