



iiiee

THE INTERNATIONAL INSTITUTE FOR INDUSTRIAL ENVIRONMENTAL ECONOMICS

Advancing Sustainable Solutions

ANNUAL REPORT 2015



The IIIEE by numbers in 2015

Masters students

87
people from
47
countries

Masters graduates

804
people from
90
countries (since 1995)

Staff

35
(18 researchers,
10 PhD students,
7 administration)

Participants in MOOCs

26,000
people from
176
countries

Facebook

2,200
likes on IIIEE page and
3,200
likes on MOOCs page

Research projects

30

Citations

673
(4,297 since 2000)

Publications

39
(889 since 2000)

Turnover

35
million SEK





IIIIEE - Advancing Sustainable Solutions

Lena Neij. Photo: Gunnar Menander

The IIIIEE is an international and interdisciplinary centre within Lund University that advances knowledge on how to catalyse the transition to low-carbon and resource efficient economies.

We focus on the design, application and evaluation of policies and business strategies and provide support for decision makers in public authorities and business - internationally, nationally and locally.

Since its foundation, the IIIIEE education and research has been truly interdisciplinary, collaborative and international.

Interdisciplinary – The IIIIEE has a genuine interdisciplinary approach synthesizing insights not only from economic theory and practice but also from natural sciences, engineering, political science, organizational, legal and behavioural studies. The IIIIEE academic staff has backgrounds in diverse disciplines.

Collaboration – The IIIIEE education and research are performed in close collaboration with business, public authorities and other societal partners. We actively engage our partners in collaborative research, case study projects, lecture series, interactive seminars and workshops.

International – The IIIIEE is highly international, and over the last 10 years the IIIIEE has collaborated with more than 125 international research groups and societal partners.

Following an entrepreneurial start in 1994, the IIIIEE has pioneered a range of activities including interdisciplinary research, high quality international Masters programmes, and award-winning on-line courses, including MOOCs.

In 2015, the IIIIEE celebrated its 20 years anniversary with numerous events that you can read more about in this report. In 2016, the IIIIEE will expand and further develop its unique interdisciplinary

profile and genuine platform for collaboration – this by the establishment of four new professorships.

I welcome you all to visit our website regularly to take part of the events that will be arranged over 2016 and beyond. I also want to thank all research partners, companies and organizations for creative and constructive collaboration in 2015.

Professor Lena Neij
Director of the IIIIEE

2015 Highlights

The year 2015 was very special for the IIIIEE as we celebrated 20 years of activities, education and research. There were many highlights and celebrations.

GREENING THE ECONOMY

LESSONS FROM SCANDINAVIA

A COMPENDIUM BY THE INTERNATIONAL INSTITUTE FOR INDUSTRIAL ENVIRONMENTAL ECONOMICS (IIIIEE)
AT LUND UNIVERSITY



THE IIIIEE LAUNCHES A MASSIVE OPEN ONLINE COURSE (MOOC)

On 19 January 2015, the IIIIEE launched its first Massive Open Online Course (MOOC), with the title “Greening the Economy: Lessons from Scandinavia”. The course explores greening the economy on four levels – individual, business, city, and nation, and looks at the relationships between these levels and gives many practical examples of the complexities and solutions across the levels.



THE SWEDISH MINISTER FOR FINANCIAL MARKETS AND CONSUMER AFFAIRS VISITS THE IIIIEE

On 17 February 2015, the Swedish Minister for Financial Markets and Consumer Affairs, Per Bolund, visited the IIIIEE. The IIIIEE presented its consumption-related projects and engaged in a discussion on how to make sustainable consumption and lifestyle happen today.



KICK-OFF MEETING FOR THE GUST PROJECT AT THE IIIIEE

On 9-11 February 2015, the IIIIEE hosted a kick-off meeting for the project called “Governance of Urban Sustainability Transitions: Advancing the Role of Living Labs” (GUST), which is funded by JPI Urban Europe and coordinated by the IIIIEE. The meeting brought together researchers from Lund University (Sweden), Durham University (UK), the Dutch Research Institute for Transitions (Netherlands), Joanneum Research (Austria) and the University of Manchester (the UK), to discuss and plan future activities.



