

## Position Description

### 1. General Information

Name of the position	<b>Grand challenges, Regenerative Capabilities, and Breakthrough innovation</b>
Foreseen enrolment date	September 2025
Position is funded by	<ul style="list-style-type: none"> <li>• COFUND, Marie Skłodowska-Curie Actions (MSCA), Horizon Europe, European Union</li> <li>• LUT University</li> <li>• RMIT University</li> </ul>
Research Host	LUT University
PhD awarding institutions	LUT University & RMIT University
Locations	Primary: Kouvola, Finland Secondary: Melbourne, Australia
Salary	32 600 EUR annual <b>gross</b> salary (2 716 EUR monthly gross salary)
Supervisors	<ul style="list-style-type: none"> <li>• Marko Torkkeli, Professor, LUT University</li> <li>• Adeel Tariq, Post Doctoral Researcher, LUT University</li> <li>• Anne-Laure Mention, Professor, RMIT University</li> <li>• Industry Partner: KSOY OY</li> </ul>
Group of discipline	Industrial Engineering & Management, Energy Sector Innovation

### 2. Research topics (only one of these projects will be funded)

#### Project 1: *Measuring Regenerative Capabilities and Ecosystem Impact in Energy Sector Innovation*

Energy sector firms play a pivotal role in driving sustainability by integrating regenerative practices into their operations. However, effectively measuring and tracking these capabilities, as well as understanding their broader impacts on ecosystems and communities, remains a critical challenge. This PhD position will explore methodologies and frameworks to evaluate regenerative practices within the energy sector, focusing on metrics that capture ecological restoration, community well-being, and innovation-driven environmental benefits. By combining qualitative and quantitative approaches, the research aims to develop robust tools for firms to align their innovations with sustainable development goals, fostering accountability and continuous improvement in ecosystem stewardship.

**Supervisors:** Marko Torkkeli (LUT), Adeel Tariq (LUT), Anne-Laure Mention (RMIT)



**Research Fields:** Innovation, Grand Challenges, Clean Energy, and Regenerative capabilities

**Project 2: Role of Multi-Stakeholder Collaborations in Advancing Regenerative Innovations in the Energy Sector**

The design, implementation, and success of regenerative innovations in the energy sector increasingly depend on effective multi-stakeholder collaborations. This domain seeks to investigate how diverse actors—ranging from governments and private firms to communities and NGOs—shape the development and execution of regenerative solutions by the energy firms. The research will examine collaboration dynamics, identify key enablers and barriers, and assess the impact of these partnerships on innovation outcomes. By providing actionable insights, this study aims to guide energy sector firms in fostering inclusive, collaborative ecosystems that drive sustainable and regenerative innovation.

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**Project 3: Leveraging Emerging Technologies to Enhance Regenerative Capabilities in the Energy Sector**

Emerging technologies like Artificial Intelligence (AI), the Internet of Things (IoT), and blockchain are rapidly transforming the energy sector, particularly in the context of regenerative innovations. This topic will explore the role these emerging and future technologies play in enhancing the regenerative capabilities of energy firms, focusing on how they enable breakthrough innovations that promote sustainability. The research will explore how AI, IoT, and cobots, 6G can optimize resource management, improve energy efficiency, and track sustainability metrics, ultimately contributing to a more resilient and regenerative energy system. The study aims to provide actionable insights into harnessing these technologies to drive transformative change in the energy sector.

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**Research Fields:** Innovation, Grand Challenges, Clean Energy, and Regenerative capabilities

### 3. Employment Benefits and Conditions

LUT University offers a 48-month full time work contract (12-month term, extended for 36 months provided that the studies progress satisfactorily). There is a probation period of 6 months and the annual workload for researchers is 1,612 hours / year.

The remuneration, in line with the European Commission rules for Marie Skłodowska-Curie grant holders, and in line with the General collective agreement for Finnish universities, will consist of a **gross annual salary** of est. 32 600 EUR (excl. holiday bonus) with salary increases up to 44 700 EUR as the studies proceed. Of this amount, the estimated first year **net salary\*** to be perceived by the researcher is 2 080 EUR per month. However, the definite amount to be received is subject to national tax legislation.



This project has received funding from the European Union's Horizon Europe research and innovation programme under the Marie Skłodowska-Curie grant agreement N° 101179842

For more information on Finnish taxation visit here [https://www.vero.fi/en/individuals/tax-cards-and-tax-returns/tax\\_card/tax-percentage-calculator/](https://www.vero.fi/en/individuals/tax-cards-and-tax-returns/tax_card/tax-percentage-calculator/).

*\*Net salaries can fluctuate in accordance with an individual's personal circumstances (marital status, age, disability, family and dependents, etc. The above indicative net salaries offer an approximation of what a single person in their early 20s could expect to receive in their bank account after taxes.)*

## Benefits include

- Becoming a Marie Skłodowska-Curie fellow and be invited to join the Marie Curie Alumni Association
- Access to all the necessary facilities at LUT University and RMIT University
- Tuition fees exemption at both PhD awarding institutions
- Travel allowance to cover flights and accommodation for participating in DREAM+PLAN events
- Up to 12 months in Australia
- Occupational health care
- Paid sick leave for a limited period
- Holiday bonus
- 6 weeks paid holiday + Finnish public holidays (all together about 8 weeks).
- Social security coverage

## 4. PhD enrolment

Successful candidates for this position will be enrolled by the following institutions and must comply with their specific entry requirements, in addition to DREAM+PLAN's conditions.

### LUT University

To enrol in a Doctorate program, you must meet the general conditions, namely:

- a relevant Master's degree awarded by a university
- a relevant Master's degree awarded by a university of applied sciences; or
- a relevant applicable study programme abroad which in the awarding country gives eligibility for the corresponding level of higher education.

#### International degrees:

- The degree has to be an official or recognized degree in its country of origin.
- As a rule, at least four years of education is required including a Master's thesis or corresponding final thesis.
- In all cases the doctoral programme in question considers case by case whether degrees earned abroad provide a sufficient foundation for postgraduate studies at LUT University.
- The precondition for the recognition of European degrees is that the degree is a university degree combination earned in accordance with the Bologna Process principles (3+2 years). The applicant is required to submit information in English (for example a



Diploma Supplement) on the scope and the level of the degree/s obtained abroad when applying to LUT.

- If you apply for the right to study for a doctoral degree with an international degree, please contact LUT Doctoral School for additional instructions before submitting study right application documents.
- **Economics and Business Administration:** One-year (60 ECTS credits) MBA-degrees do not generally qualify for doctoral studies. Candidates with an MBA-degree and their eligibility to apply will be considered case-by-case.

More information: <https://www.lut.fi/en/research/doctoral-school>

### **RMIT University**

Visit the website: <https://www.rmit.edu.au/research/research-degrees/how-to-apply>



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