

NEWS RELEASE

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Unveiling its 15-year manifesto for sustainability, NTU Singapore charts its course for carbon neutrality and societal impact

NTU's corporate and sustainability goals will be supported by a S\$1 billion multicurrency bond facility announced today

Nanyang Technological University, Singapore (NTU Singapore) is today announcing its **Sustainability Manifesto**, which will propel its wide-ranging sustainability efforts over the next 15 years and solidify the University's position as a global leader in sustainability. NTU will strive to achieve carbon neutrality, along with a 50 percent reduction in carbon emissions, by 2035.

This manifesto reflects NTU's commitment to decarbonisation and sustainable development encompassing its multi-faceted approach. This plan builds on the University's strong foundation and integrates our intellectual assets and human resources. It also seeks to seamlessly connect the NTU Smart Campus initiatives, educational activities, campus infrastructure, research discoveries, partnerships with industry and government, and targeted efforts to encourage and incentivise individual and community behaviour over the course of the next 15 years.

Our targets and goals in this manifesto are reflected in our **Sustainability Framework** document which can be found here: www.ntu.edu.sg/sustainability.

As part of this manifesto, NTU is also announcing today the establishment of a **S\$1 billion Medium Term Note programme**. This programme, together with the **Sustainability Framework**, will give the University access to capital markets through the issuance of Sustainability Linked Bonds from time to time.

Moody's Investors Service today announced **NTU's credit rating of 'Aaa', the highest available**, along with a **baseline credit assessment of 'aaa'**. Moody's has also issued a "stable" rating outlook for NTU.

The unifying theme of the manifesto is predicated on NTU's firm conviction that its efforts in sustainability begin with its own actions on campus. NTU's belief in 'walking the walk' deploys its distinct approach that tests and puts into scalable practice its teaching and research advances in sustainability on its 200-hectare (500-acre) Smart Campus. It also places a strong emphasis on sharing its best practices and innovations with the world and working closely with industry and government for the benefit of local and global society.

The University's manifesto draws together a wide range of existing initiatives and new aspirations, and encompasses the actions of employees and students, and spans all aspects of the university's mission in education, research, innovation and service to society and humanity.

In addition to striving for carbon neutrality, the University's Sustainability Framework includes plans to:

- Achieve 100% Green Mark Platinum certification for all eligible buildings on the main NTU campus;
- Reduce by 50% NTU's net energy utilisation, water usage, and waste generation, by March 2026, compared to the baseline levels of 2011;
- Incorporate sustainability in its newly established interdisciplinary common core curriculum for all undergraduate students;
- Launch new undergraduate, postgraduate and continuing education programme options on different aspects of sustainability;
- Promote sustainable food tech solutions and pathways for food production and for minimising food wastage;
- Establish a new NTU Sustainability Office to coordinate and drive sustainability efforts in education, research, as well as individual and community engagement, in a holistic and integrated way;
- Support and promote the principles of the United Nations Sustainable Development Goals across the pillars of education, research, innovation and community; and
- Forge close ties with Industry Sustainability Partners that are committed to joining NTU's Sustainability journey.

Professor Subra Suresh, President of NTU Singapore, said: "NTU Singapore is well-positioned to be a leader in sustainability. What makes NTU stand out among its peers is that we have the confluence of infrastructure, technologies, partnerships and talent to help us realise our ambitions to 'walk the walk' in sustainability.

"We will encourage and motivate current and future generations of students and staff to participate in our journey to address some of the most pressing global challenges. Our research, innovations and discoveries through interdisciplinary

collaborations with industry and government will provide opportunities and solutions to tackle these challenges at scale.”

Sustainable Financing – Towards a Climate-Aligned Economy

OCBC Bank is the sole arranger for NTU’s Medium Term Note programme and serves as the University’s ratings and sustainability structuring advisor.

Mr Tan Kee Phong, Head of Capital Markets, OCBC Bank, said, “We are extremely honoured to support NTU on the latest milestone of their sustainability journey with the establishment of their Medium-Term Note programme and the Sustainability-Linked Bond (SLB) framework. The ability to issue SLBs and engage investors who share a similar vision on sustainable funding further illustrates NTU’s holistic approach to their new society-linked and climate objectives. This is another step forward in furthering the goals of the Singapore Green Plan 2030, paving the way for more organisations to use sustainable financing avenues to transit towards a climate-aligned economy. It will certainly strengthen Singapore’s position as an international sustainable finance hub.”

Inspiring and educating current and future generations about sustainability

To produce a new generation of scientists with leading-edge knowledge and skills in Artificial Intelligence (AI) to address critical environmental challenges, the University has launched an interdisciplinary **PhD programme in AI and Sustainability**.

At the undergraduate level, sustainability will constitute a core component of the the common **interdisciplinary core curriculum** introduced in August 2021.

Besides offering 200 electives related to sustainability across its vast curricular programmes, NTU has also introduced an interdisciplinary Minor in such topics as Environmental History, Environmental Sustainability, Environmental Management, Environmental Humanities, and Sustainability for undergraduates.