THE IIIIEE JOINS THE REES RESEARCH PROGRAMME

The Board of Mistra decided to invest up to 42 million SEK, over a four-year period, in the REES (Resource-Efficient and Effective Solutions, based on circular economy thinking) research programme. Together the REES partners will contribute towards the European target of a 30% reduction in domestic material use by 2020. At the IIIIEE, the programme is led by Prof. Oksana Mont and two senior researchers, Dr. Carl Dalhammar and Dr. Andrius Plepys. Three PhD students were employed during 2015 at the IIIIEE, Julia Nussholz, Katherine Whalen and Leonidas Milios, and they are now working in the REES research programme, based at the IIIIEE.



PHD THESIS DEFENCE

On 13 March 2015, Matthias Lehner at the IIIIEE defended his PhD thesis called “Sustainability in Store”. In his thesis, Matthias studied the interaction between retailers, their stakeholders and market demand to understand how the complexity of the sustainability discourse is translated into concrete action on the shop floor. His results show retailers to be highly flexible in their work with sustainable consumption and production, however also quite unstrategic.



THE 2015 SUSTAINABLE BUSINESS CASE COMPETITION

The Sustainable Business Challenge is a case competition in collaboration between the School of Economics and Management (LUSEM), the International Institute for Industrial Environmental Economics (IIIEE) and the corporate sponsor ASSA ABLOY Entrance Systems. On 28 April 2015, the case competition took place and it was followed by a dinner and a prize ceremony. MSc student Kelly Dorkenoo at the IIIEE was one of four who won prizes.



URBAN FUTURES – AN INTERNATIONAL WORKSHOP AT THE IIIEE

On 27 May 2015, the IIIEE hosted an international workshop with speakers from Germany, the UK, Sweden and Denmark focusing on the goals, impacts and afterlife for innovative sustainable initiatives in cities. More than 100 people working in academia, business, city governments and NGOs attended the Urban Futures event at the IIIEE. The international workshop was part of the GUST (Governance of Urban Sustainability Transitions) project, the Malmö Innovation Platform and the 20 years celebrations for the IIIEE.



THE 20 YEARS IIIEE ANNIVERSARY CONFERENCE

On 26-27 August 2015, the IIIEE celebrated 20 years by hosting the IIIEE20 Anniversary Conference organised together with the IIIEE international alumni network. The conference attracted over 300 people who participated, inspired, contributed and engaged in knowledge sharing and networking during two fantastic days together. The IIIEE20 Anniversary Conference reflected on the past 20 years of achievements of scientific knowledge, but was also looking ahead, discussing the future of sustainable development.



THE IIIEE AND LUND UNIVERSITY JOIN CLIMATE-KIC

The IIIEE and Lund University joined Climate-KIC (Knowledge and Innovation Communities - KIC). It is the main EU climate innovation initiative. The IIIEE is engaged in a summer school - The Journey - as part of the Climate-KIC, which offers top-graduates a journey across Europe to learn about climate change science.



POLISH DELEGATION VISITS THE IIIEE

In August 2015, the President of Zabrze, Malgorzata Manka-Szulik, and a Polish city management delegation visited Lund, Malmö and the IIIEE, to learn more about sustainable urban development. The study tour was a follow-up on research conducted by IIIEE students and staff in the City of Zabrze, laying the foundation for a new "Smart City" district.



THE IIIEE DIRECTOR, PROFESSOR LENA NEIJ, BECAME A MEMBER OF THE SCIENTIFIC COUNCIL FOR SUSTAINABLE DEVELOPMENT

In July 2015, the Director of the IIIEE, Professor Lena Neij became a member of the newly established Scientific Council for Sustainable Development. The council will strengthen the collaboration between academia and the Swedish Government in their joint efforts towards sustainable development. The council will function as an advisory group for the Swedish Government with a special focus on sustainable development; to work towards a transformation to a green economy, environment and climate.



SCHOLARSHIP WINNER STEVEN CURTIS GRADUATES FROM THE IIIEE AND CLOSSES THE CIRCLE

In September 2015, some 22 Masters students took part in the IIIEE graduation ceremony, including Steven Curtis. In 2012, Steven Curtis won the first prize in the Lund University "Challenge Your Perspectives" scholarship competition for American students. The Swedish Ambassador to the USA, Jonas Hafström, handed over the diploma in Washington DC. Then, at the IIIEE graduation ceremony, Steven once again received a diploma from the hands of Jonas Hafström, who attended the ceremony in his new role as the Chairman of Lund University. This time, it was the diploma of his MSc Degree in Environmental Management and Policy, the programme that Steven won the scholarship to study.



