
Report on

SUSTAIN- ABILITY 2021

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RECTOR'S FOREWORD

Our environmental management system is now a **SUSTAINABILITY MANAGEMENT SYSTEM**

Taking sustainability and the environment into consideration guides LUT's strategic choices and management. We primarily set targets for operations under our control. Sustainable development and responsibility have been integrated into our educational content and our objectives for research impact. One of our ambitious goals is to achieve carbon negativity by the end of 2024.

We strive for sustainability in operations that we can influence together with our stakeholders. LUT's positive handprint materializes in projects and theses aiming to enhance sustainability work 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. Moreover, hundreds of students graduating annually contribute their sustainability competence to society.

This report presents LUT University's main progress in sustainability in the year 2021. For example, we have studied how solar photovoltaics can power a sustainable future, harnessed our expertise for preparing a carbon road map for Finnish universities, and devised our own Climate Action Plan with our staff and students.

We are still willing to do much more. In the future, we will also expand our reporting because we have joined the UN Global Compact initiative and will align our operations with its Ten Principles in the areas of human rights, labour, the environment and anti-corruption.

Join us in achieving these ambitious goals.
Together, sustainability is reality.

Juha-Matti Saksa
Rector of LUT University



IN FIGURES 2021

1969

was the year LUT was founded, combining technology and business from the start.

1027

scientific publications

6331

Bachelor's, Master's and doctoral students

1111

students in continuing education

1225

students in open university instruction

63

doctoral degrees: 52 in technology,
11 in business

1089

staff members

101

million euros in funding:
Ministry of Education € 54.5 million,
supplementary funding € 46.5 million

94

nationalities on 2 campuses

96%

of graduates employed

2

campuses: Lappeenranta and Lahti

SUSTAINABILITY AT LUT

LUT is committed to considering its environmental, financial and social responsibility in all of its activities: scientific research, academic education, societal interaction and supporting functions. We promote the UN's Sustainable Development Goals.

- » Our strategy 2030, System Earth, solves vicious problems to save our planet.
- » Sustainability is integrated into LUT's strategy, which ensures that all our activities are in line with the SDGs.
- » LUT contributes to a sustainable world through its schools: the School of Energy System (LES), the School of Engineering Science (LENS) and the School of Business and Management (LBM).
- » We have updated our Environmental Management System to a Sustainability Management System. Our new sustainability policy was adopted in June 2021.
- » LUT strives for carbon negativity by the end of 2024 mainly by reducing its emissions.
- » The LUT School of Business and Management (LBM) reports on its activities in accordance with the UN's Principles for Responsible Management Education (PRME).
- » LUT reports on the achievement of its sustainability goals in relation to each goal's original target.
- » In 2021, LUT joined the Race to Zero campaign. The campaign is run in partnership with EAUC (the Alliance for Sustainability Leadership in Education in the UK and Ireland), Second Nature and the UN Environment Programme.
- » Our quality system ensures that we operate in a systematic and transparent way while continuously evaluating and improving our activities.
- » Our Code of Conduct assures that every member of our academic community has equal opportunities.
- » The student union LTKY ensures that studies are accessible, equal and safe for everyone.
- » Information about data protection can be found here and about accessibility here.



- » LUT has recently renewed its equality plan and aims to make the university 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 our higher education community equally. The UN's Universal Declaration of Human Rights serves as the basic principle for LUT's operation.
- » In its guidelines on openness, LUT commits to observing good scientific practice.
- » The mental well-being and job satisfaction of the staff is monitored regularly, and employees can also give open feedback through an open feedback channel. Job satisfaction reports are delivered to supervisors, who can take action if problems arise. All the feedback or ideas delivered are forwarded

to the person responsible, who then responds to them. Responses are published once a month on the LUT intranet.

Commitments:

- » The UN's Global Compact initiative
- » SDG Accord
- » Race To Zero campaign
- » Common theses of sustainable development and responsibility of Finnish universities (UNIFI)
- » LBM's 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

Through its Trailblazer 2030 strategy and research, LUT pursues particularly the following sustainable development goals of the UN:



EXAMPLES OF LUT'S IMPACT

Economic responsibility

- » Money makes operation possible; it does not have intrinsic value.
- » The Principles for Responsible Investment (PRI), and Environmental, Social, and Governance (ESG) factors are considered in all investments.
- » LUT invests in responsible targets, such as funds that support renewable forms of energy and solve global development challenges.
- » Income from investments supports operations in line with the strategy.
- » With good financial management, LUT as an employer is better able to withstand changes in the operating environment.
- » LUT makes donations, grants student scholarships, and participates in recognition co-operation
- » Investments also enable new initiatives. For example, LUT was assigned educational responsibilities in social sciences from 2023 onwards.
- » Financial statement 31 December 2021 (in Finnish).
- » LUT offers summer jobs for students.



Social responsibility

- » LUT's Equality and non-discrimination plan supports the development of work.
- » LUT is a community where all members are treated with respect.
- » Occupational health and safety are a part of our daily activities.
- » The mental well-being and job satisfaction of the staff is monitored regularly, and employees can also send open feedback.
- » LUT offers workplace health promotion activities and group workout classes.
- » LUT supports personnel training and offers related courses.
- » LUT enables a functional work-life balance through remote work possibilities and flexible working hours.
- » LUT offers a sustainable and attractive working environment for researchers and strives to improve it with the European Commission's Human Resources Strategy for Researchers (HRS4R). LUT has also received the HR Excellence in Research award.
- » The eLUT student portal and staff intranet are bilingual (Finnish and English).



36%

of postgraduate students were women

- » Finnish language courses are offered to international students and staff.
- » LUT's international degree programmes and scholarship practices also enable talented students from developing countries to study at LUT.
- » Scholarships are available to 85% of persons who are required to pay a tuition fee and who have accepted a place at LUT.
- » LUT provides everyday tools for gender-sensitive guidance and teaching training for staff.
- » LUT's organisational structure, board of directors, advisory board and university collegium are transparent.
- » LUT consults its student union in decision-making.
- » LUT aims to involve its international staff and students more extensively in all university activities and working groups.
- » Accessibility is taken into account in the design of facilities and materials. Teachers get help subtitling their teaching video materials.



96%
was the employment rate of our graduates in 2021.

