

15 March 2023

Communication on Engagement to the UN Global Compact

Taking sustainability and the environment into consideration guides LUT University's strategic choices, management and operations. We are committed to the UN Global Compact and fully support its Ten Principles addressing human rights, labour, the environment and anti-corruption.

Sustainable development and responsibility are integrated into our educational content and our objectives for research impact. In addition, we strive for sustainability in operations that we can influence together with our stakeholders.

LUT's positive handprint materialises in projects and theses aiming to enhance sustainability and reduce the carbon footprint of partners and stakeholders. Our handprint is based on strategic and long-term scientific work carried out to preserve natural resources and achieve more efficient material cycles, social sustainability, sustainable business and a cleaner environment and water. We have devised our own Climate Action Plan with our staff and students. Moreover, the hundreds of students who graduate from our university each year contribute their sustainability competence to society.

At LUT, we base our activities and actions on a high level of academic rigour and ethics. We operate in a manner that inspires trust and confidence in stakeholders within and beyond the university. Our Code of Conduct is based on legislation, national and international rules and treaties, human rights, and basic rights in the workplace. We accept no discrimination, bullying or compromises in business ethics.

With this Communication on Engagement, we want to express LUT University's continued support to the UN Global Compact initiative. In the future, we will expand our reporting and continue to align our operations with the fundamental Ten Principles in the areas of human rights, labour, the environment and anti-corruption.

Sincerely,

Juha-Matti Saksa
Rector of LUT University

LUT University's fields of study related to the Global Compact

LUT University is one of the world's top 10 universities in Climate Action (SDG 13) and one of the world's top 200 universities in the Times Higher Education Impact Rankings 2022. The THE Impact Rankings are global performance tables that assess universities against the United Nations' Sustainable Development Goals (SDGs). LUT University's solutions grow a positive handprint that extensively influences the climate impacts of our partners in cooperation, such as business enterprises.

This section describes how we apply the principles of the Global Compact and promote the United Nations' Sustainable Development Goals in education and campus life at LUT University.

All degree programmes at LUT increase sustainability competence

LUT University updated its environmental management system to a sustainability management system in 2021–2022. In 2021, the university adopted a new sustainability policy, which is now part of the sustainability management system. It outlines that LUT's strategic choices, scientific research, academic education and societal interaction are steered by ecological, economic and social sustainability. Furthermore, our quality management system ensures that we operate in a systematic and transparent way while continuously evaluating and improving our activities.

In 2021–2022, LUT University delivered 858 bachelor's, 1586 master's and 122 doctoral graduates in the fields of technology and business. All the degree programmes at LUT are built to increase the graduates' competences in sustainability. At the beginning, all new LUT students undergo an orientation into environmentally responsible thinking and research. The university applies cross-disciplinary research and education to build operational models that increase sustainability and positive impacts in society.

The education provided by LUT University focuses particularly on clean energy, water and air – the life-giving resources for which we seek solutions with our expertise in technology and business. In this way, we help society and businesses in their sustainable renewal. Graduates from LUT University can promote responsibility in their professional field.

In 2022, LUT cooperated with UN Global Compact Finland for a Project Course for Sustainable Business for students and the seminar Biodiversity and the Private Sector.

Examples of degree programmes promoting sustainability:

- Software Engineers for the Green Deal
- Bioenergy Systems
- Sustainable Production in Mechanical Engineering
- Circular Economy
- Sustainability Science and Solutions
- Environmental Technology
- Sustainable business is a cross-cutting theme in all bachelor's, master's and doctoral programmes at LUT Business School

Sustainability and responsibility on the LUT campus

As in the fields of study, responsibility and sustainability are the guiding principles in LUT's campus life. LUT wants to increase its campus community's awareness of and ability to promote sustainable development. Sustainable everyday choices on campus, such as sorting waste for recycling, choosing vegan food and saving energy by switching off unnecessary lights and electronic devices, are promoted by LUT University's Climate Action Plan, among other things.

LUT has an equality plan with the aim to make the university a more equal and inclusive community. As LUT is a university of technology, gender segregation still manifests itself as a smaller share of women – also in management positions. LUT's strategic policy is to treat all members of its higher education community equally. The UN's Universal Declaration of Human Rights serves as the basis for LUT's operation.