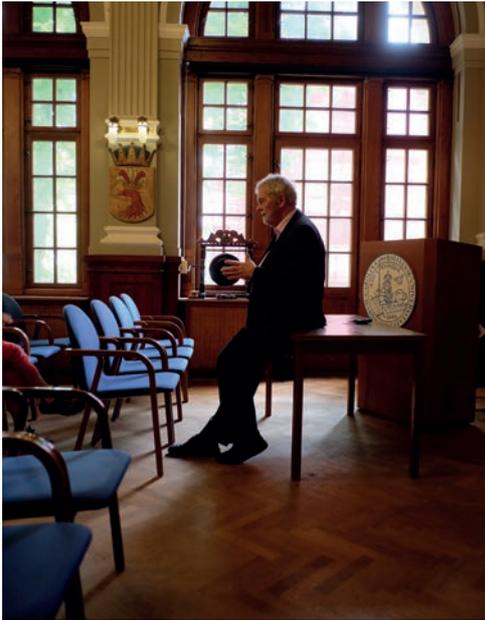
THE PRIZE "ÅRETS TALANG" GOES TO IIIEE MSC GRADUATES AND PHD CANDIDATE

On 5 November 2015, three IIIEE MSc graduates (Sarah Kloke, Per Wretlind and Mats Tedenvall) and one IIIEE PhD candidate (Nora Smedby) were awarded the prize "Årets talang" (Talent of the Year) which is one of three categories of the annual prize "Årets framtidsbyggare". The award ceremony was held at Lund University and the awards were presented by Torbjörn von Schantz, the Vice Chancellor of Lund University.



TOWARDS A COMPETITIVE LOW CARBON ECONOMY – PARIS 2015

In November 2015, Associate Professor Luis Mundaca and Professor Lena Neij at the IIIEE, participated in a jointly organised seminar with IVA (The Royal Swedish Academy of Engineering Sciences), with the title "Towards a competitive low carbon economy - Paris 2015". The seminar was organised in light of the UN Climate Change Conference (COP 21) in Paris.



IIIEE VISITING PROFESSOR, PETER HENNICKE, RECEIVED THE GOTHENBURG AWARD FOR SUSTAINABLE DEVELOPMENT

On 19 November 2015, the IIIEE Visiting Professor, Peter Hennicke, received the prestigious Gothenburg Award for Sustainable Development in the field of energy efficiency together with Beate Weber-Schuerholz, and Jeremy Leggett in the area of solar energy.



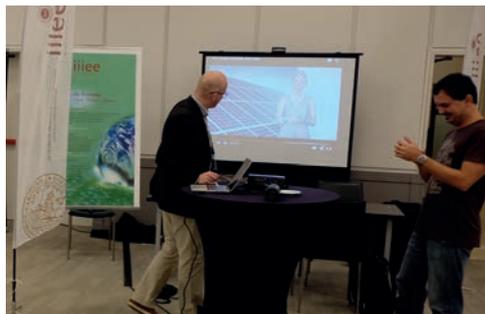
IIIEE AT THE CUE2015 – APPLIED ENERGY SYMPOSIUM AND SUMMIT

On 15-17 November 2015, the CUE2015 - Applied Energy Symposium and Summit took place in Fuzhou in Fujian, China. The IIIEE was part of the organizing committee and was also one of the sponsoring institutes. The IIIEE took part in the session on policy options targeting low-carbon energy systems.



CALL FOR PROFESSORS ON LOW-CARBON AND RESOURCE EFFICIENT ECONOMIES

In December 2015, the IIIEE announced a call for four new professorships on low-carbon and resource efficient economies. The professorships mirror the four strategic areas of research at the IIIEE.



GLOBAL CLEANER PRODUCTION AND SUSTAINABLE CONSUMPTION CONFERENCE

On 1-4 November 2015, the Global Cleaner Production and Sustainable Consumption Conference took place in Sitges, Barcelona, Spain. A majority of IIIEE researchers attended this conference, as part of the IIIEE20 anniversary, with a special focus on Catalyzing Urban Transformations (CUT).

Education

All education at the IIIEE is designed to equip students with knowledge, skills and personal qualities needed to advance strategies for sustainable solutions.

