JOINT NEWS RELEASE

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NTU Singapore, ExxonMobil and A*STAR launch S$60 million corporate lab for low carbon solutions

ExxonMobil Technology and Engineering Company (ExxonMobil), Nanyang Technological University, Singapore (NTU Singapore), and the **Agency for Science, Technology and Research (A*STAR)** have established the **ExxonMobil-NTU-A*STAR Corporate Lab** to develop solutions that would help lower carbon emissions, contribute to resource efficiency, and help build a more sustainable future.

The Corporate Lab was officially launched today by **Mr. Heng Swee Keat, Deputy Prime Minister, Coordinating Minister for Economic Policies and Chairman of the National Research Foundation (NRF)**. Corporate labs allow companies to draw on Singapore's strong foundation of scientific capabilities to address real-world challenges. The partnership between industry and academia helps to strengthen the industry relevance of researchers' R&D and enables innovative enterprises to stay globally competitive through gaining insights into new application possibilities.

Researchers in the S$60 million Corporate Lab will apply their expertise to advance global research efforts in lower-emissions technologies in five areas *(details in Annex)*:

- **Convert biomass into lower greenhouse gas (GHG) emission fuels** for adoption in aviation, maritime and chemical sectors that are potentially more cost-effective and efficient;

- **Carbon capture and utilisation using by-product industrial brines**, such as desalination brine to produce alternative construction materials, turning industrial side streams into useful materials;

- **Turn methane into low-carbon hydrogen and solid carbon materials:** Develop new process technologies to produce hydrogen from natural gas, while identifying potential and new applications for carbon;

- **Develop efficient carbon capture and carbonation technology for industry by-products:** to produce solid carbonates for use in building and infrastructure applications;

- **Large-scale application of carbon in concrete:** Produce and validate concrete with carbon materials for large-scale deployment to enable, durable, and sustainable building and construction applications.

The new Corporate Lab - the latest addition to over 20 corporate laboratories across Singapore – is hosted by NTU's **Energy Research Institute @NTU (ERI@N)** and **A*STAR's Institute of Sustainability for Chemicals, Energy and Environment (ISCE^2)**, through the Industry Alignment Fund-Industry Collaboration Project (IAF-ICP) initiative and will work on joint research programmes over the next five years. These will be focused on helping to reduce greenhouse gas emissions and enhance resource efficiency.

The IAF-ICP initiative is a grant scheme under Singapore's Research, Innovation and Enterprise 2025 (RIE2025)[1] plan to increase the base of enterprises engaging in research and innovation activities in Singapore. It aims to foster industry-relevant public sector R&D efforts, and advances collaboration between public sector researchers with industry, with a line of sight to potential economic outcomes.

Working to meet Singapore's and society's growing needs for stable supplies of energy and essential products while also reducing greenhouse gas emissions in support of a lower-emission future, will require unprecedented innovation and collaboration at scale.

The research programmes identified by the Corporate Lab can contribute to Singapore's energy security, unlock new socio-economic potential, and help support its progress towards a net-zero future.

NTU Vice President (Industry) Professor Lam Khin Yong said: "The partnership between NTU, ExxonMobil and A*STAR is an example of how close collaboration with academia, industry, and public agencies is crucial in developing innovative solutions to address real world challenges. This is in line with NTU's long-term strategic efforts to tackle grand challenges facing humanity and will build on NTU's deep expertise in sustainability to help amplify Singapore's on-going efforts to develop low carbon solutions. The new corporate lab ensures that our research results have the opportunity to be translated into impactful, real-world innovations, bringing us closer to a cleaner and greener future."

[1] The Research, Innovation and Enterprise (RIE) 2025 plan by the National Research Foundation is a strategic roadmap shaping Singapore's research and innovation activities over a five-year period. The RIE2025 aims to enhance Singapore's scientific foundation, broaden its innovation and enterprise ecosystem, as well as scale up technology translation and strengthen enterprise innovation capabilities.

ExxonMobil Asia Pacific Pte. Ltd. Chairman and Managing director Geraldine Chin said: “I’m excited that ExxonMobil with its global leadership in energy and material technology, will continue to work with Singapore’s world-class researchers to accelerate research development for a lower-carbon future. Our involvement in the translational R&D stages can help scale up projects for commercial deployment. We look forward to collaborating with our corporate lab partners on innovative discoveries that can help change our industry and the world.”

A*STAR’s Assistant Chief Executive, Science and Engineering Research Council, Professor Lim Keng Hui said, “A*STAR’s collaboration with ExxonMobil and NTU signifies our shared commitment to achieving a carbon circular economy through technological innovations. The corporate lab combines ExxonMobil’s industry expertise with A*STAR’s and NTU’s cutting-edge research, to accelerate technological deployments for a more resource-efficient future in support of Singapore’s net zero goals.”

Singapore Economic Development Board Executive Vice President Lim Wey-Len said: “The Corporate Lab by ExxonMobil, NTU and A*STAR is a first in Singapore launched with a global energy player. The joint lab is a valuable addition to our ecosystem that will spur solutions for a greener future, while developing home-grown talent in R&D and sustainability here. Singapore is a location where innovation and diverse partnerships thrive, and we continue to welcome like-minded players to join us in developing low carbon solutions from Singapore for the world.”

Leading the Corporate Lab as co-directors are NTU’s **Professor Xu Rong**, School of Chemistry, Chemical Engineering and Biotechnology and Research Director for Engineering and Physical Sciences, and Dr. **Saifudin Abubakar**, ExxonMobil strategic portfolio manager for technology & engineering research, and advisor to the Singapore Energy Consortium.

Training home-grown carbon circular economy experts

The five research programmes undertaken by the new Corporate Lab are expected to generate several technical disclosures, patents, and prototypes. Additionally, it provides an excellent platform to train a talent pool of graduates, research engineers, postgraduates, and postdoctoral fellows in the emerging field of carbon circular economy.

The Corporate Lab will bring together more than 50 researchers, postgraduate and undergraduate students, and engineers from ExxonMobil, NTU, and A*STAR. The collaboration presents unique opportunities for our talent to grow practical skillsets and gain insights beyond research capabilities.

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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, Medicine, Humanities, Arts, & Social Sciences, and Graduate colleges.

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

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.

Ranked amongst the world's top universities, the University's main campus is also frequently listed among the world's most beautiful. Known for its sustainability, NTU has achieved 100% Green Mark Platinum certification for all its eligible building projects. Apart from its main campus, NTU also has a medical campus in Novena, Singapore's healthcare district.

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

About ExxonMobil in Singapore

ExxonMobil Asia Pacific Pte Ltd (EMAPPL), is one of Singapore's largest foreign manufacturing investors with over S$25 billion in fixed asset investments.

Our manufacturing facilities include an integrated world-scale refining and petrochemical complex, as well as a lubricant plant. We provide customers and markets in the region with fuels, lubricants, petrochemicals and liquefied natural gas.

ExxonMobil is also growing its lower-emission fuels portfolio and low carbon solutions business to bring emission-reduction solutions to the region. We have also invested in supporting research in Singapore for lower-emission pathways and sustainable solutions. For more information, visit https://www.exxonmobil.com.sg.

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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.

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About National Research Foundation

The National Research Foundation, Singapore (NRF), set up on 1 January 2006, is a department within the Prime Minister's Office. The NRF sets the national direction for research and development (R&D) by developing policies, plans and strategies for research, innovation and enterprise. It also funds strategic initiatives and builds up R&D capabilities by nurturing research talent.

Learn more about the NRF at www.nrf.gov.sg.