Environmental responsibility

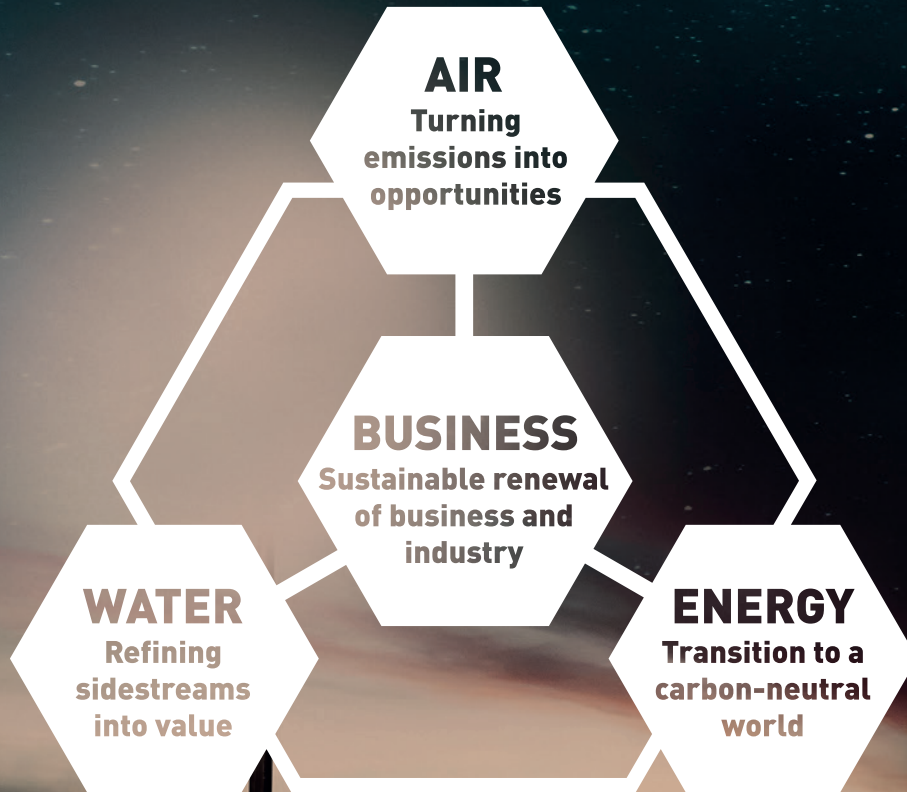
- » LUT's carbon footprint for the year 2021 was 2046 t of CO₂eq.
- » LUT calculates its carbon footprint with the GHG Protocol, which classifies emissions into 3 scopes: Scope 1 includes emissions from a fleet of 5 corporate cars, accounting for merely 0.3% of the carbon footprint. Scope 2 was zero since purchased electricity was carbon neutral. Scope 3 constituted 99.7% of the total emissions, and the major contributor was commuting.
- » LUT implements a Climate Action Plan to tackle its carbon dioxide emissions. LUT has taken important actions in this area, such as the procurement of carbon neutral electricity and solar.
- » LUT takes environmental responsibility and biodiversity into consideration in all procurements and travel.
- » The campus restaurants offer vegetarian options and have succeeded in significantly reducing food loss.
- » Read more on the Climate Action Plan and Carbon footprint pages!



47%
of employees in 2021 were female

TRAILBLAZERS

Science with a Purpose



SYSTEM EARTH



SUSTAINABILITY IN SCIENTIFIC RESEARCH

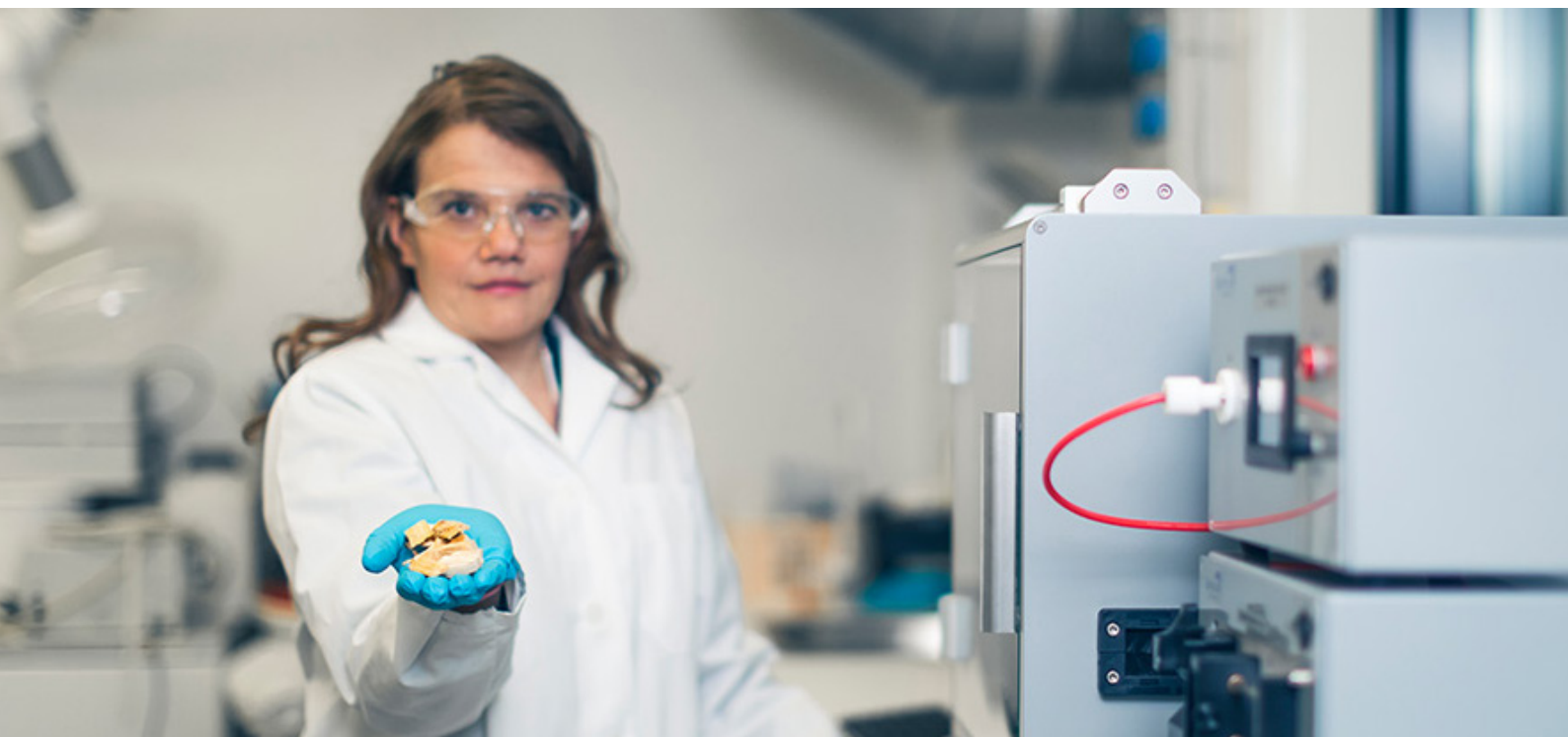
Clean energy, water and air are life-giving resources for which we seek solutions with our expertise in technology and business. We help society and businesses in their sustainable renewal. We conduct and publish high-level research which improves the state of the environment and is relevant to society and industries.