A central feature of our education is that it is both international and interdisciplinary. This is reflected in the composition of our teachers as well as in the students we admit, and it allows us to train students that are able to analyze and understand environmental challenges, and their potential solutions, from many different perspectives. In fact, the IIIEE (Prof. Lena Neij) holds a **UNESCO Chair on Education for Sustainable Development**.

At the core of the IIIEE education activities are its two international Masters programmes: The **MSc in Environmental Management and Policy (EMP)** and the **MSc in Environmental Sciences, Policy and Management (MESPOM)**.

We are very proud to see that graduates of these programmes go on to have careers where they truly become agents of change influencing the sustainability agenda at different levels of society across the globe.

And on behalf of the Center for Environmental and Climate Research (CEC) we provide an undergraduate course on **Industrial Environmental Economics** as well as a **MSc track on Strategic Environmental Management and Policy**.

We also run a number of courses in collaboration with, or on commission for other faculties within Lund University. Each year we give young engineering students an **Introduction to Industrial Environmental Management** in a course commissioned by the Faculty of Engineering (LTH).

In 2015 we also initiated collaborations with two new partners within Lund University, the Sten K. Johnson Centre for Entrepreneurship at the School of Economics and Management and the School of Social Work at the Faculty of Social Science. Together we developed a **course on Social Innovation as a strategy for sustainability**. It is a course that is directed at Swedish and International undergraduate students within Lund University.



Highlight: The strategic environmental development course (SED) in 2015

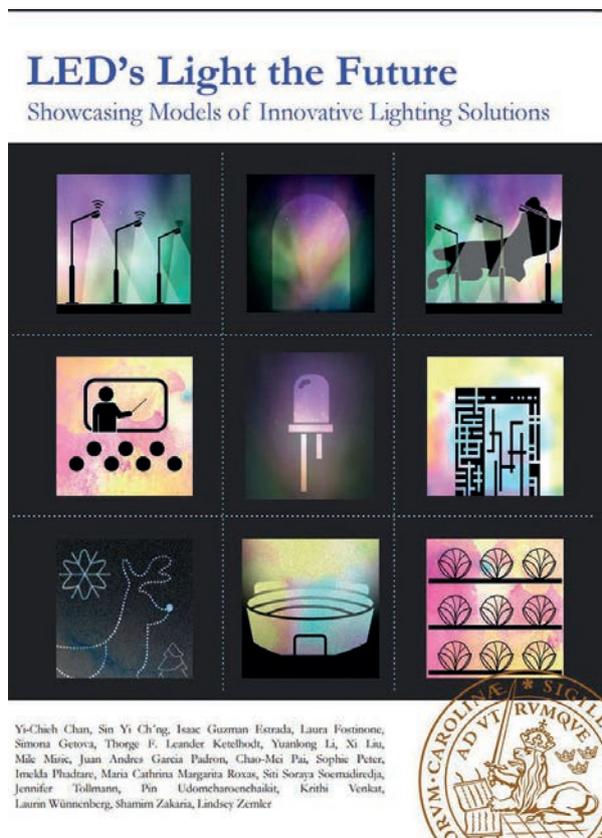
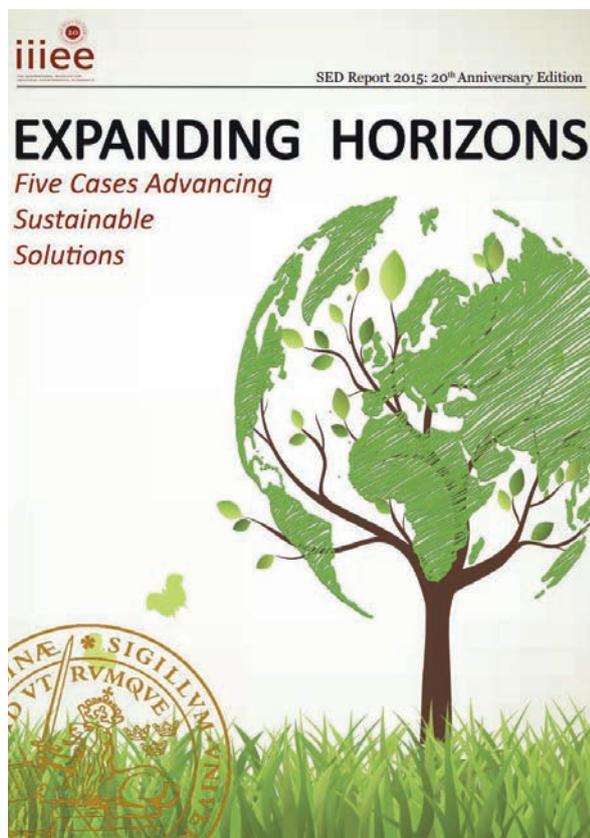
The SED course is our hands-on, strategic learning exercise and an opportunity for students to gain a unique insight and experience on how to apply theoretical knowledge in real-life complex systems. During 2015, two SED reports were completed, one by the EMP students and one by the MESPOM students.

