
LUT
University
LAND
OF THE
CURIOUS

PRE-MIDSUMMER PARTY: STARTUP-MINDED RESEARCH ENERGISING EUROPE'S COMPETITIVENESS

SUSTAINABLE ENERGY WEEK


LUT University
We have the courage to succeed,
passion for innovation through science,
and a will to build well-being.
SYSTEM EARTH
Science with a Purpose
We at LUT University seek solutions to global issues with our expertise in technology, business, and social sciences. We are trailblazers in promoting the energy transition and the regenerative use of natural resources, and we help build resilient communities, industry, and businesses through data, research, and education. Our campuses are in Lappeenranta and Lahti, Finland, but our impact is global.
LUT UNIVERSITY STRATEGY 2030

SYSTEM EARTH

Science with a Purpose

PLANETARY RESOURCES

Regenerative use of natural resources

DIGITAL REVOLUTION

Utilising data and digital technology to benefit society

&

BUSINESS AND SOCIETY

Building resilient businesses, industry, and communities

ENERGY TRANSITION

Clean energy solutions for industry and society

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STRATEGIC RESEARCH PLATFORMS
Your Gateway to
Solving Societal
& Business Challenges

RESEARCH PLATFORM TEAM

Research Director

Kirsi Pulkkinen

Grant Writers

tbc

Alexander Myers

Engagement Specialists

Mehran Rezaei

Business Partnerships

Sarah Kilpeläinen

Academic and Public Sector Partnerships

ELECTRIC MOBILITY RESEARCH CENTER

LUT University | KEMPOWER

DEEPEST INDUSTRY COLLABORATION

EMRC = DEEPEST COLLABORATION MODEL BETWEEN INDUSTRY AND ACADEMIA

ELECTRIC MOBILITY RESEARCH CENTER
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1. TRUST

2. START-UP LIKE AGILITY

CONTINUOUS PROCESS

ELECTRIC MOBILITY

As a

THEME

With a wide scope

IDEAS FROM LUT

IDEAS FROM KEMPOWER

LUT FUNDING

KEMPOWER FUNDING

DECISION MAKING WITH **STARTUP AGILITY**

EMRC steering committee is the decisive body:
3+3 reps from KEMPOWER and LUT

FUNDING ALLOCATIONS

EMRC Director

IMPACT

Ideas that have societal value (student teams, studies on regulatory effects, showroom)

EMRC STAFF

Find the right researchers

Manage projects

Seek scaling and funding opportunities

Search new ideas and technologies

EXTERNAL FUNDING For more resouces

SCALE

Ideas with potential for deeper research projects

SCALED PROJECTS

EU

BF

RCF

FOUNDATIONS

RESULT TRANSFER

Ideas that turn out practically oriented are adopted fast

FUNDING OPPORTUNITIES

KEMPOWER RESEARCH & VENTURES, PRODUCT AND BUSINESS DEVELOPMENT

ELECTRIC MOBILITY RESEARCH CENTER

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RESOURCE MULTIPLICATOR

EMRC has multiplied KEMPOWER funding

3,4 x

With external funding

EU Funding

Business Finland

Foundations

Regional development

VARIETY OF EXPERTICE

EMRC has engaged

48

researchers

From all schools in LUT

Multi-diciplinary teams

Professors and senior researchers

Master's and PhD students

SEEKING ANSWERS

EMRC has initiated

21+4

projects

For wide variety of topics

Business models

Hardcore tech

Societal impact

Regulatory landscape

FUTURE TALENTS

EMRC co-steers

9

PhD students

Working on KEMPOWER topics

EU Doctoral schools

Research projects

Researcher exchange programs

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FAST SCALING UP

IN TWO YEAR EMRC HAS SCALED OPERATIONS FROM ZERO TO MULTIMILLION LEVEL

Rapid growth
EMRC's agile industry driven operation model has allowed scaling up operation quickly (2025 total volume approx. 1 M€)

Industry oriented research
Research is always **business driven** under strong steering by EMRC and industry (Kempower)

Industry value
In less than two years EMRC collaboration has generated IPs that directly benefit industry
→ export business and GDP growth

EMRC collaboration model allows seamless collaboration and data exchange between academia and industry (most research project outside EMRC are very siloed) → **Future talents**