- » LUT's sustainability policy outlines that we focus on research that promotes responsibility and sustainable development.
- » In 2021, the number of scientific publications (Publication Forum rating 2–3) in high-quality journals was 451 which is 7% increase to the previous year.
- » A total of 344 of our Scopus publications dealt with at least one sustainable development goal.
- » We aim to make parallel publishing the norm at LUT. 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.

Examples of our scientific solutions:

- » **Energy:** A cleaner world with lower emissions requires fossil-free fuels and more ecological technologies. In collaboration with businesses, we utilise industrial CO₂ emissions in the production of carbon-neutral fuels.
- » **Water:** LUT is known for its water treatment expertise and is a leading education and research community in Finland in the field of separation technology. We aim to stop chemical flows to nature by cleaning wastewater better.
- » **Air:** We utilise applied mathematics and uncertainty modelling to understand climate change. LUT is part of the Academy of Finland's Centre of Excellence in Inverse Modelling and Imaging.
- » **Business:** We develop sustainable solutions and business models that e.g. reduce plastic waste from food packaging and offer four steps to corporate social responsibility communication.

In developing countries, we are promoting cooperation in the fields of research and education. For example, we are planning to build an entrepreneurship-focused network with partner universities in Africa.



LUT CONDUCTS INTERDISCIPLINARY RESEARCH

on research platforms:

INERCOM – Integrated Energy Conversion Machinery supports the transition to a carbon-neutral world by creating record-breaking efficient solutions for energy conversion machinery.



AMBI – Analytics-Based Management for Business and Manufacturing Industry focuses on smart technologies in the manufacturing industry, digital transformation and business analytics. AMBI aims to improve companies' competitiveness and create sustainable value in the digital economy.



MORE SIM – Modelling reality through simulation. The platform provides digital tools that will contribute to achieving sustainable industrial growth.



SCI-MAT – Sustainable circularity of inorganic materials. The platform examines the circular economy models of metals and industrial minerals by utilising municipal and electronic waste and side flows from mining and other industry as raw materials.



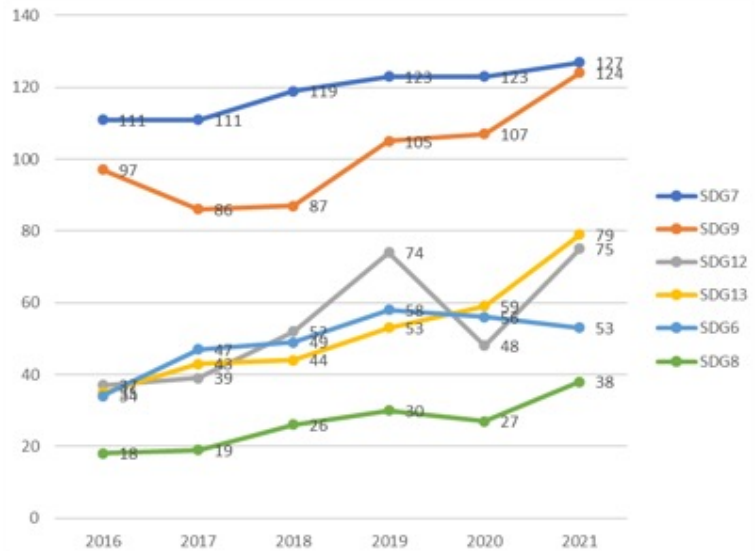
GREENRENEW – Green Hydrogen and CO₂ for Industry Renewal. The platform creates cost-competitive solutions for key processes needed in the renewal of industry. The solutions are enabled by green hydrogen and turning CO₂ from a problem to a resource.



Research in figures


We aim to increase the number of scientific publications related to our strategic SDGs 6, 7, 8, 9, 12 and 13. The development of this metric is monitored by classification in Scopus SciVal.


Development of LUT's research publication volumes from 2016 to 2021 (in six key SDGs). *Source: SciVal 04/2022*

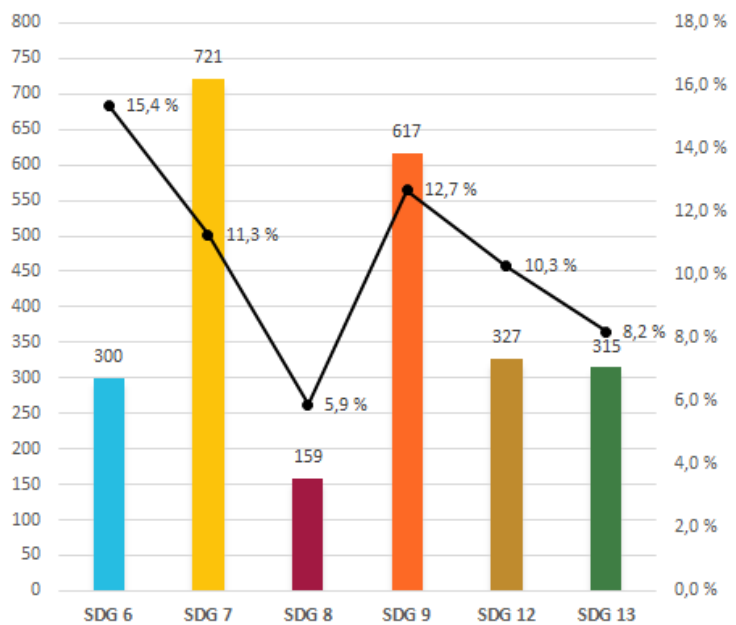


Number of LUT's publications in key SDGs (2016–2021) and LUT's percentage of SDG-related scientific publications produced by Finnish universities and organisations. *Source: SciVal 02/2022*

N.B. The number of publications cannot be compared to the figures published in the previous Sustainability Report, as the number of SDG publications in SciVal has increased with new search terms.

 Number of LUT's research publications in six key SDGs 2016-2021

 % of SDG-related scientific publications produced by Finnish universities and organisations

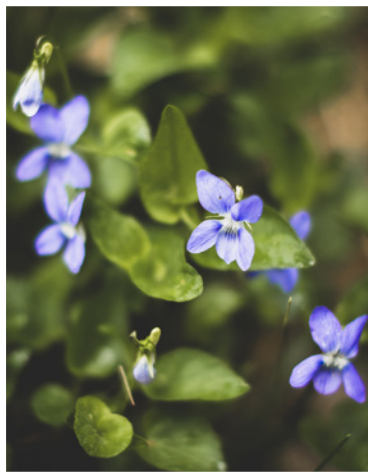


PLACED HIGH IN THE THE 2021 IMPACT RANKINGS

LUT was among the top 201–300 out of 1 115 universities in the THE 2021 Impact Ranking, which assesses the social and economic impact of universities against the UN's Sustainable Development Goals (SDGs).