Expanding Horizons – Five Cases Advancing Sustainable Solutions (EMP)

This report covers five different projects from Portugal, Egypt, Slovenia, India and Poland. These projects include waste and water management in wine-making, energy service business models in outdoor lighting, fostering eco-innovation and green jobs, opportunities and lessons from shipping ports, and moving from ideas to action in energy planning. All these projects focus on how to advance sustainable solutions in a variety of sectors and places.

LED’s Light the Future – Showcasing Models of Innovative Lighting Solutions (MESPOM)

This report explores the potential and impact of LED’s or light emitting diode technology. It highlights best practices in implementation, including business models for smart street lighting, revitalizing pedestrian tunnels through LED’s, energy efficient lighting systems in academia, and using LED’s to improve food systems. The report highlights that advances in technology means that lighting is much more than illumination. It also includes the emotional and biological well-being of people.



Left: EMP SED report 2015 - Expanding Horizons, Five Cases Advancing Sustainable Solutions. Right: MESPOM SED report 2015 - LED’s Light the Future, Showcasing Models of Innovative Lighting Solutions

Alumni Network

The alumni network is a vibrant group of international environmental professionals with experience and positive energy. The IIIEE takes great pride in our thriving network of graduates!

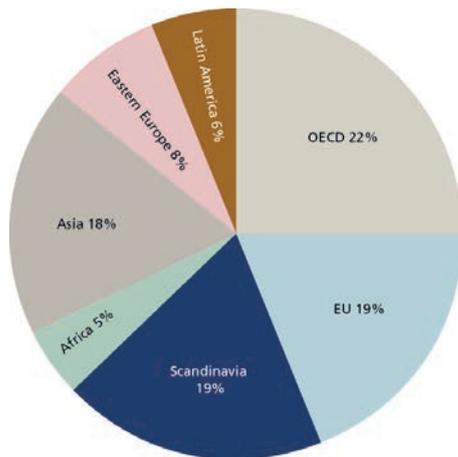
The intense and challenging educational programmes at the IIIEE, spiced with dedicated team-building activities, create strong personal ties – effectively connecting and shrinking our globalised world.

The education offered at the IIIEE draws extensively on alumni participation and each year 20–30 alumni are involved in case studies, thesis projects, study visits, examining student work, or just dropping by to talk about their professional life after graduation.

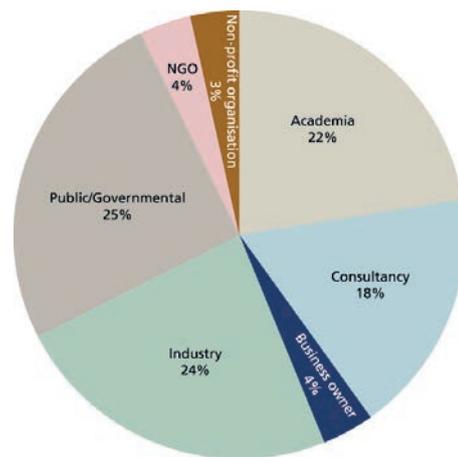
Important international environmental gatherings, such as the global climate negotiations and major conferences, always

gather a group of alumni and thereby offer a chance to meet, greet and discuss.

The IIIEE alumni network consists of more than 800 graduates, from more than 90 countries, and it is an organisation founded by the inaugural IIIEE graduates. It elects an executive committee that governs the organisation, collects membership fees, publishes a newsletter and organises alumni conferences and other related gatherings.



IIIIEE graduates' nationalities in 2015



IIIIEE graduates' career development in 2015



Photo: Johan Persson

International Visitors

The IIIEE welcomes international guests every year. In 2015, some of our distinguished visitors included Prof. Peter Hennicke, Prof. James Evans, Dr. Fouad Khan and Prof. Eva Heiskanen.