The mental well-being and job satisfaction of the staff is monitored regularly. Job satisfaction reports are delivered to supervisors, who take action if problems arise. Employees can also give open feedback through an open feedback channel. All the feedback and ideas are forwarded to the person responsible, who then responds to them. Responses are published once a month on the LUT intranet.

Human rights principles are written into LUT University's Code of Conduct, which also sets principles regarding labour and anti-corruption in compliance with the Global Compact. The university's student union ensures that studies are accessible, equal and safe for everyone. LUT consults its student union in decision-making.

Climate Action Plan to cut emissions

LUT University has set sustainability targets for its own operations but also strives for sustainability in operations that it can influence indirectly together with its stakeholders. LUT regularly monitors, measure and develop its impact and the achievement of its prioritised sustainability targets.

LUT strives for carbon negativity by the end of 2024 mainly by reducing its emissions. LUT's Climate Action Plan outlines ways to cut emissions. It sets targets for reducing emissions from various sources: business travel, cars owned by LUT, district heating, waste, electricity, meals on campuses and commuting. The steering group for quality and sustainability work monitors the implementation of the Climate Action Plan and reports to the university management annually.

In district heating, waste and electricity, LUT cooperates closely the campus property owners. The campus cities are very important partners in decreasing emissions from commuting. To reduce food waste, the campus restaurants of Kampusravintolat Oy have started selling leftover food to students and staff to take home, developed a menu based on sustainable local seasonal food, developed vegetarian alternatives and introduced scales to monitor biowaste volumes. In addition, the restaurants' side streams are utilised.

In 2021, LUT produced 4% of the electricity it consumes, and all the purchased energy was 100% renewable (2022 to be reported later). Sustainable practises such as online studies and exams to reduce unnecessary travel are in use. LUT's research results have been applied to introduce effective environmental actions, such as minimising and sorting waste, responsible purchases, and selling leftover food at reduced prices.

According to the latest Climate Action Plan report from September 2022, the majority of actions have been started or are ongoing, while a few have already been completed.

Research and thought leadership in relation to the Global Compact

LUT University has selected the following of UN's Sustainable Development Goals on which to focus. They deal with globally crucial sustainability challenges, and LUT has the scientific knowledge, expertise and partnerships to influence and contribute to them, maximising LUT's impact and positive environmental handprint.

- SDG 6: Clean Water and Sanitation
- SDG 7: Affordable and Clean Energy
- SDG 8: Decent work and economic growth
- SDG 9: Industry, Innovation and Infrastructure
- SDG 12: Responsible Consumption and Production
- SDG 13: Climate Action
- SDG 17: Partnerships for the goals

This section summarises the research at LUT from 2021 to 2022 that promotes the selected Sustainable Development Goals and introduces LUT's most important fields of research.

Number of SDG-related scientific publications

In 2021–2022, the number of scientific publications (Publication Forum rating 2–3) from LUT in high-quality journals totalled 925. In 2021, 382 of LUT's Scopus publications dealt with at least one sustainable development goal – in 2022, there were 419 such publications. LUT aims to make parallel publishing its norm. All scientific publications will be either originally published in an open forum or made available through LUTPub. The transparency of publications also helps to spread sustainable applications to the public.

LUT is often consulted by parliamentary committees, especially regarding renewable energy. LUT participates in the Scientific Advice Mechanism through European science academies. LUT experts are consulted in various regional, national and international institutions.

LUT has also contributed to the European Sustainable Energy Week (EUSEW) policy dialogue with research-based solutions since 2016. In September 2022, LUT hosted an Energy Day event in Brussels to present its activities for scientific advice, industry insights and research and innovation to support the European energy transition.

Inventing products from airborne gases

Clean air is a life-giving resource. The atmosphere also contains many valuable raw materials that can be utilised in a variety of ways. A major research field at LUT University focuses on turning carbon dioxide from waste into an opportunity by producing fuels, chemicals and food from air. LUT recently opened a new gas separation laboratory and uses it to study carbon capture, utilisation and storage, power-to-x technology, hydrogen storage, and industrial gas separation.

LUT has conducted pioneering research on a new system called the hydrogen economy, which is now an emerging business and a potential solution to mitigate climate change, reduce emissions and switch to affordable and clean energy.

LUT also explores the use of carbon dioxide in products such as steel, graphite and pharmaceuticals, ammonia in fertilisers, and xenon as a safe anaesthetic. Satellite monitoring of emissions and community engagement in air quality control have also been studied.