In terms of SDG 13, climate action, LUT was in the world's top 10 in the THE 2021 Impact Rankings.



In industry, innovation and infrastructure (SDG 9), LUT ranked among the top 101–200 out of all 1 115 universities listed.



Nationally, LUT scored high points in climate action (SDG 13), affordable and clean energy (SDG 7), industry, innovation and infrastructure (SDG 9) and partnerships for the goals (SDG 17).

LUT is among the world's
TOP 10

university for
climate action

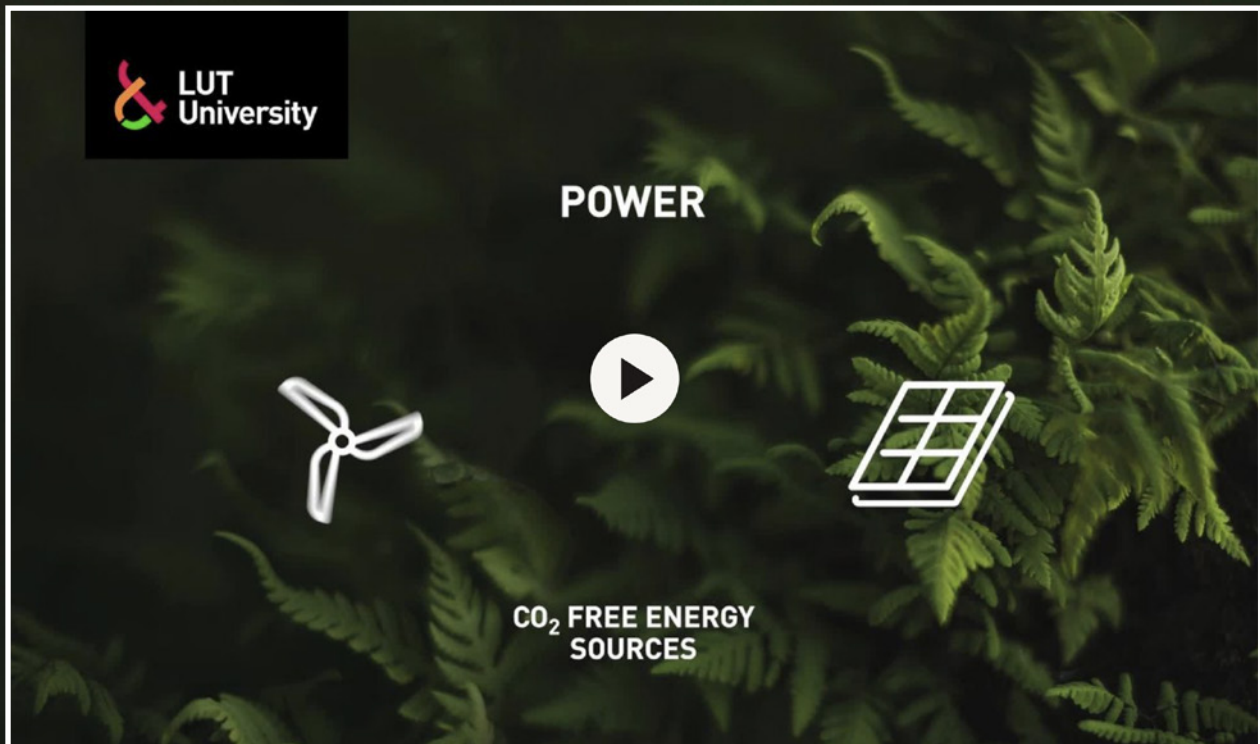
Times Higher Education Impact Rankings 2021



POWER-TO-X TECHNOLOGIES

Power-to-X technologies play a key role in creating a carbon-neutral world. They enable producing synthetic electricity-based e-fuels, e-chemicals or fertilizers from air and water with renewable electricity.

Watch the animation below



SUSTAINABILITY IN ACADEMIC EDUCATION

LUT contributes to global, national and regional development by educating environmentally conscious experts and decision-makers. All graduates from LUT have the ability to promote responsibility in their professional field.

- » LUT degree programmes are committed to developing their students' sustainability competences.
- » All new students undergo the Sustainability at LUT orientation.
- » The course "Introduction to Corporate Social Responsibility and Sustainability" is compulsory for all students at the LUT School of Business and Management (LBM).
- » In 2021, the share of degree programmes with sustainability-related intended learning outcomes was 80%. The target is for all of LUT's degree programmes to develop students' sustainability expertise.
- » Based on graduate surveys, the sustainability skills of graduates from LUT Bachelor's and Master's programmes in engineering and technology develop stronger than the average in reference universities nationally. Graduates from Master's programmes in business administration evaluate their sustainability skills in second place nationally. According to the latest survey of Bachelor's graduates from business programmes, the sustainability expertise developed in studies at LUT is above the national average. [Sources: Finnish Business School Graduates, TEK Graduate Survey].
- » In the coming years, LUT aims to build a technical solution that will allow courses to be categorised according to the SDGs to which they relate.

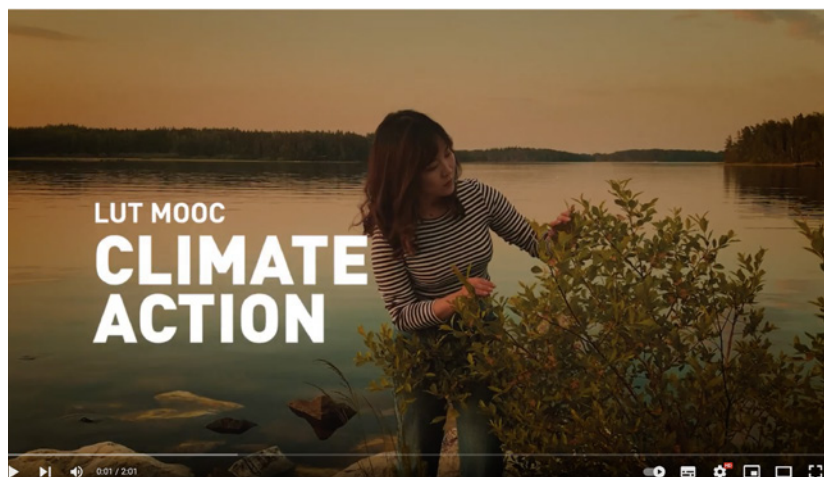
» Examples of degree programmes promoting sustainability:

- » 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 LBM .

Examples of open studies promoting sustainability:

- » Massive open online courses (MOOCs): Climate Action – Solutions for Carbon Neutral Transport, Climate Action – Sustainable design and production, Climate Action – Power-to-X.
- » LUT is a part of [Climate University](#), which offers open courses from 18 universities.
- » LUT has co-organised multidisciplinary environmental courses in Lahti, the European Green Capital 2021.

