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NEWS RELEASE

**CapitaLand Sustainability X Challenge 2022 awards 10 startups to testbed their innovations at CapitaLand properties**

***CapitaLand Innovation Fund to support 28 more projects, including 16 sustainability-related projects, in the Group's global innovation drive***

**Singapore, 20 July 2022** – CapitaLand has awarded 10 startups from its CapitaLand Sustainability X Challenge 2022 (CSXC) to testbed their innovations at selected CapitaLand properties worldwide, following their final pitches made at CSXC's Demo Day held today. Three outstanding innovators, CleanAir.ai, Enexor BioEnergy and Sunman Energy have won the special recognition awards - High Impact Award, Most Innovative Award and Carbon Action Hero Award respectively, and a total of S\$100,000 each to fund their pilots.

CleanAir.ai's ALVI CleanAir Safety System™ uses sensors and active polarisation to provide buildings with HEPA-class air quality. Enexor BioEnergy's renewable energy system can convert any combination of organic, biomass, or plastic waste into onsite renewable electricity and thermal power while offsetting significant volumes of carbon dioxide. Sunman Energy has created the world's first glass-free, lightweight and flexible solar panel which can be used on roofs that are unable to support glass modules for static-related reasons. Seven other innovations on low carbon transition and water conservation & resilience have also won S\$50,000 each to fund their pilots. The projects<sup>1</sup> are from Singapore, Canada, China, India, Israel, South Africa, South Korea and USA. More than 340 submissions from 50 countries were received this year for the second edition of CSXC, the first global sustainability innovation challenge by a Singapore-based real estate company.

Dr Koh Poh Koon, Senior Minister of State for Sustainability and the Environment, and Manpower, Singapore, who was the Guest-of-Honour at the CSXC 2022 Demo Day, said: "I would like to thank CapitaLand for organising this challenge to encourage innovations in making buildings more climate-resilient and resource-efficient. It is heartening to see industry leaders such as CapitaLand taking the lead and committing to be net zero by 2050, and devoting resources towards innovation to make this a reality. Innovation is key in our net zero pursuit as we continue to push the boundaries of energy efficiency through development, testbedding and deployment of greener technologies and solutions for buildings. We are at an inflection point in the fight against climate change. No matter which sector each of us are in, let us work together to accelerate our progress in achieving net zero. Collectively, we can address the climate crisis and

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<sup>1</sup>For more information on the winners and other projects selected for pilots at CapitaLand properties worldwide, please see Annex A.

advance the transition to a greener, more inclusive, and climate-resilient future not just for us, but for the next generation as well.”

Mr Lee Chee Koon, Group Chief Executive Officer, CapitaLand Investment, said: “Building an innovative culture and an entrepreneurial spirit are key to driving our company forward to generate sustainable value, and make a positive, long-lasting impact on the environment. Through initiatives such as CSXC, our S\$50 million CapitaLand Innovation Fund and Smart Urban Co-Innovation Lab, we are galvanising innovators from around the world and supporting startups in the development and commercialisation of their technologies to green our portfolio and shape a climate-resilient built environment. We are encouraged to see promising innovations from our inaugural CSXC last year and the overwhelming response to CSXC this year. We will continue to accelerate our adoption of technologies to achieve our 2030 Sustainability Master Plan targets and net zero carbon emissions by 2050, as we seek to build a more sustainable planet for the future.”

#### Creating a future-ready built environment sector with CapitaLand’s S\$50 million Innovation Fund

CapitaLand’s S\$50 million Innovation Fund was launched at the grand finale of the inaugural CSXC in June 2021 to support the testbedding of green and proptech innovations over a five-year period. Over the last year, 28 innovation projects were supported, 16 of which are sustainability related. The projects were selected from submissions from staff across China, India, Malaysia, Philippines, Singapore and the United Kingdom, and are aimed at improving sustainability, operational excellence, digital transformation, and customer experience.

One of the projects being piloted to reduce embodied carbon is Pan United’s Carbon Capture and Utilisation concrete. The low-carbon, mineralised concrete will be used in the superstructure of a 15-storey building in 3 Science Park Drive.