PROF. PETER HENNICKE, WUPPERTAL INSTITUTE FOR CLIMATE, ENVIRONMENT, GERMANY

Peter Hennicke was a visiting professor at the IIIEE (2014–2015). His research focuses on energy and his stay at the IIIEE was funded by the Swedish Energy Agency. He has been engaged in the development of the German Energiewende and in 2014 he was awarded the German Environmental Award, and in 2015 he won the Gothenburg Award for Sustainable Development.

"The IIIEE is an inspiring research community with an outstanding international reputation."



PROF. JAMES EVANS, UNIVERSITY OF MANCHESTER, UK

James Evans is a visiting researcher at the IIIEE (2014–2017). His main fields of interest relate to urban environmental governance and the ways in which cities learn to become more sustainable. His stay at the IIIEE is funded by the Swedish Research Council for Planning, Agricultural Sciences and the Environment.

"The IIIEE has exceptionally strong links with policy and industry networks."

DR. FOUAD KHAN, LUC HOFFMANN INSTITUTE, SWITZERLAND

Fouad Khan is a visiting researcher at the IIIEE (2015–2016) working on sustainability transitions in cities related to the Earth Hour City Challenge. He is a post-doctoral fellow at the Luc Hoffman Institute and he is involved in a new global research project that aims to identify high leverage points for urban footprint reduction.

"As a leading edge research institution, the IIIEE has set up a stimulating intellectual and physical space for pondering some of the critical questions of our time".



PROF. EVA HEISKANEN, UNIVERSITY OF HELSINKI, FINLAND

Eva Heiskanen was a visiting professor at the IIIEE (2013–2015). Her main fields of interest relate to energy, the role of users in sustainable innovation, and institutional change. She is Research Director at the Consumer Society Research Centre, University of Helsinki and she is a Docent at Aalto University School of Business.

"The IIIEE is a vibrant multidisciplinary workplace with strong ambitions to use education and research to change the world."

Greening the Economy: Massive Open Online Courses

The year 2015 marked a milestone at the IIIEE launching one of three Massive Open Online Courses (MOOCs) from Lund University ever. Later in 2015 another IIIEE MOOC was ready for launch.

The IIIEE now offers two MOOCs in a series on greening the economy. The first MOOC is called “Greening the Economy: Lessons from Scandinavia” and the second is entitled “Greening the Economy: Sustainable Cities”. The IIIEE expect further MOOCs in the series.

The MOOC activities at the IIIEE have indeed been massive, as seen by the thousands of visitors, likes on facebook, learner nationalities, and overwhelmingly positive feedback.