Watch the animation below



Sustainable impact on

SOCIETAL INTERACTION AND STAKEHOLDER COLLABORATION

By way of our sustainability policy, we are committed to strengthening our impact and promoting sustainable development in collaboration with external stakeholders. We require sustainable operations from our partners.

- » LUT's business ecosystem includes the university's research and education units, students, alumni, enterprise networks and business accelerator Green Campus Open (GCO), the J. Hyneman Center (JHC) for rapid prototyping, the LUT Entrepreneurship Society LUTES, and the cleantech seed investor Green Campus Innovations Ltd. (GCI).
- » In 2021, there were 48 active spin-offs which had been established at least three years previously. The spin-offs produced 12 inventions that year.
- » Together with our campus cities, Lappeenranta (European Green Leaf 2021) and Lahti (European Green Capital 2021), we promote a clean environment and a sustainable society.
- » We help our partners to calculate their carbon footprints. For example, our researchers and students helped calculate the carbon footprint of a symphony orchestra, an ice hockey team and an upper secondary school in Lahti.
- » We published the scientific, peer-reviewed article "Toward Integrated and Inclusive Education for Sustainability with School–University Cooperation" with data collected from schools in Lappeenranta.
- » The award-winning LUT Junior University incorporates LUT's sustainability contents into the curricula of local schools, having reached 3 336 people in 2021. The Junior University particularly promotes the SDG 4, SDG 12, SDG 13 and SDG 17.
- » The new science-focused curriculum of upper secondary schools in Lappeenranta will be launched in autumn 2022. The courses planned and implemented in co-operation with LUT include business and natural sciences.
- » The science class Trail was founded on the Lappeenranta campus to offer workshops for children. The themes include chemical experiments and physical phenomena with a view to sustainability.





The student union provides annual financial support to recreational student associations to enable their operation. Hobbies bring together students who share the same interests. It has been particularly important during lockdown.

*Roosa Grönberg
Chair, LTKY*

- » We organised a workshop for primary school teachers together with the Foundation for Environmental Education Finland on biodiversity topics in education in Lappeenranta in autumn 2021.
- » As a part of Universities Finland UNIFI, we share sustainable and responsible practices openly and actively and develop them together. During the year 2021, LUT was an active member of Finn-ARMA's sustainable development and responsibility working group and its Carbon subgroup. Finn-ARMA's group continued UNIFI's sustainability work, and the aim of the subgroup was to prepare a carbon road map for Finnish universities.
- » LUT started regular co-operation with its student union LTKY's Communications, Environment and Sustainability representative. The representative is also a member of LUT's steering group for quality and sustainability management.

Examples of impact:

- » Membership in the Women in Tech network is one of our ways of promoting diversity in the field of technology.
- » 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 is an expert member of international networks, especially those related to sustainability.
- » Junior University collaboration model with the City of Lappeenranta won the United Nations Environment Programme's 2021 International Green Gown Award in the Creating Impact category.



SUSTAINABILITY EVENTS AND ACTIONS

during the COVID-19 pandemic

LUT upholds a responsible campus culture where it is safe to study and work and the environmental load and carbon footprint are small. We enhance our community's ability to promote sustainable development.

- › LUT has prepared a Climate Action Plan with its staff and students.
- › Sustainability Week on the campus and online engaged people in-house and introduced them to sustainability issues such as biodiversity, responsible consumption and the climate effects of food. The week was organised together with the student unions of LUT and LAB and other partners.
- › We invited a social psychologist to help our students deal with environmental emotions, such as climate anxiety.
- › We hosted a discussion about climate change between President of the Republic of Finland Sauli Niinistö and LUT students on the president's Kultaranta tour.
- › LUT joined the I.C.E. art statement in the Finnish capital. The I.C.E. artwork combined science, art and technology and reminded us of the climate change.





We still have a lot of work to do to take concrete measures to foster biodiversity. We also co-operate closely with the owner of our campus buildings, SYK, conducted a survey of biodiversity on campus grounds.

Kati Koikkalainen, sustainability manager, LUT

- » We arranged COVID-19 vaccination pop-up centres for students and staff on the Skinnarila and Lahti campuses.
- » LUT organised cultural diversity awareness training for teaching and research staff.
- » LUT increased resources for providing services to support the integration of international staff and their families.
- » Sustainability issues and news related to our sustainability research are strongly highlighted on our web pages and in our external communication. We published the PhD Communication Workbook, available to everyone to encourage experts to communicate about their work.
- » The university group LUT Universities donated 10 000 euros to charity for nature conservation and the well-being of young people and children.
- » LUT provides guidance in the pedagogically sustainable use of digital tools in teaching.
- » We planted about 2 500 trees to help the climate with carbon sequestration and as a symbolic gesture for each new student. The city prepared the site, corporate partners donated the saplings and students planted the trees.
- » Metsä360 is LUT's recognition prize granted together with the foundation Marjatta ja Eino Kollin Säätiö for a solution, act or innovation that increases the breeding value of forests.
- » Over 100 of LUT Universities' employees signed up to volunteer for charity on a work day.
- » In 2021, biodiversity was one of the topics of our Sustainability Week, a construction workshop for bug hotels was organised, and a Christmas donation was made to support biodiversity.



CLIMATE ACTION PLAN

LUT is actively striving to find solutions for combating climate change. Goals are achieved in collaboration with campus cities, campus property owners and campus restaurants.

- » The Climate Action Plan is a part of the management system of LUT, and it guides in cutting 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. For example, LUT is going to promote climate-friendly travel choices.
- » In district heating, waste and electricity, we are working very closely with our building owners.
- » Both campus cities are very important partners for us in decreasing emissions from commuting. For example, LUT is committed to continuing the availability of rental bikes on the Lappeenranta campus and will look into the possibility for a bicycle benefit for employees to decrease emissions from commuting.
- » The steering group for quality and sustainability work monitors the implementation of the Climate Action Plan twice a year and reports to the university management.
- » Kampusravintolat Oy is LUT's important partner. To reduce food waste, campus restaurants have started selling leftover food to students and staff to take home. They have developed the Kampusmenu for catering, which is based on sustainable local seasonal food. They have also developed vegetarian alternatives. Restaurants on the Lappeenranta campus have scales to monitor biowaste volumes. In addition, the restaurants' side streams have been utilised by the Junior University.



CARBON FOOTPRINT AND ENVIRONMENTAL MEASURES

LUT strives for carbon negativity by the end of 2024. This ambitious goal is monitored based on the Greenhouse Gas Protocol.

