Annex: List of MOUs and strategic collaborations

1. MOU between the National University of Singapore (NUS) and JTC

Under the MOU, JTC and NUS will collaborate through the following streams:

i. **AI-Influenced Data Centre Infrastructure:** A major focus will be on developing next-generation data centre infrastructure that leverages artificial intelligence to optimize energy and water usage. These innovations aim to improve operational efficiency while reducing environmental impact.

ii. **Integration of Low Carbon Energy Solutions:** The partnership will explore the deployment of renewable and alternative energy sources such as solar, hydrogen, biofuels, and fuel cells. These will be integrated through smart microgrids and virtual power plants to create a resilient and sustainable energy ecosystem.

iii. **Innovations in Cooling and Power Distribution**: Efforts will include advancements in cooling technologies, power distribution systems, energy storage solutions, and circular practices. These innovations are designed to enhance efficiency and significantly lower carbon emissions.

iv. **Leveraging Jurong Island as testbed for Emerging Technologies:** Jurong Island will serve as a platform for future collaborations, engaging startups, university spin-offs, and global technology providers. Through testbeds, the partnership aims to accelerate the development and deployment of transformative technologies and establish industrial standards.

v. **Talent Development for Future Infrastructure:** The partnership will support the development of a skilled workforce through specialized courses, training programs, and internships. This initiative supports Singapore's long-term goal of building expertise in sustainable infrastructure development.

About 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. We have 15 colleges, faculties and schools across three campuses in Singapore, with more than 40,000 students from 100 countries enriching our vibrant and diverse campus community. We have also established more than 20 NUS Overseas Colleges entrepreneurial hubs around the world.

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 www.nus.edu.sg

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2. **MOU between the Institute of Sustainability for Chemicals, Energy and Environment (ISCE²) of the Agency for Science, Technology and Research (A*STAR) and Surbana Jurong (SJ Group)**

Under the MOU, ISCE² and SJ Group will collaborate through the following streams:

i. ISCE² to identify and develop novel technologies that can be scaled up commercially.

ii. SJ to provide engineering and project management expertise to support the scale-up of low carbon technologies.

iii. SJ and ISCE² to jointly engage with local and overseas partners to develop low carbon technologies, including piloting at the Low Carbon Technology Translational Testbed.

About the Agency for Science, Technology and Research (A*STAR)

The Agency for Science, Technology and Research (A*STAR) is Singapore's lead public sector R&D agency. Through open innovation, we collaborate with our partners in both the public and private sectors to benefit the economy and society. As a Science and Technology Organisation, A*STAR bridges the gap between academia and industry. Our research creates economic growth and jobs for Singapore, and enhances lives by improving societal outcomes in healthcare, urban living, and sustainability. A*STAR plays a key role in nurturing scientific talent and leaders for the wider research community and industry. A*STAR's R&D activities span biomedical sciences to physical sciences and engineering, with research entities primarily located in Biopolis and Fusionopolis. For ongoing news, visit www.a-star.edu.sg.

About Surbana Jurong

For over 75 years SJ have brought advanced, sustainable design thinking to deliver nation building infrastructure that meets the practical challenges of today as well as the needs of tomorrow. Our specialist teams draw on deep expertise and systems thinking to deliver integrated engineering solutions that help connect, move and power people and communities.

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3. **MOU between JTC and Keppel Ltd. (Keppel)**

Under the MOU, JTC and Keppel will collaborate through the following streams:

i. **Integrated Low-Carbon District Energy and Thermal Grid Infrastructure**: Keppel and JTC will jointly study and pilot district-level energy and thermal infrastructure to enhance efficiency and resilience across Jurong Island. These efforts include exploring shared cooling, thermal storage, waste-heat utilisation, and advanced optimisation platforms.

The collaboration will also support the development of Singapore's largest low-carbon data centre park, with a potential capacity of up to 700 MW, positioning Jurong Island as a regional hub for sustainable digital infrastructure.

ii. **Smart Microgrid Testbeds and Regulatory Sandbox**: Both parties will explore smart microgrid pilots and a regulatory sandbox in consultation, in consultation with relevant agencies. These initiatives will test new solutions such as multi-energy integration, advanced grid technologies, and energy storage systems to enhance flexibility, reliability, and renewable-energy adoption.

iii. **AI-Driven Digital Energy Layer**: Both parties will collaborate to study the development of an intelligent digital platform to coordinate thermal and electrical systems across the island. By leveraging AI-driven forecasting and real-time optimisation, the platform aims to improve energy management and enable new value-added services in areas such as energy flexibility, data analytics, and asset performance.

iv. **Energy-as-a-Service (EaaS) Models**: The parties will also explore a unified, multi-energy EaaS model that integrates the above initiatives to deliver higher energy efficiency and greater operational resilience. Such a model could reduce peak demand, support renewable integration, and enable circular-energy solutions, paving the way for scalable and commercially viable low-carbon infrastructure on Jurong Island.

About Keppel

Keppel Ltd. (SGX:BN4) is a global asset manager and operator with strong expertise in sustainability-related solutions spanning the areas of infrastructure, real estate and connectivity. Headquartered in Singapore, Keppel operates in more than 20 countries worldwide, providing critical infrastructure and services for renewables, clean energy, decarbonisation, sustainable urban renewal and digital connectivity. Keppel creates value for investors and stakeholders through its quality investment platforms and diverse asset portfolios, including private funds and listed real estate and business trusts.