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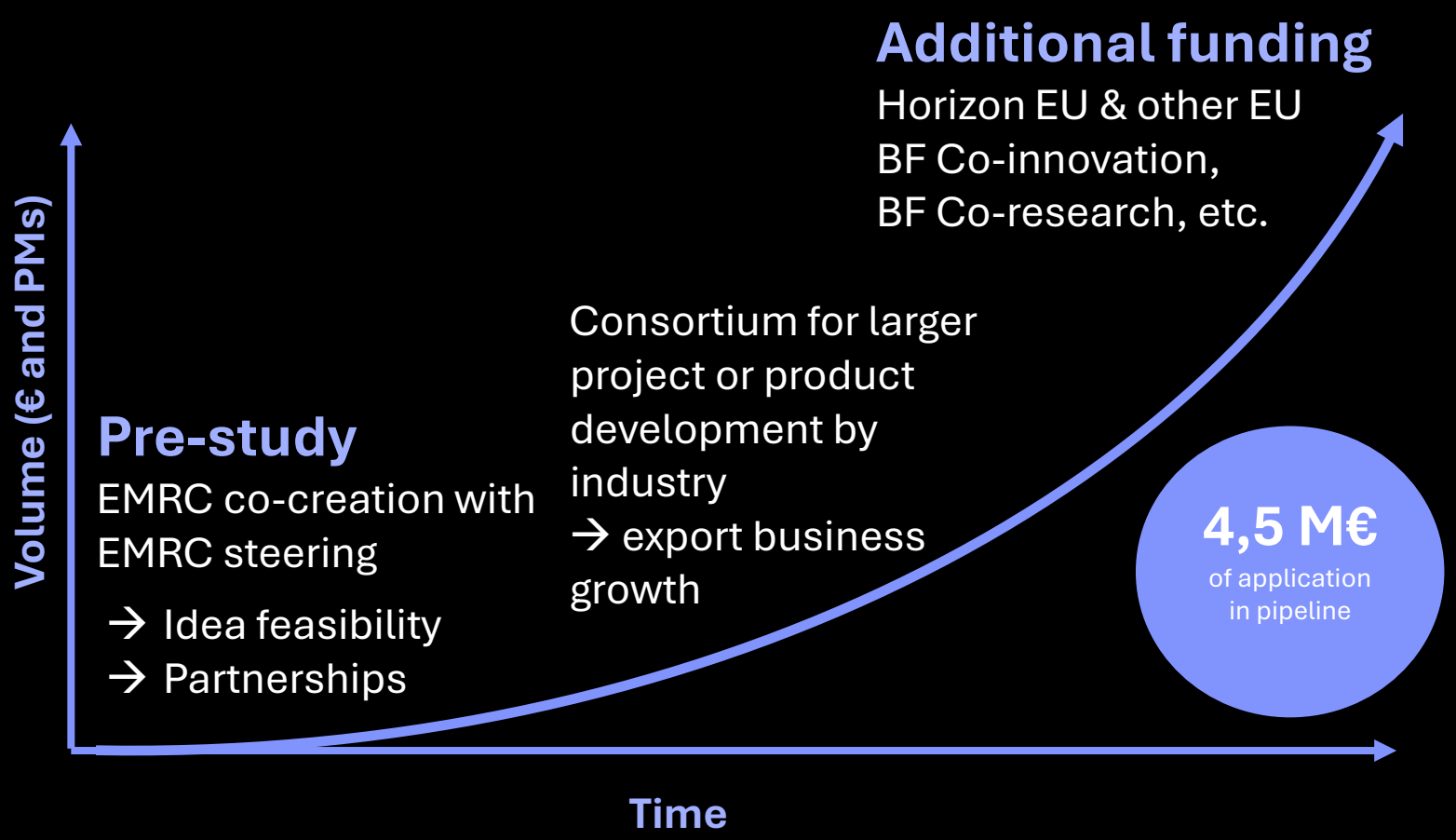
CO-CREATION MODEL

EMRC **FUNDS LUT RESEARCHERS** TO BOOST CO-CREATION ACTIVITIES



630 k€
EMRC funded to LUT researchers

20 PM
LUT research work contribution

21 pc
EMRC co-creation projects

4,5 M€
of application in pipeline

Status on 3/2026

PROJECT PORTFOLIO

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EMRC co-creation

- PCB coating in manufacturing for reliability (LES)
- Cooling solution to cool down satellites and power electronics (LES)
- Planar heat pipes in charger power electronics (LES)
- Water conductivity research (Cooling liquid degradation) (LENS)
- Holistic modelling of electrification of the e-mobility ecosystem (LENS)
- Hybridityöskentelyä ohjelmistokehityksessä (LENS)
- Impacts of AFIR on eMobility (LBS)
- Tasesähkömarkkinoiden kytkentä latausliiketoimintaan (LES)
- Charging system bidding strategies (practical implementation and field pilot) (LES)
- State of the art of Wireless Charging (LENS)
- Aluminum bus bars lab testing and design instructions (LES)
- SSCB and SST pre-studies (LES)
- Automated high power charging solutions (LES)
- Bi-direction power transfer solutions in vessel applications (LES)
- Many more...

Co-innovations and EU

- More4Power, EU CHIPS JU
- SECHA, BF Co-innovation
- 3 RDF projects
- Dream+Plan Cofund 2 x PhD
- SMAR3TS
- Multiple HETE Co-innovations and EU projects in preparation
- Kempower linking LUT to EU consortiums

EMRC initiatives

- Showroom
- Future of aviation
- LUT/DTU Cofund 2 x PhD
- etc.