- » LUT's carbon footprint in 2021 was 2046 tons of carbon dioxide equivalents. LUT calculates its footprint in accordance with the Greenhouse Gas Protocol.
- » Business travel has increased in 2021 by nearly 200% compared to 2020, but it still falls short of 2019 figures (before the pandemic, business travel accounted for a significant share of LUT's total carbon footprint).
- » Emissions from commuting were lower in 2021 than in 2020. This is because 2020 was a hybrid year where we considered commuting patterns both before the pandemic and during the pandemic (based on LUT's commuting survey conducted at the end of 2020).
- » LUT is continuously improving its carbon footprint calculation process, including data quality and data collection procedures.
- » LUT's Sustainability Science Carbon Negativity Team calculates the university's carbon footprint annually.

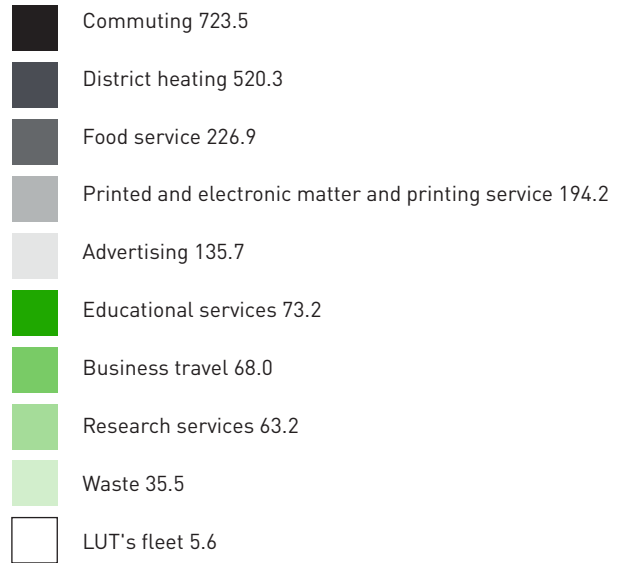
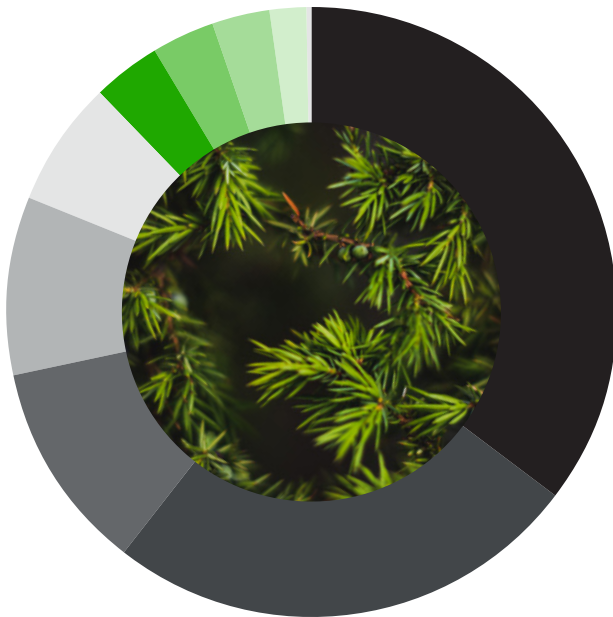
Other environmental measures

- » In 2021, 0% of LUT's 181 tons of waste was landfilled.
- » A significant energy-saving conversion of the library's luminaires to LEDs was done with the building owner SYK.
- » LUT takes environmental responsibility into consideration in all procurements and travel.
- » 100% the electricity we purchase comes from renewable sources.
- » LUT arranges events sustainably and applies the sustainable meeting arrangement principles of the Finnish Ministry for Foreign Affairs and the WWF.
- » In 2021, LUT's solar panels produced 4% of the electricity LUT consumed, and all of the electricity LUT purchases is produced with renewable energy.
- » LUT regularly monitors its water consumption. In 2021, the consumption was 1.88 m³ per person. Water use is minimized with automatically closing water taps and campus vegetation which does not require irrigation.



LUT University's carbon footprint in 2020

LUT's carbon footprint: 2046 t of CO₂eq



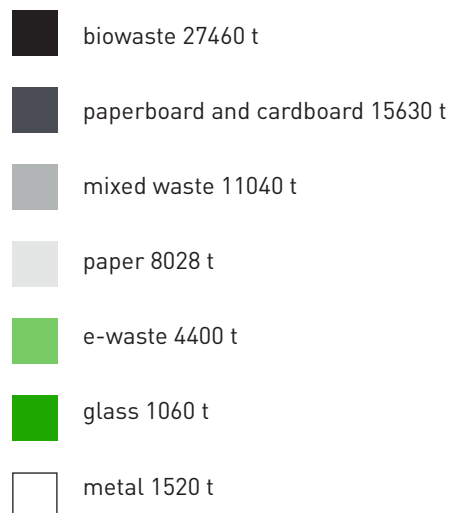
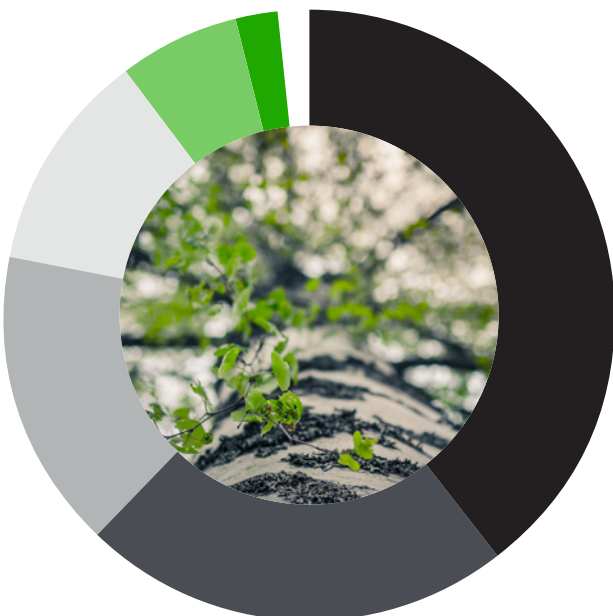
» The carbon footprint was calculated with the GHG Protocol, which classifies emissions into 3 scopes

» **SCOPE 1** includes direct emissions that occur from sources owned or controlled by the organisation, for example, emissions from a fleet of 5 corporate cars, accounting for merely 0.3% of the carbon footprint.

» **SCOPE 2** was zero since purchased electricity was carbon neutral.

» **SCOPE 3** refers to other indirect emissions. It constituted 99.7% of the total emissions, and the major contributor was commuting. The emissions from travelling between university and home were estimated based on a commuting survey conducted among employees and students at the end of 2020.