Another project to be piloted soon at Citadines OMR Chennai in India will potentially reduce the use of more than 18,000 single-use plastic bottles<sup>2</sup> at the serviced residence over a one-year period by generating potable water from the humidity in the air, which is collected in a dispenser.

Other sustainability innovations to be trialed under CapitaLand Innovation Fund and CSXC 2021 include the adoption of micro hydroelectric power and micro wind turbines to generate energy, a smart irrigation system to reduce water consumption, and a waste sorting innovation driven by artificial intelligence.

Read more about CSXC and CapitaLand’s sustainability initiatives at:

[www.capitalandsustainabilitychallenge.com](http://www.capitalandsustainabilitychallenge.com), and [www.capitaland.com/international/en/about-capitaland/sustainability.html](http://www.capitaland.com/international/en/about-capitaland/sustainability.html)

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<sup>2</sup> Based on 250ml plastic bottles.

### **About CapitaLand Group ([www.capitaland.com](http://www.capitaland.com))**

CapitaLand Group (CapitaLand) is one of Asia's largest diversified real estate groups. Headquartered in Singapore, CapitaLand's portfolio spans across diversified real estate classes which include integrated developments, retail, office, lodging, residential, business parks, industrial, logistics and data centres. With a presence across more than 260 cities in over 40 countries, the Group focuses on Singapore and China as its core markets, while it continues to expand in markets such as India, Vietnam, Australia, Europe and the USA.

Within its ecosystem, CapitaLand has developed an integrated suite of investment management and operating capabilities that supports its real estate businesses and platforms in building core competencies across the real estate value chain. With this full stack of capabilities, CapitaLand can optimise the strategies of its listed real estate investment management business CapitaLand Investment, and its privately held property development arm CapitaLand Development; to drive competitive advantage for its businesses.

CapitaLand places sustainability at the core of what it does. As a responsible real estate company, CapitaLand contributes to the environmental and social well-being of the communities where it operates, as it delivers long-term economic value to its stakeholders.

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## Annex A – The winners of the CapitaLand Sustainability X Challenge 2022

### Winners

#### High Impact Award

**CleanAir.ai (Canada)** - CleanAir.ai's ALVI CleanAir Safety System™ (patent pending) uses sensors and active polarisation to provide buildings with HEPA-class air quality. The system removes harmful microparticulate (less than 0.007 microns) such as viruses, volatile organic compounds (VOCs), bacteria, and mold spores from the air, resulting in a more enjoyable and safer indoor environment. ALVI CleanAir Safety System™ uses sensors and IoT to connect to leading building automation systems to notify the users of air quality events and real-time filter status. Additionally, it uses a low-pressure drop filter that reduces energy consumption in buildings while reducing HVAC maintenance costs.

#### Most Innovative Award

**Enexor BioEnergy (USA)** - Enexor BioEnergy's renewable energy system (Bio-CHP) can convert any combination of organic, biomass, or plastic waste into onsite renewable electricity and thermal power while offsetting significant volumes of carbon dioxide. The company saves most customers at least 20-30% on their current energy and waste disposal costs while concurrently enabling them to become more sustainable with zero upfront CAPEX required as Enexor offers its systems via its novel Energy-as-a-Service model.

#### Carbon Action Hero Award

**Sunman Energy (上迈新能源科技有限公司) (China)** - Sunman Energy successfully commercialised the world's first glass-free, lightweight and flexible solar panel – the eArc, after conducting extensive research and development since 2014. The solar modules from Sunman Energy have no protective glass layer. Instead, they utilise patented composite materials in their panels, with a thickness reduced to 2mm, a near-impossible feat for regular solar panel manufacturers. By considerably reducing the weight of typical solar panels by 70%, the 2.8 kg eArc can be used on roofs that are unable to support glass modules for static-related reasons, which is predominantly the case for most buildings. Sunman Energy's revolutionary eArc panels can be scaled up to cover large areas at a fraction of the weight, with significant returns.