EXTERNALLY FUNDED PROJECTS

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- 2024/12 Scaling EV charging solutions for new values and services in collaboration networks
  Business Finland Co-innovation
  Total budget +4 M€, LUT 600 k€

- 2025/11 Future Aviation Aerodrome
  EAKR (Regional Developent Fund)
  LUT budget 400 k€

- 2026/2 Electric Mobility Digital Twin (EMRC Showroom)
  EAKR (Regional Development Fund)
  LUT&LAB budget 400 k€

- 2026/3 Super Cluster (EMRC showroom)
  EAKR (Regional Development Fund)
  LUT budget 430 k€

- 2026/3 MORE4POWER
  EU Chips JU
  LUT budget 1.1 M€

- Foundation funding
  LUT budget +500 k€

+++ SEVERAL CO-INNOVATION AND HORIZON EU PROJECTS EXPECTED TO START IN 2026

NEW OPENING IN AVIATION

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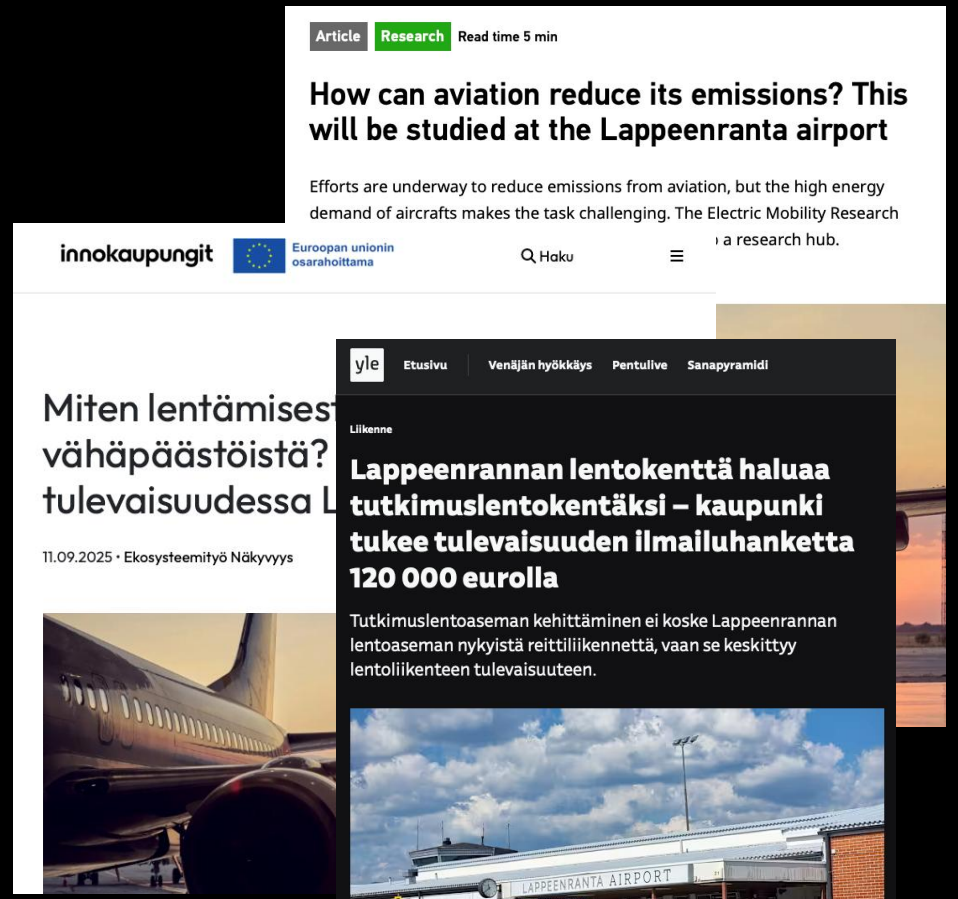
EMRC SCOUTING NEW BUSINESS OPPORTUNITIES IN ELECTRIC AVIATION

- Building research-oriented ecosystem enabling **world class electric aviation research** while supporting livelihood of the local airport
- **Secured 400 k€** of regional development funds to catalyze development activities (11/2025-2027)
- Hiring **dedicated project manager** to boost development in close collaboration with Lappeenranta Airport



EMRC Team (LUT)

ELECTRIC MOBILITY RESEARCH CENTER
LUT University | KEMPOWER

Tiina Jauhiainen
Funding Specialist,
[Expertise: EU Funding, Finance and Economics]

Ville Naumanen
Research Director,
[Expertise: Startups, eMobility tech,]

Ville Tikka
Senior Expert,
[Expertise: Electric Vehicles, Energy Systems and Markets]

Petteri Lehti
Project Manager,
[Expertise: Aviation and Logistics]

Antti Sinisalo
Project Manager,
[Expertise: Strategic Management and Startups]

Mario Verdugo
Research Coordinator,
[Expertise: Spinoffs, Technology Management]

Junior Team

Eetu Peltola
Research Assistant,
[Expertise: Data Engineering and Analytics]

Guilherme Ribeiro
Junior Research Assistant,
[Expertise: Electrical Engineering]