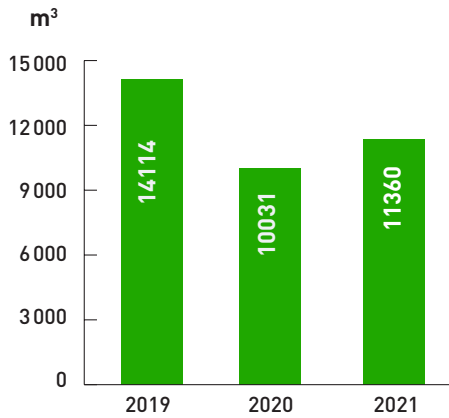
Proportion of waste recycled [t]



SDG 6



Volume of water used at the university [m³]:

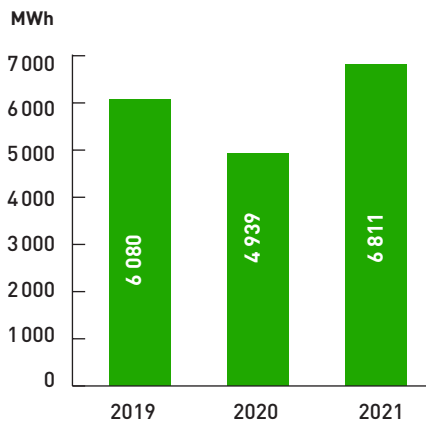


* only Lappeenranta campus

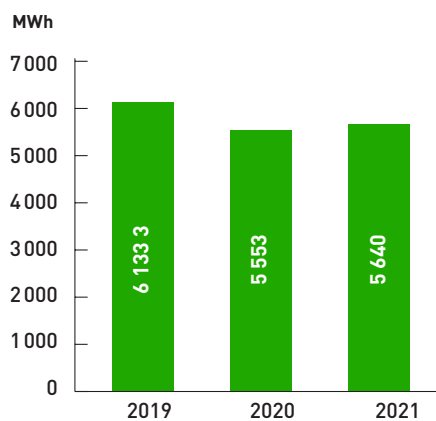
SDG 7



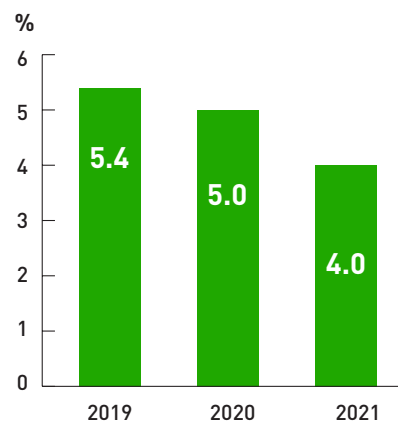
Heat consumption [MWh]



Electricity consumption, total [MWh]



Percentage of LUT's electricity consumption covered by campus solar panels

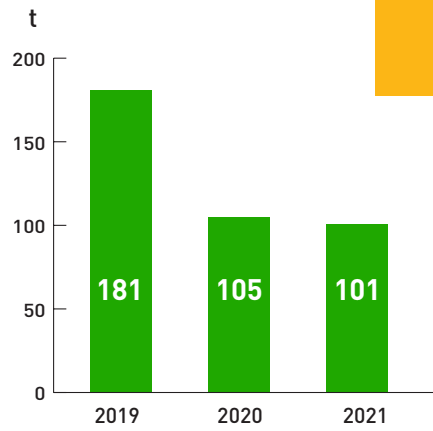


SDG 7

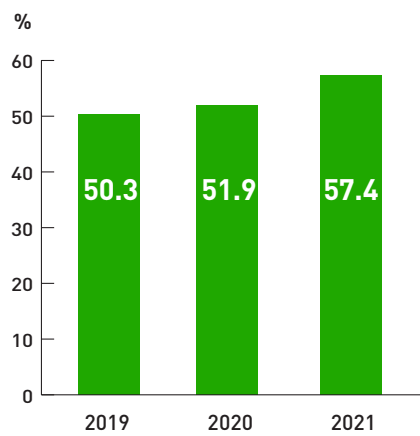
7 AFFORDABLE AND CLEAN ENERGY



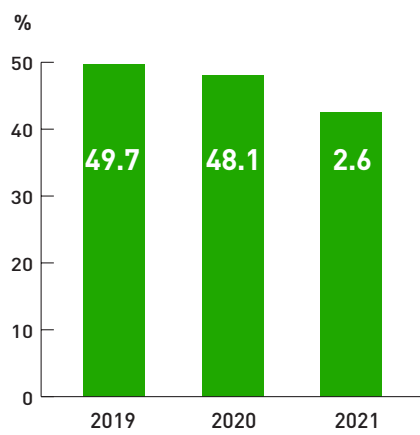
Amount of waste generated [t]



Proportion of waste recycled [%]:



Proportion of waste to energy production [%]:



LUT AND THE 2030 AGENDA

LUT promotes sustainability regarding all 17 goals in the UN's 2030 Agenda for Sustainable Development.

SDG 1 | NO POVERTY

- » The employment rate of our graduates is 96%.
- » 66% of LUT's employees (724 persons) are on contracts of over 24 months.
- » Research: the global sharing and circulation of nutrients would prevent hunger and loss of biodiversity.



SDG 2 | ZERO HUNGER

- » LUT is involved in an Afstor startup. Instead of burning wood, Zambians use solar electricity to make food and plant new trees.
- » The campus restaurants owned by Kampusravintolat Oy constantly monitor the amount of biowaste for reducing it.
- » LUT published a book on sustainable insect production.



SDG 3 | GOOD HEALTH AND WELL-BEING

- » LUT Universities and student organisations organised a well-being week on both campuses. Themes: nutrition and food, exercise, mental well-being, first aid training, sleep and rest.
- » A research group will develop a more efficient version of oat fibre that reduces cholesterol and balances blood sugar.
- » Research: Understanding stressor-strain relationships during the COVID-19 pandemic: the role of social support, adjustment to remote work, and work-life conflict.



SUSTAINABLE DEVELOPMENT GOALS

SDG 4 | QUALITY EDUCATION

- » Junior University provides children with equal access to science as part of comprehensive school curricula.
- » LUT's international degree programmes and scholarship practices also enable talented students from developing countries to study at LUT.
- » 100% of LUT's new students undergo an orientation related to sustainable development.



SDG 5 | GENDER EQUALITY

- » Anyone can take part in open university studies regardless of their background, gender or income level. LUT has launched more extensive open university studies in e.g. mechanical engineering.
- » LUT has hosted a free lunch date to welcome Women in Tech.
- » 47% of LUT's employees in 2021 were women.
- » Shaking up Tech is an event where technology is introduced to upper secondary school students and young women as an attractive career option.