Partnering industry to create innovative solutions

NTU today announced that seven multinational organisations, geographically distributed around the world – Applied Materials Inc. (USA), Continental AG (Germany), Durapower Ltd. (Singapore), HP Inc. (USA), Hyundai (South Korea), Tata Consultancy Services Ltd. (India) and the Alliance to End Plastic Waste (headquartered in Singapore) – have committed to become key partners of NTU’s Sustainability journey.

A new office to coordinate and drive sustainability initiatives

To coordinate and drive NTU's sustainability efforts in a holistic and integrated way, a new **NTU Sustainability Office** headed by Prof Madhavi Srinivasan of the School of Materials Science and Engineering, has been established. This Office will report directly to the NTU President.

The NTU Sustainability Manifesto recognises that sustainability is a grand and complex global challenge involving all sectors and all of society. The Manifesto will bring all members of the NTU community and the University's multiple partners in government, industry and other sectors together, to fully commit and take action on sustainability.

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Note to Editors:

Please see the attached [Annex A](#) for the seven industry partners' statements on NTU's sustainability commitment, and [Annex B](#) for more information on NTU's current sustainability efforts.

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About Nanyang Technological University, Singapore

A research-intensive public university, Nanyang Technological University, Singapore (NTU Singapore) has 33,000 undergraduate and postgraduate students in the Engineering, Business, Science, Humanities, Arts, & Social Sciences, and Graduate colleges. It also has a medical school, the Lee Kong Chian School of Medicine, established jointly with Imperial College London.

NTU is also home to world-renowned autonomous institutes – the National Institute of Education, S Rajaratnam School of International Studies, Earth Observatory of Singapore, and Singapore Centre for Environmental Life Sciences Engineering – and various leading research centres such as the Nanyang Environment & Water Research Institute (NEWRI) and Energy Research Institute @ NTU (ERI@N).

Ranked amongst the world's top universities by QS, NTU has also been named the world's top young university for the last seven years. The University's main campus is frequently listed among the Top 15 most beautiful university campuses in the world and it has 57 Green Mark-certified (equivalent to LEED-certified) building projects, of which 95 per cent are certified Green Mark Platinum. Apart from its main campus, NTU also has a campus in Singapore's healthcare district.

Under the NTU Smart Campus vision, the University harnesses the power of digital technology and tech-enabled solutions to support better learning and living experiences, the discovery of new knowledge, and the sustainability of resources.

For more information, visit www.ntu.edu.sg

**INDUSTRY PARTNERS' STATEMENTS ON
NTU'S SUSTAINABILITY COMMITMENT**



“Applied Materials, a global leader in semiconductor manufacturing technology, is looking forward to supporting NTU in sustainability related projects and to joining forces towards sustainability transformation in the industry.”

– Dr Om Nalamasu, Senior Vice President and Chief Technology Officer of **Applied Materials Inc.**



“We are excited to deepen our partnership with NTU to further develop sustainable mobility solutions. Through the Continental-NTU Corporate Lab and EcoLabs, Continental is already working closely with NTU to push boundaries in mobility innovations and hence, we are very happy to expand our activities in NTU especially in the area of sustainability. Sustainability is at the heart of Continental’s business and an integral part of the Corporate Strategy. The path is clear and we very much look forward to taking the next steps with NTU towards a sustainable future.”

– Mr Dirk Remde, Head of Automotive Sustainability, **Continental AG.**



“Driven by our mission to empower lives and transform the future through value creation and innovation, we envisage a future where energy is renewable for all. We have been collaborating with NTU on several R&D projects that are related to advanced battery materials and energy storage solutions. We are excited to support NTU’s new

sustainability initiative, which will further strengthen and deepen our partnership towards addressing global sustainability challenges.”

– Mr Kelvin Lim, Group CEO of **Durapower Ltd.**



“Our mission at HP is to be the most sustainable and just company in the technology industry. This sustainability initiative, steeped in NTU’s deep technical research prowess, is uniquely positioned to tackle some of the most important global challenges of our time.”

– Mr Tolga Kurtoglu, **HP Inc.’s** Chief Technology Officer and Global Head of HP Labs.



“We are pleased to form a partnership with Nanyang Technological University to explore meaningful collaborations in the sustainability space. Embarking on a journey towards a carbon-neutral society requires a transformation of both technology and business. In alignment with the Hyundai Motor Group's RE100 vision, this partnership underscores our commitment to bring the best of our global expertise to support Singapore's ambitious goals for net-zero emissions.”

– Dr Chi Young Cho, President & Chief Innovation Officer of **Hyundai.**



“Tata Consultancy Services (TCS) is proud to join the NTU Sustainability Initiative as a founding member, further strengthening our collaboration with the institution. With this initiative, TCS and NTU are aligned on our goals to help sustainably transform industry and society. Innovation and purpose are at TCS' core, and this partnership helps us jointly envision a sustainable future.”