Helin Güler
Junior Research Assistant,
[Expertise: Social Sciences]

PRE-MIDSUMMER PARTY: STARTUP-MINDED RESEARCH ENERGISING EUROPE'S COMPETITIVENESS

Research On Biogenic CO_2 Utilisation

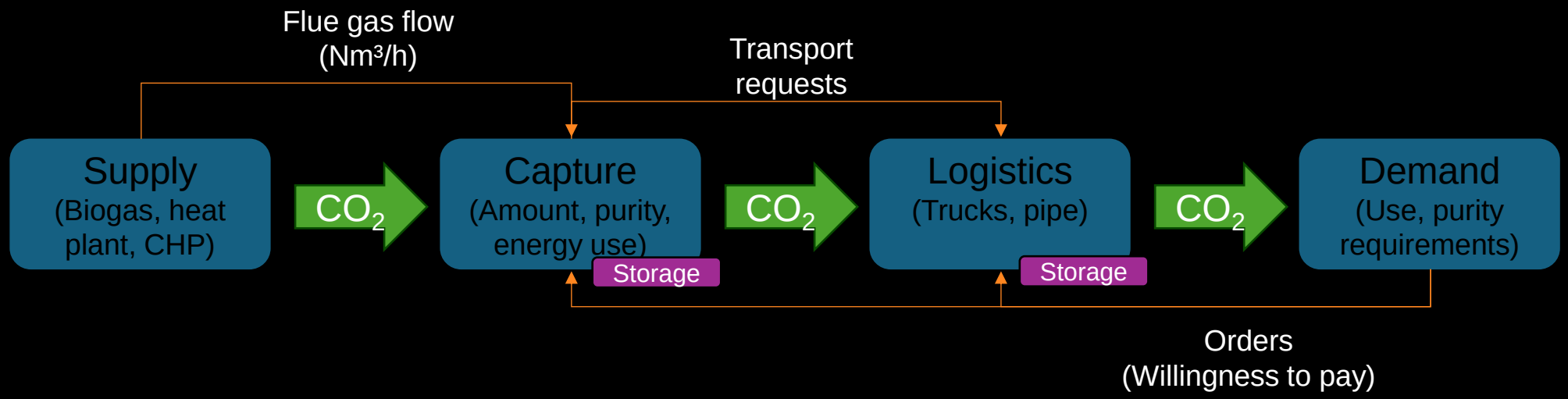
Tue, 9 June 2026 17:30–21:00

Brussels, Belgium

Post-Doctoral Researcher Mika Aalto

Research on Biogenic CO_2 Utilisation

- We look at this as a regional system



- To design support, we need to understand the system.


”
We don’t just need CO_2 capture
We also need CO_2 markets.

Making construction logistics flow: digital coordination for resilient and low-emission building delivery

WHY DOESN'T CONSTRUCTION FLOW LIKE OTHER INDUSTRIES?

- Problem→ Why does construction operate like every project is a one-off experiment?
  - Other industries learned to manage flow, data, and performance decades ago
  - Construction still struggles to turn plans, data, and materials into reliable site performance
  - This problem weakens productivity, resource efficiency, circularity, and the decarbonization of the built environment
- Angle→ How digital planning, material flow coordination, and site logistics can improve construction performance?
- What I am looking for→ EU project partners: contractors, logistics providers, digital tool developers, cities, and researchers working on construction, transport, circularity, or digital twins
- **EU fit** → Horizon Europe Cluster 5: Climate, Energy and Mobility; sustainable prosperity and competitiveness; Clean Industrial Deal; smart and resilient mobility.

Müge Tetik, Postdoctoral researcher
Muge.Tetik@lut.fi
**Looking for funding project partners*
linkedin.com/in/mugetetik1/

Pre-Midsummer Party | 9 June 2026, Brussels

Natalia Lyly

Post-doctoral researcher
LUT Business School

Find me on LinkedIn


CONSTRUCTION &
DEMOLITION WASTE
CONSTRUCTION &
DEMOLITION WASTE

Qaisar Munir
Postdoctoral Researcher
Fiber Composites Laboratory
LUT University, Finland

LUT University

GIVING BUILDINGS A SECOND LIFE

Turning demolition waste into sustainable building materials

OLD BUILDING
Buildings reach the end of their life cycle.