SDG 6 | CLEAN WATER AND SANITATION

- » LUT has started a new era in water treatment: 10 steps to cleaner water.
- » Professor Amit Bhatnagar conducted research on water purification with algae biotechnology.
- » A water footprint should be included in energy transition scenarios, argues a study by LUT.
- » LUT and its campus cities co-organised the Future Energy Solutions conference, which dealt with e.g. how to transform air and water into fuels, chemicals, materials – and even food.
- » Video about LUT's separation science expertise.



SDG 7 | AFFORDABLE AND CLEAN ENERGY

- » New study verifies: the energy sector can reach the 1.5°C target in a cost-neutral way.
- » Research: solar photovoltaics is ready to power a sustainable future.
- » LUT mapped the offshore windenergy potential in the Åland Islands.
- » Towards carbon-neutrality – metals producers and research organisations to develop solutions for reducing CO₂ emissions.
- » LUT research paper reports the valorisation of aflatoxin contaminated peanut into biodiesel.
- » Professor Helinä Melkas & co. seek answers to how individual citizens participate in the clean energy transition.

7 AFFORDABLE AND CLEAN ENERGY



SDG 8 | DECENT WORK AND ECONOMIC GROWTH

- » An LUT researcher addressed the role of psychological distance in organisational responses to modern slavery risk in supply chains.
- » Each of LUT's schools offered summer jobs for students in summer 2021.
- » LUT annually organises the recruitment event DuuniDay to connect students and employers.
- » Company toolkit for sustainable business.
- » Dissertation: Performance management in digital transformation: a sustainability performance approach.

8 DECENT WORK AND ECONOMIC GROWTH



SDG 9 | INDUSTRY, INNOVATION AND INFRASTRUCTURE

- » Direct Air Capture of CO₂ by adsorption. Jere Elfving's thesis.
- » LUT's expertise in computational material science helps in meeting the demands of electrification – battery development relies on in-depth understanding of battery chemistry.
- » An LUT research group joins the Academy of Finland's center of excellence – the goal is an electric airplane.
- » LUT will develop Africa–Asia co-operation and pilot the Sustainable Hackathon: development of students' transferable skills, the social impact of the university, and women's skills.
- » LUT found that plastic from demolition waste can be utilised in composite materials.
- » The BIOPROT project involves the development of more comfortable and ecological protective equipment and work to improve self-sufficiency.
- » Finland's first electric transportation professorship will be established by LUT in autumn 2022.
- » LUT examines the circular economy models of metals and industrial minerals.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



SDG 10 | REDUCED INEQUALITIES

- » Anna Härri, a researcher who specialises in responsibility issues, followed in the footsteps of an ethical laptop. Cobalt mined by children in the Congo is also ending up in the growing battery industry.
- » Four steps to corporate social responsibility communication – how to avoid common pitfalls.
- » LUT aims to reduce inequalities in educational opportunities with digitalisation and a digital strategy for teaching.

10 REDUCED INEQUALITIES



SDG 11 | SUSTAINABLE CITIES AND COMMUNITIES

- » A start-up created in LUT research is involved in the development of green hydrogen production technology.
- » LUT's research supports properties in the planning of charging points for electric cars.
- » A production plant for synthetic fuels in Joutseno would be a giant leap towards emission-free transport'.
- » The city of Lappeenranta and LUT developed accurate measurement of air quality.

11 SUSTAINABLE CITIES AND COMMUNITIES



SDG 12 | RESPONSIBLE CONSUMPTION AND PRODUCTION

- » LUT as a part of Finixrevolution is accelerating societal change towards a resource-wise textile system through interdisciplinary co-creation, new technologies and circular business models.
- » LUT examined recommendations for reducing the environmental impacts of public procurement.
- » Dissertation: What constrains the sustainability of our day-to-day consumption? A multi-epistemological inquiry into culture and institutions.
- » Six ways to build circular business models.
- » The campus restaurants responded to the increased demand for vegetarian food and developed vegetarian options.
- » Student webinar: Towards the circular mining economy.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



SDG 13 | CLIMATE ACTION

- » New study verifies: the energy sector can reach the 1.5°C target in a cost-neutral way
- » LUT modelling describes renewable pathways to a climate-neutral Japan – reaching zero emissions by 2050 in the energy system.
- » LUT examines ICT in relation to climate change and aims to reduce ICT's environmental impact.
- » A personal carbon trading scheme made people question their mobility choices – and reduce their emissions.
- » The SUSBINCO project aims to make Finland a global leader in bio-based packaging.
- » LUT and VTT expanded their method from a carbon handprint to an environmental handprint.



SDG 14 | LIFE BELOW WATER

- » LUT is the place to learn to design, create and implement systems for a sustainable future in the Master's Programme in Water Technology.
- » LUT is developing methods for analysing microplastics.
- » Microalgae are green gold – an eco-friendly water purification alternative.
- » LUT joined the Finnish Lakeland Forum.



SDG 15 | LIFE ON LAND

- » The Metsä360 award granted by LUT accelerates forest processing and supports the growth of a responsible bioeconomy.
- » Biodiversity was one of the topics of our Sustainability Week, and a construction workshop of bug hotels was organised.
- » Residual biomass has great potential for expansion as an alternative bioenergy source.
- » The global sharing and circulation of nutrients would prevent hunger and loss of biodiversity.



SDG 16 | PEACE, JUSTICE AND STRONG INSTITUTIONS

- » The Equality Plan promotes equality and strives to prevent and eliminate discrimination.
- » LUT is committed to the UN's Global Compact initiative, Race to Zero campaign and SDG Accord.
- » LUT aims to involve its international staff and students more extensively in all university activities.
- » LBM's basic course in corporate ethics reviews data ethics and the limits of growth. The course also touches upon the loss of biodiversity, forced labour and ethics of robotisation.

16 PEACE, JUSTICE AND STRONG INSTITUTIONS



SDG 17 | PARTNERSHIPS FOR THE GOALS

Local level:

- » A science education path from early childhood education to upper secondary school draws its content from the LUT University strategy.
- » A sustainable university located in green cities – Lappeenranta and Lahti set examples as sustainable cities.
- » A wetland excursion showed families how a wetland works, how it purifies water and binds contaminants in stormwater in a variety of ways.

17 PARTNERSHIPS FOR THE GOALS



National level:

- » LUT actively engages in collaborative sustainability work of Finnish universities, especially on carbon footprint and handprint issues.
- » Hydrogen and Carbon Value Chains in Green Electrification (HYGCEL) is a consortium of universities and businesses.
- » The national development programme for work and well-being at work WORK2030 and LUT presented the results of the Fast Expert Teams operating model to central government leadership.

International level:

- » LUT has a member on the jury for the ISCN Awards 2021
- » IMPULSE is a team of 16 entities from 9 countries that uses artificial intelligence and blockchain to improve online identification processes. Security, trust, and inclusion will be its central concepts.
- » LUT started education in Finland in a collaboration with the Chinese university Hebei University of Technology (HEBUT).