### Other projects selected for pilots at CapitaLand properties worldwide

#### Low carbon transition

**Loh and Sons Paint Co (S) Pte Ltd (Singapore) in partnership with SolCold Ltd (Israel)** - The Cooling Power of Sunlight - SolCold's innovative nano-technological material harnesses the sun's renewable source of energy to provide zero carbon emission cooling through its multiple cooling mechanisms. It cools surfaces more efficiently with Anti-Stokes Fluorescence technology and reduces the energy consumption required to cool the environment by up to 10%. SolCold can be used everywhere and anywhere under the sun that needs cooling. Singapore-based Loh & Sons Paint Co (S) Pte Ltd is partnering SolCold Ltd, an Israeli company, on research & development and commercialisation of SolCold products.

**Maini Renewables (India)** - Maini Renewables aims to carve out a new niche with a vertical-axis wind turbine designed for urban dwellings. Its turbines are small, customisable, and allow for greater energy production per unit of area compared with common horizontal axis turbines typically found in large wind farms. Their flagship product, the Chakra Turbine, produces two times more energy than solar and is able to use low-wind velocities as low as 1.5m/s in populated cities to generate power. Safety is paramount, and their turbines pose no danger to bird migration patterns, or wildlife, particularly if used in urban settings. Composed of lightweight materials, the turbine blades are durable and can withstand severe temperatures and wind conditions. Maini Renewables also reduces its waste footprint by designing its blades, generators, and drivetrain components to be 100% recyclable.

**Passive Edge Tech (China)** - Passive Edge Tech provides an energy-saving heating and cooling system using phase change material. Phase change materials are able to absorb, store and release a large amount of heat. Their solution, EDGE TCSS, utilises a thermal battery made of phase change material and artificial intelligence (AI) energy control technology to cut down energy consumption and carbon emission in the heating, ventilation and air-conditioning (HVAC) system. This can also reduce heating and cooling energy consumption by 25-35% and extend the HVAC lifetime by decreasing run time by up to 15-20%. Passive Edge Tech's technology can integrate thermal energy storage in buildings using a variety of methods, providing the flexibility to integrate a high share of renewable energy. It can fill the gap between energy supply and demand by absorbing excess energy in buildings, thereby making it a promising technology.

**Slide Luvre (South Africa)** - Intended as a solar energy solution for buildings with a lack of suitable roof space, Slide Luvre's smart voltaic louvres dramatically reduce building energy dependency on external sources by generating solar energy and saves energy by reducing cooling and artificial lighting needs. It significantly reduces peak daily and seasonal demand loads and can also be used in tandem with rooftop solar to improve early morning and late afternoon generation profiles. Energy-efficiency savings of up to 50% can be achieved, and it produces up to 80% of rooftop solar energy.

#### Water conservation & resilience

**Ecoflow (Singapore)** – Ecoflow's proprietary WAVE Valve helps to improve the efficacy of water meter readings, reducing businesses' water costs by up to 30%. This is done without the use of power, downtime for the building, or compromising the end user's experience. The Valve can be inserted into any pipeline without any retrofit works. The technology compresses air bubbles present in the water pipeline, allowing the accurate (up to 30% lower) volume of water consumed to be reflected.

**Hydroleap (Singapore)** - Hydroleap's unique electrochemical technology (HL-EO) provides a chemical-free, automated and low-energy solution for the treatment of cooling tower water. HL-EO utilises an electro-oxidation process and generates hydroxyl radicals and free chlorine resulting in a reduction of conductivity, hardness, organics, and ions in the water. As a result, blowdown water can be reduced by up to 70-80%. The modularised design allows an easy and fast integration into any existing cooling towers as an in-line or side-line treatment process.

**Wi.Plat (South Korea)** - Wi.Plat solves the labour-intensive and painstaking problems typically faced during water leak detection processes. The company saves time and money typically spent on detecting leaks by using AI and innovative high-precision sonic acoustic sensors and integrates them into an intelligent water leakage management platform with IoT and cloud technology. Data-driven insights from the intelligent platform also include water pipe conditions, pressure change trends, and acoustic data patterns, among others. Wi.Plat's solution does not require technical expertise, as the AI model identifies the leaks and showcases the data in the platform for analysis.