– Mr Girish Ramachandran, President, Asia Pacific, **Tata Consultancy Services.**



“The Alliance has been partnering with NTU on research project calls, seeking solutions to the plastic waste challenge in the areas of societal behaviour and advanced technologies. We are excited to support the NTU sustainability initiative as founding member to further deepen our collaborations.”

– Mr Jacob Duer, President and Chief Executive Officer of the **Alliance to End Plastic Waste (AEPW).**

NTU'S CURRENT SUSTAINABILITY EFFORTS

Grooming talents in sustainability and green technologies

At NTU, courses with a focus on sustainability and environmental issues are offered in almost every discipline. The University offers more than 220 sustainability-related courses and programmes at a range of levels.

These include:

- Over 200 elective courses in Sustainability
- New MSc degree programme in Sustainability
- New FlexiMasters in Environmental Earth Systems Science, Sustainability, and Energy
- A new Sustainability track in the MBA programme
- Bachelor of Science degree programme in Environmental Earth Systems Science
- Bachelor of Engineering degree programme in Environmental Engineering
- Interdisciplinary Minors in Environmental History, Environmental Sustainability, Environmental Management, Environmental Humanities, and Sustainability
- 2nd Majors in Environmental Science and Sustainability
- 12 Massive Open Online Courses (MOOCs) in Sustainability

Innovating and discovering new answers in sustainability

NTU has mapped its ongoing and nascent activity in the strategic sustainability research domains of Energy, Water, Waste, Earth and the Environment, and aligned these to Singapore's RIE2025 funding framework.

Partners in these areas include:

- **Energy:** NTU, Surbana Jurong and ENGIE are jointly developing an alternative way of storing energy using liquid air.
- **Water:** Researchers at the Nanyang Environment & Water Research Institute (NEWRI) are devising practical solutions such as desalination, used water treatment, food and municipal solid waste management, and climate change, working with public agencies such as PUB, the national water agency, and the National Environment Agency.

- **Waste:** Recycling of electronic waste (e-waste), including the toxic plastics found on e-waste, is a key research focus under NTU's partnership with France's Alternative Energies and Atomic Energy Commission (CEA) in the NTU Singapore-CEA Alliance for Research in the Circular Economy (SCARCE).

- **Earth:** To drive food safety research and scientific capabilities, and support Singapore's growing food innovation ecosystem, NTU is the host organisation of Singapore's Future Ready Food Safety Hub (FRESH), in collaboration with A*STAR and Singapore Food Agency.

NTU's Earth Observatory of Singapore collaborated with the California Institute of Technology and NASA Jet Propulsion Laboratory, on an Advanced Rapid Imaging and Analysis (ARIA) system to map the damage caused by natural disasters in the Asia-Pacific region, one of the most disaster-prone areas in the world.

- **Environment:** Research on carbon reduction in chemical technology is being conducted at the Cambridge Centre for Advanced Research and Education (CARES) involving researchers from NTU, University of Cambridge, and National University of Singapore.

Testing solutions on the NTU Smart Campus

The NTU Smart Campus is a living testbed for innovative technologies and sustainable solutions that deploy the latest digital tools and technologies.

Innovations currently undergoing research, development and testing include the following:

- NTU's Waste to Energy research facility processes all solid waste on campus into energy.
- The Energy Research Institute at NTU (ERIAN) runs a variety of energy-related projects including green building systems for the tropics, sustainable urban mobility, energy information analytics and user behaviours for sustainability.
- Autonomous vehicles are tested at the Centre of Excellence for Testing & Research of Autonomous Vehicles at NTU (CETRAN).
- NTU's Renewable Energy Integration Demonstrator - Singapore (REIDS) testbed on Semakau Landfill is a living lab for the design, demonstration and testing of sustainable and cost-effective energy solutions for off-grid and urban communities.
- NTU's Nanyang Environment and Water Research Institute (NEWRI) researchers, in collaboration with researchers from other institutes and government agencies in Singapore, have developed an approach using

to detect COVID-19 and other viral pathogens in wastewater. By monitoring sewage from urban areas or complexes such as residential blocks, dormitories or medical facilities, they aim to rapidly identify COVID-19 outbreaks without invasive procedures involving human interactions, and in a cost-effective manner.

- The Singapore Centre for Environmental Life Sciences Engineering (SCELSE) at NTU is linking new insights from the life sciences with expertise from the emerging technologies in engineering and natural sciences to understand, harness and control microbial biofilm communities and microbiomes. With air sample collectors set up on the NTU campus, SCELSE scientists have discovered at least 725 different microorganisms in tropical air, and the composition of the microbial community in the tropical air changes predictably, with bacteria dominating in the day and fungi at night. This day-night pattern and the diversity of airborne microorganisms was previously unknown.

NTU also intends to use its Smart Campus to run tests that examine whether individual behavioural interventions delivered via digital technologies can have a significant impact on the uptake and adoption of sustainability policies.