New energy system to mitigate climate change

Another key research field at LUT University is developing an energy system based on fully renewable energy sources. In 2022, LUT released a comprehensive energy report describing the current state, challenges and development possibilities of the energy system in Finland. A total of 19 experts from the LUT School of Energy Systems contributed to the report with the objective of helping

Finland achieve its climate and energy strategy goals, including carbon neutrality by 2035. The report was published just before the culmination of the global energy crisis that put energy on everyone's agenda. The insights from the report will support political decision-making and societal dialogue going forward.

LUT University's research on renewable energy sources, such as solar power and wind power, helps to tackle climate change. The focus areas of LUT's energy research also include nuclear power, nuclear safety, bioenergy, smart electricity grids, IoT solutions for energy systems, power electronics and high-speed technology.

LUT possesses unique nuclear safety expertise and investigates possibilities of small reactors to replace fossil fuels currently used in district heating, for example. In December 2022, LUT announced a plan to deploy a micro-modular research and test reactor that will be connected to the district heating network of the city of Lappeenranta, Finland.

Pioneering in water purification and separation technology

LUT University is known for the most wide-ranging water treatment research in Finland and is the country's leading education and research community in separation technology, tackling the growing global issues of water scarcity and access to clean drinking water.

The research focuses on water purification techniques for the removal of chemical residues and the recovery of nutrients from wastewaters. In recent years, LUT has, for example, built modern photobioreactors for algae research as part of the water treatment infrastructure of the city of Mikkeli, Finland. The research aims to explore the potential of the microalgae, nutrient recovery, carbon capture, production of value-added products from algal biomass and new applications in wastewater treatment.

Eco-friendly packaging, cleantech, carbon trading and more

To deal with the issue of plastic waste, LUT is also developing fibre-based packaging. One of LUT's latest studies in 2022 provides a model for forecasting packaging costs to help companies make business decisions aiming to minimise their environmental load, carbon footprint and related costs.

Furthermore, LUT Business School focuses on sustainable growth entrepreneurship, studying matters such as the internationalisation and growth of cleantech companies and factors in sustainable value creation – that is, how companies succeed in international competition while operating in an economically, ecologically and socially sustainable manner.

LUT's researchers have also introduced the world's first personal mobility-based carbon trading (PCT) scheme. Recent studies provide basic information on the implementation and distributional fairness of PCT.

Disseminating the Global Compact principles

LUT University collaborates with its campus cities Lappeenranta (European Green Leaf Award 2021) and Lahti (European Green Capital 2021) for a clean environment. LUT is a member of the Greenreality Network led by the City of Lappeenranta, creating nationwide growth and business opportunities based on clean energy and a clean environment.

The environment and sustainability are also key science education themes in the acclaimed LUT Junior University and Lahden JunnuYliopisto school outreach programmes. Through these programmes, LUT is strongly involved in science and technology education that covers all age groups and is integrated into the curricula in several municipalities and regions in Finland. The Junior University particularly promotes the SDG 4, SDG 12, SDG 13 and SDG 17.

LUT University's commitments include

- UN's Global Compact initiative
- SDG Accord
- Race To Zero campaign
- Common theses of sustainable development and responsibility of Finnish universities (UNIFI)
- Commitment to the UN's Principles for Responsible Management Education (PRME)
- WWF Green Office certificate from 2012
- 17 goals of the UN's 2030 Agenda for Sustainable Development

LUT supports its business partners in their efforts for the Global Compact

LUT University partners with leading technology companies such as ABB, Andritz and Danfoss to research and develop advanced technologies for sustainable industrial production, transportation, energy systems and other infrastructure.

In 2021, LUT extended its long-standing strategic cooperation with ABB from electrical engineering to a wider scope of new business and inventions focusing on electrification and climate change mitigation. In 2022, LUT and Andritz opened a modern research centre on the Lahti campus to develop both conventional and new fibre materials and the utilisation of side streams and energy efficiency in industry.

LUT also promotes sustainability-driven entrepreneurship in many ways. Green Campus Innovations is a cleantech seed investor focusing on start-up growth

companies and corporate spin-offs utilising LUT research. Green Campus Open connects LUT's faculties and research groups with other organisations to promote the utilisation of LUT University's scientific research by society. Green Campus Open coordinates funding applications to Business Finland and the resulting projects, provides investment companies insights into LUT's start-ups, business ideas and projects, and consults for companies on the commercialisation of research ideas based on clean energy, water and air as well as a circular economy.