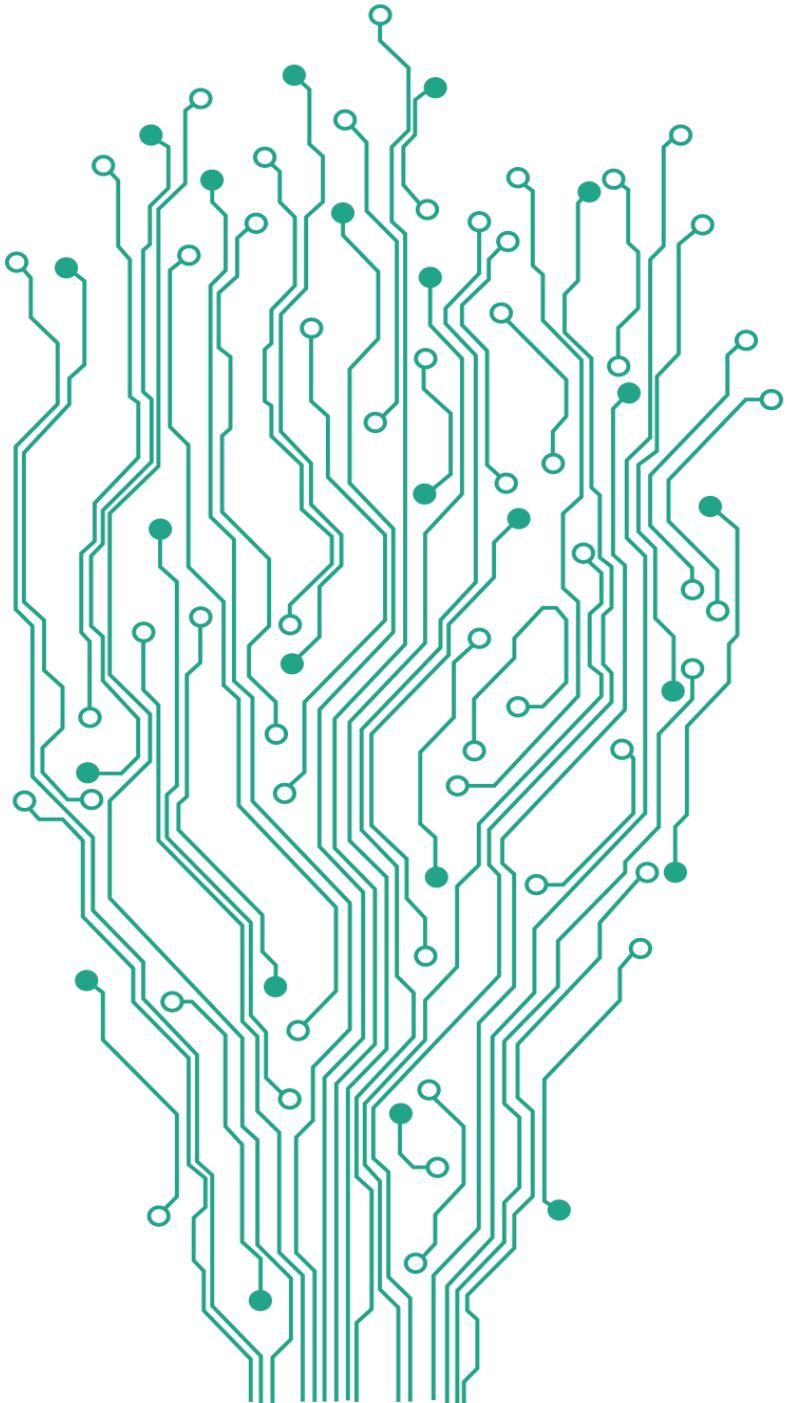
DEMOLITION & FINE FRACTIONS
Careful demolition and processing produce high-quality fine fractions.

SMART DESIGN & MATERIAL OPTIMIZATION
Advanced testing and data-driven design optimize mix performance and durability.

NEW SUSTAINABLE BUILDING MATERIALS
High-performance, low-impact materials ready for a new purpose.

NEW BUILDINGS, LOWER IMPACT
Stronger buildings, fewer natural resources, and a smarter use of waste.

SUSTAINABLE DIGITAL FUTURES



Assistant Professor Minna Vigren
Department of Social Sciences
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https://www.minnavigren.net

LUT University

WHAT IS YOUR PHONE WITHOUT SOFTWARE?

LUT University

JUST AN EXPENSIVE PIECE OF METAL.

REAL MATERIALS. REAL IMPACT.

LUT University

DEVICES. NETWORKS. DATACENTERS.

LUT University

SOFTWARE

DEVICES. NETWORKS. DATACENTERS.

LUT University


DIGITAL ≠ SUSTAINABLE

MEASURE.
SHOW.
STAND OUT.

FOOTPRINT
→ HANDPRINT

START NOW.

Laura
Partanen /
LUT University

Towards acknowledgement of agroecological management systems

Natasha Järviö
Assistant professor in biodiversity assessments
Sustainability Transformations, LUT University
Natasha.jarvio@lut.fi

9.6.2026


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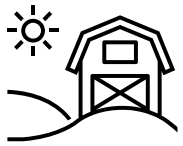