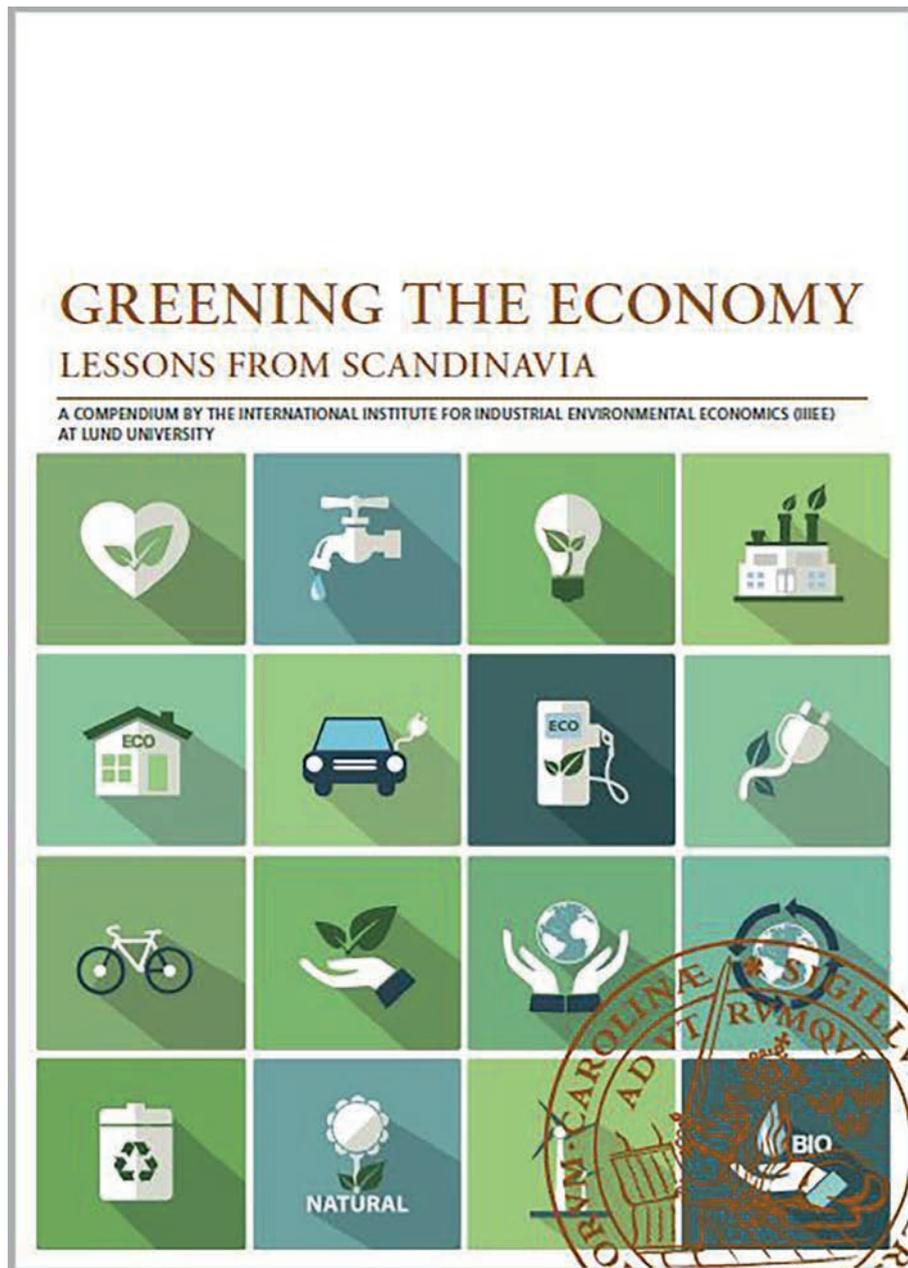
During 2015, a total of 26,000 people signed up for the two MOOCs, coming from 176 countries (about 35% from emerging economies). Approximately 50% of the learners had not heard of Lund University or the IIIEE before signing up.

Some 95% of the participants judged the quality of the course materials as “good or excellent”. Over 90% of the participants judged the video lectures as “valuable or extremely valuable”.

For the MOOCs, a tailor-made compendium was developed based on the contents of the video lectures and interviews. It was created by about 30 contributors and 3 editors. It is accessible via Lund University publications as Creative Commons and it has during 2015 been downloaded approximately 3000 times (and growing).

The MOOCs at the IIIEE are intended to give potential students an insight into the educational programs at the IIIEE before enrolling, disseminate the research produced at the IIIEE, and develop a global community of learners on greening the economy.





GREENING THE ECONOMY: LESSONS FROM SCANDINAVIA

How can we live a good life on one planet with over seven billion people? This course explores greening the economy on four levels – individual, business, city, and nation. It looks at the relationships between these levels and gives a number of examples of the complexities and practical solutions from the Scandinavian region.

The course is accessible here: www.coursera.org/learn/greening-the-economy

GREENING THE ECONOMY: SUSTAINABLE CITIES

How can we shape urban development towards sustainable and prosperous futures? This course explores sustainable cities as engines for greening the economy. The course themes are sustainable urban transformation, infrastructure and planning, urban living labs, future urban visions, and sustainable urban lifestyles.

The course is accessible here: www.coursera.org/learn/gte-sustainable-cities

IIIIEE20 – 20 years of the IIIEE

In 2015, the IIIEE celebrated 20 years of action. IIIEE20 looked back at how the IIIEE has established itself as a leading interdisciplinary academic institution, which combines cutting edge and solution-oriented research with a whole-hearted effort in creating unique learning experiences.



IIIIEE20 KICK-OFF AND MOOC LAUNCH
With smiles, a brand new MOOC (Massive Open Online Course) and some Swedish folk dancing, the IIIEE20 celebrations were kicked off!



SUSTAINABLE BUSINESS CASE COMPETITION
Together with the Lund University School of Economics and Management, we successfully arranged a case competition featuring a live case provided by ASSA Abloy Entrance Systems.