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4. MOU between Aster and Air Liquide

Under the MOU, Aster and Air Liquide will collaborate on the production of low-carbon hydrogen:

i. Air Liquide will bring its proprietary and proven Auto-Thermal Reformer (ATR) technology with integrated carbon capture capabilities.
ii. Aster will utilise its expertise in integrated refinery and petrochemical infrastructure to harness low-carbon hydrogen.
iii. This partnership to develop low-carbon hydrogen on Jurong Island will be first-of-its-kind domestically, supporting Singapore's hydrogen strategy to reduce emission in hard to abate sectors.

About Aster

Aster is a leading provider of energy, chemical, and infrastructure solutions in Southeast Asia, supplying products and services to various manufacturing industries in both domestic and international markets. It is a Chandra Asri-led joint venture with Glencore. Since Chandra Asri Group's establishment in 1992, the Group has grown from strength to strength to build its reputation as a reliable growth partner, with strategically well positioned assets in Indonesia and Singapore. The Group's total asset base includes a refinery with a capacity of more than 300,000 barrels per day with ongoing asset rejuvenation, alongside a 1.1 million metric ton naphtha cracker on Bukom Island, 2.5 million metric tons of downstream chemical assets on Jurong Island, and a 0.9 million metric ton naphtha cracker in Cilegon. The company's business is supported by core infrastructure assets, including energy, electricity, water, jetty, and tank farm facilities. For more information, visit www.aster.com.sg.

About Air Liquide

Air Liquide is a world leader in gases, technologies and services for industry and healthcare. Present in 60 countries with approximately 66,500 employees, the Group serves more than 4 million customers and patients. Oxygen, nitrogen and hydrogen are essential small molecules for life, matter and energy. They embody Air Liquide's scientific territory and have been at the core of the Group's activities since its creation in 1902.

Taking action today while preparing the future is at the heart of Air Liquide's strategy. With ADVANCE, its strategic plan, Air Liquide is targeting a global performance, combining financial and extra-financial dimensions. Positioned on new markets, the Group benefits from major assets such as its business model combining resilience and strength, its ability to innovate and its technological expertise. The Group develops solutions contributing to climate and the energy transition — particularly with hydrogen — and takes action to progress in areas of healthcare, electronics and high technologies.

Air Liquide's revenue amounted to more than 27 billion euros in 2024. Air Liquide is listed on the Euronext Paris stock exchange (compartment A) and belongs to the CAC 40, CAC 40 ESG, EURO STOXX 50, FTSE4Good and DJSI Europe indexes.

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5. Collaboration between JTC and Rocky Mountain Institute (RMI)

JTC and RMI will collaborate through the following streams:

i. RMI will identify relevant climate technology startups from Third Derivative, RMI's global climate tech accelerator program ("D3"), that align with Jurong Island's decarbonization priorities as identified by JTC,.

ii. RMI will facilitate introductions between the identified startups and JTC and provide support, mentorship, and capacity building for the startups.

iii. JTC will develop and share problem statements and innovation needs of JTC and JTC corporate partners.

iv. JTC will facilitate engagements between the D3 startups and JTC corporate partners—including introductions, workshops, and tailored matching sessions—to support pilot projects, demonstrations and commercialization opportunities.

About Third Derivative

Third Derivative, RMI's global climate tech accelerator, is accelerating the rate of climate innovation. Third Derivative's inclusive ecosystem rapidly finds, funds, and scales climate tech globally. By uniting and aligning investors, corporations, and experts with the world's most promising climate tech startups, Third Derivative bridges finance and resource gaps to increase the speed to market. The flexible and highly curated remote accelerator program enables startups to focus on their unique needs and opportunities. Together, we are moving markets to achieve an equitable climate future. Learn more at www.third-derivative.org.

About RMI

Rocky Mountain Institute (RMI) is an independent, nonpartisan nonprofit founded in 1982 that transforms global energy systems through market-driven solutions to secure a prosperous, resilient, clean energy future for all. In collaboration with businesses, policymakers, funders, communities, and other partners, RMI drives investment to scale clean energy solutions, reduce energy waste, and boost access to affordable clean energy in ways that enhance security, strengthen the economy, and improve people's livelihoods. RMI is active in over 60 countries.

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6. **Collaboration between Advario Singapore (Advario) and Workforce Singapore (WSG)**

Advario is taking the lead in future proofing its workforce through technology and job redesign. As it takes on a forward-looking role in enabling the energy transition in Singapore through future fuels projects, Advario is also embracing artificial intelligence to accelerate the transformation of its workforce.

Through the adoption of digital twin and immersive 3D training simulation models and aided by WSG's Career Conversion Programme and Job Redesign Reskilling programs, the company is seeking to upskill the team and redesigning the job roles to prepare itself, its vendors and partners for the safe handling of these energies of the future. A total of 150 personnel from Advario is estimated to benefit from these programs.

Aligning itself to Career Health SG's skills first approach, Advario has also begun assessing the career health of its employees in order to chart a plan to address any skills gaps and develop new career pathways to align to the future of the sector. Collaboration with Institute for Adult Learning (IAL), WSG, NTUC LearningHub and Institutes of Higher learning like Singapore Polytechnic Centre of Excellence in Maritime Safety are viewed by Advario to be vital in navigating this transformation.

About Advario

Advario is a leading tank storage and infrastructure solutions provider for chemicals, petroleum products, gases and new energies, headquartered in Rotterdam, the Netherlands. Building on 50 years of experience, Advario operates a global network of liquid storage terminals that are strategically located in key energy hubs. Committed to play a frontrunner role in the energy transition, Advario actively collaborates with its business partners to drive innovation and sustainability in the energy sector and to support its customers in their decarbonization journey.

For more information, please visit www.advario.com

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