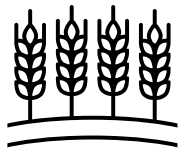

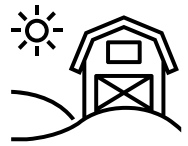

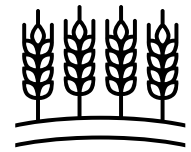


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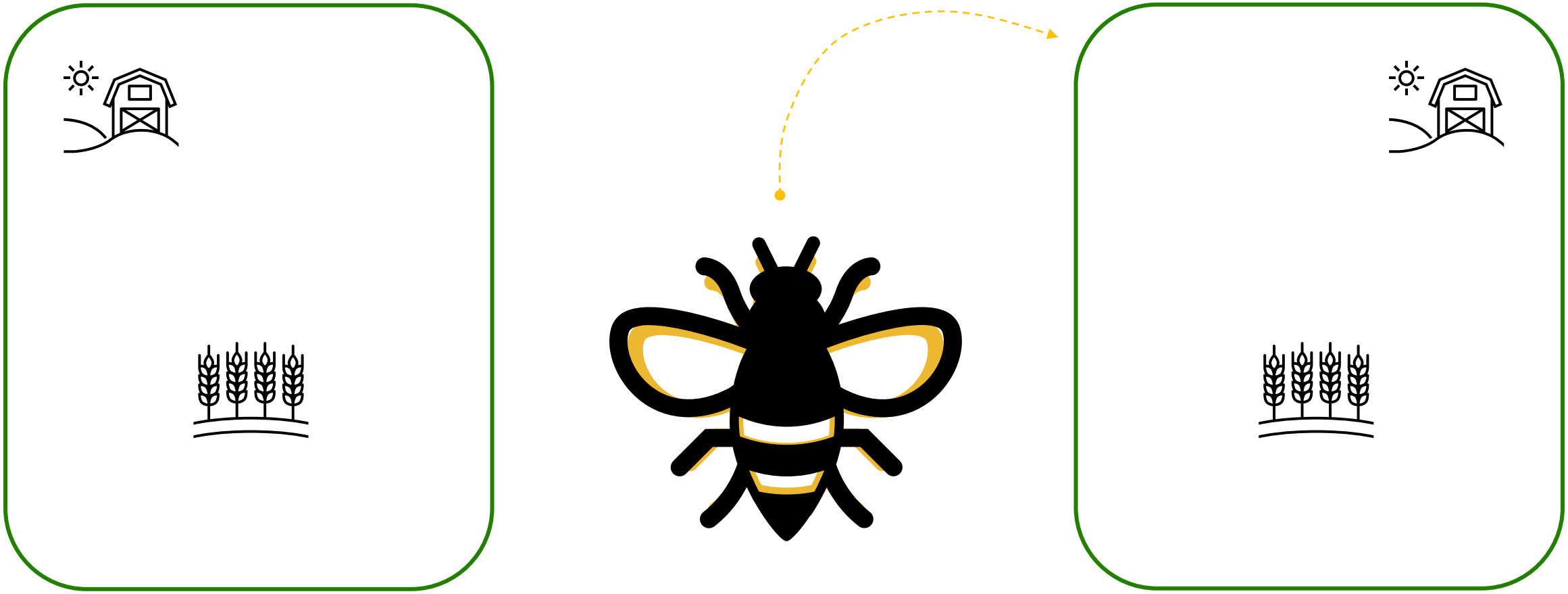


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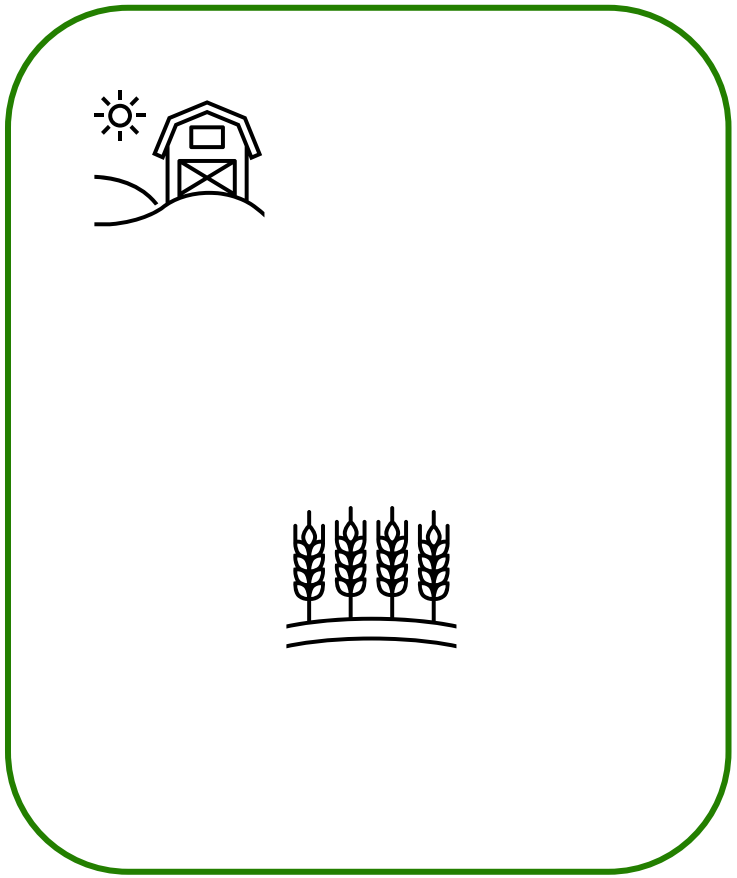
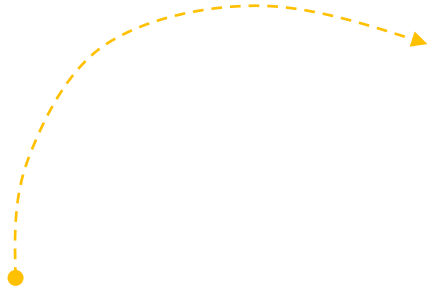
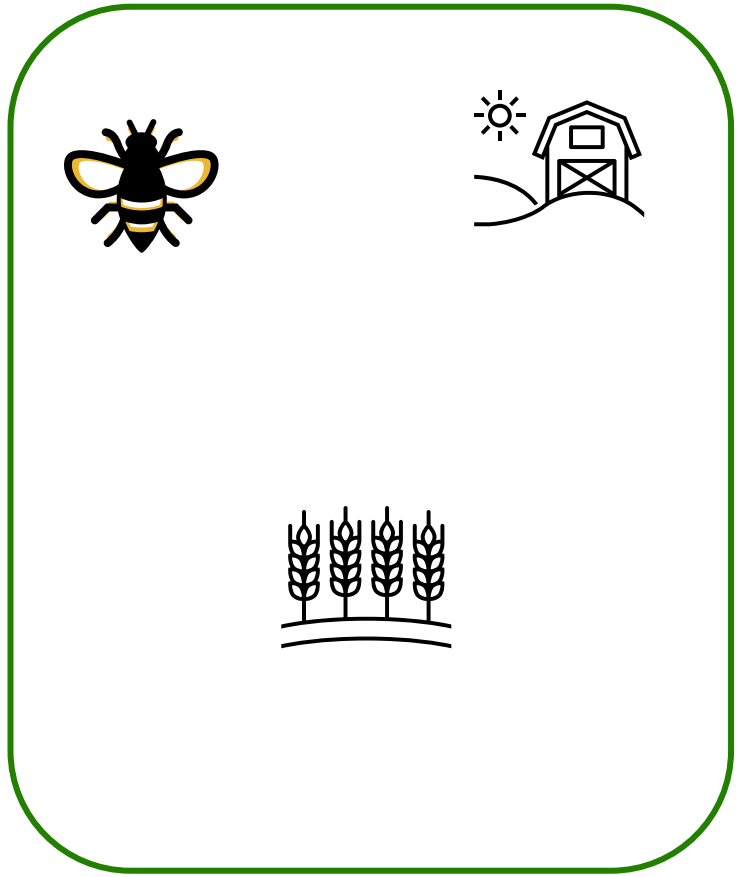
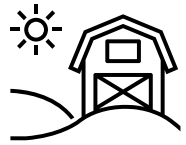
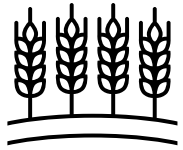
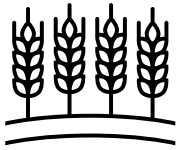






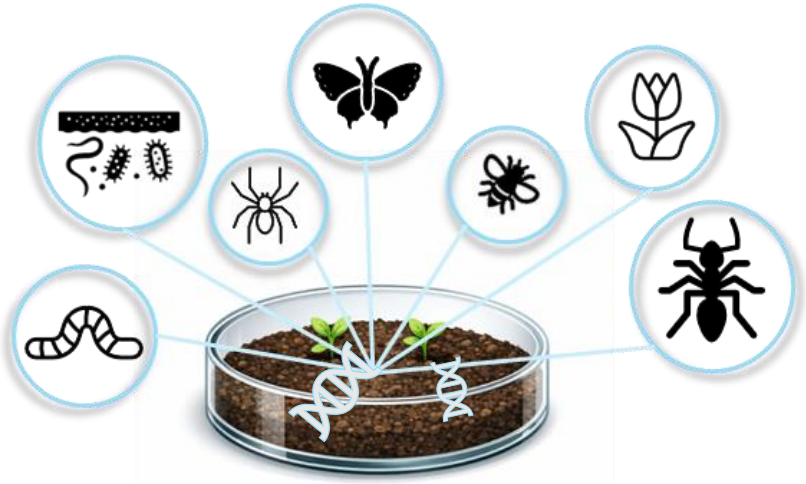






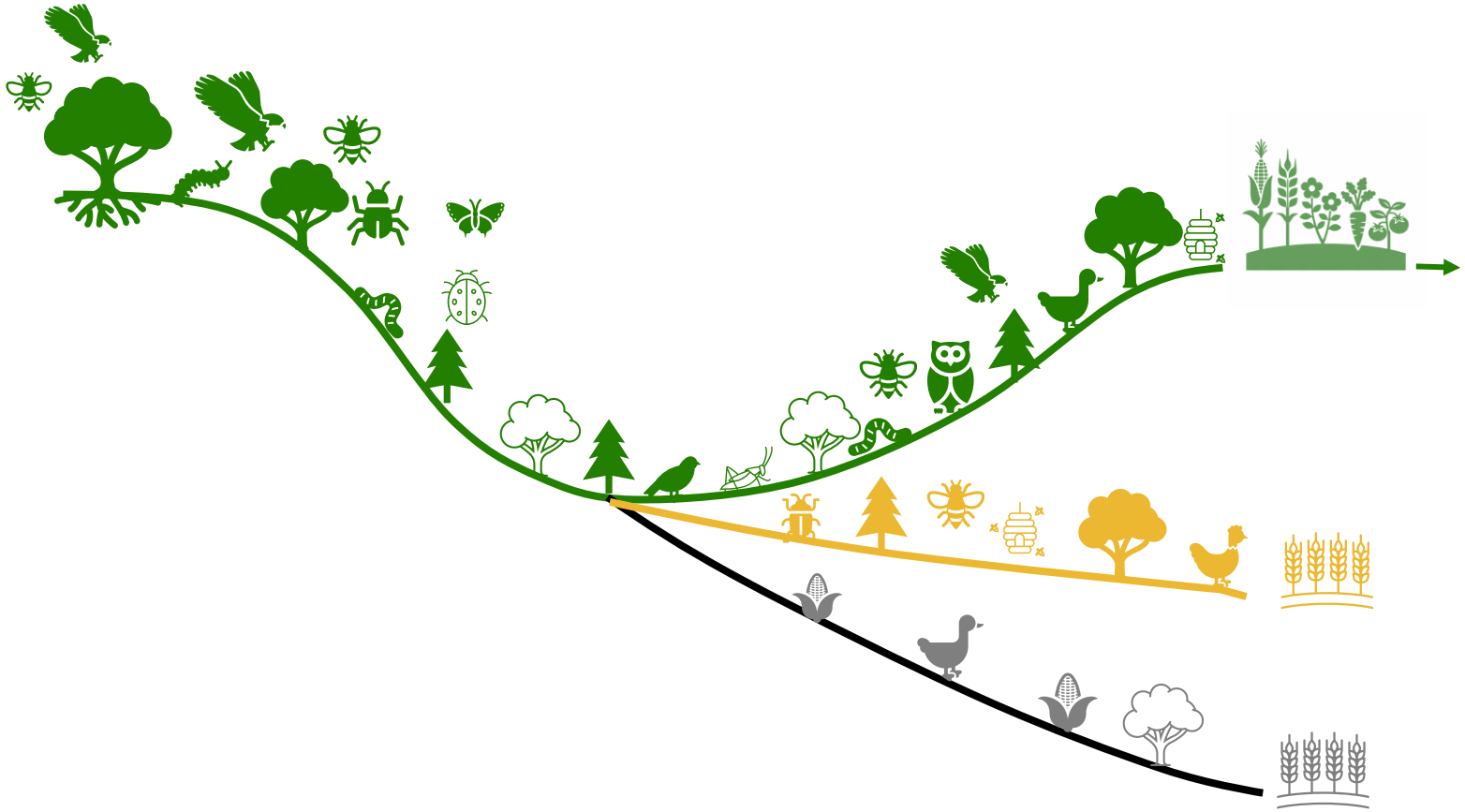
Conventional

Agroecology



Environmental DNA

WHY DO WE NEED THIS?



THANK YOU!

Natasha Järviö
Assistant professor in biodiversity assessments
Sustainability Transformations,
LUT University
Natasha.jarvio@lut.fi

The Future of Energy Starts Below Ground

Every solar panel, battery and wind turbine begins with critical raw materials.

Hasret Sahin
Postdoctoral researcher
Electrical Engineering Department & Solar Economy Lab
LUT University, Finland

LUT University

PROGRAMME

Welcome remarks – LUT Brussels representative **Anne Vuorema** and EU Senior Advisor **Mikko Salo**

A networked, entrepreneurial approach to research: introducing LUT's research platforms – Research Engagement Specialists **Sarah Kilpeläinen** and **Mehran Rezaei**

Electric Mobility Research Center (EMRC) – Deepest industry–university collaboration – Financial Specialist **Tiina Jauhiainen**

A taste of LUT's multidisciplinary research – 8 pitches in 24 minutes

- Post-doctoral Researcher **Mika Aalto**, Energy Technology
- Post-doctoral Researcher **Müge Tetik**, Civil and Construction Engineering
- Post-doctoral Researcher **Natalia Lyly**, LUT Business School
- Post-doctoral Researcher **Qaisar Munir**, Mechanical Engineering / Fibre Composite Laboratory
- Assistant Professor **Minna Vigren**, Social Sciences
- Researcher **Laura Partanen**, Software Engineering
- Assistant Professor **Natasha Järviö**, Sustainability Science
- Post-doctoral Researcher **Hasret Sahin**, Electrical Engineering

Moderated by EU Coordinator **Martti Von Wright** and LUT Brussels representative **Anne Vuorema**.

Questions and discussion

Buffet and networking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