SUSTAINABLE CITY EVENT
The aula at the IIIEE was filled to capacity with local and regional stakeholders discussing how to advance collaboration on the sustainable city agenda.

BOOK LAUNCH ON INTERNATIONAL AND INTERDISCIPLINARY TEACHING

How to teach international and interdisciplinary groups? The IIIEE published a book gathering experiences from our 20 years of teaching – with input from other Lund University institutions.



GREEN ECONOMY SEMINAR IN STOCKHOLM
In co-operation with the Royal Swedish Academy for Engineering Sciences, the IIIEE hosted a seminar on the green economy in Stockholm.





IIIEE20 ANNIVERSARY CONFERENCE

Over 300 friends and colleagues from all over the world gathered in Lund for a two-day event and a great evening celebration. Topics included the sharing economy, EPR (Extended Producer Responsibility), lessons from IKEA environmental management, and climate policy. Social highlights included lots of fantastic people, a new IIIEE song and a speech by founding director Karl Lidgren.

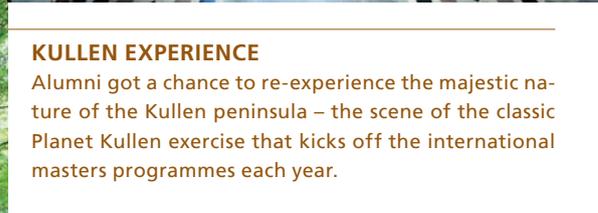
THE IIIEE FLAGS

For once all the flags at the IIIEE were out! Some 125 flags representing graduates from our international masters programmes and another 20 from the Youth Convention back in 2000 (when the Swedish King was the guest of honour). Each year we fly the flags of the graduating students - which would make up some 20-25 flags - so to march with 125 was quite an experience!



GRADUATION CEREMONY

The 20th batch of graduates from our Master in Environmental Management and Policy were celebrated by families and friends after their achievement.



KULLEN EXPERIENCE

Alumni got a chance to re-experience the majestic nature of the Kullen peninsula – the scene of the classic Planet Kullen exercise that kicks off the international masters programmes each year.



IIIEENEXT20

Led by our group of enthusiastic doctoral students, we unleashed our creativity to look at the IIIEE in the future.



Research

The IIIEE is a centre of excellence conducting interdisciplinary and collaborative research focused on advancing sustainable solutions in governance and management.

We advance knowledge on how to catalyse the transition to low-carbon and resource efficient economies across different levels of governance and management. We have a genuine interdisciplinary approach to all IIIEE research. We synthesize insights not only from economic theory and practice but also from natural sciences, engineering, political science, organisational, legal and behavioural studies. We conduct research in close collaboration with business, public authorities and other societal partners.

INTERNATIONAL AND NATIONAL POLICY INTERVENTION - FOR A TRANSITION TO LOW-CARBON AND RESOURCE EFFICIENT ECONOMIES

In this theme, the IIIEE advances knowledge on policy instruments, developed and implemented by governments and international authorities. We develop methodologies and analytical approaches and provide new insights in areas such as a green economy, low-carbon technologies and mitigation strategies, resource and product policy, and a circular economy. We identify barriers to policy intervention, analyse learning opportunities and address multi-level governance interactions. The research is conducted in collaboration with governmental authorities and organisations.

URBAN GOVERNANCE AND EXPERIMENTATION - FOR A TRANSITION TO LOW-CARBON AND RESOURCE EFFICIENT ECONOMIES

In this theme, the IIIEE advances knowledge on urban governance, experimentation and innovation. We go beyond traditional urban planning by including tools such as visions, collaborative dialogues, urban living labs, financing models, local regulations and public procurement for urban transition processes. The research is conducted in collaboration with municipalities,

businesses, public organisations and other societal partners.

BUSINESS MANAGEMENT AND PRACTICE - FOR A TRANSITION TO LOW-CARBON AND RESOURCE EFFICIENT ECONOMIES

In this theme, the IIIEE advances knowledge on sustainable business management and practice. Based on the conviction that the transition towards sustainable development requires both changes in business practice and institutional context, we research sustainable business models, management approaches to support industry transitions, corporate sustainability strategies, CSR and the nexus of corporate action (private regulation), standards and public policy. The research is conducted in collaboration with businesses, governmental authorities and other societal organisations.

CONSUMPTION GOVERNANCE - FOR A TRANSITION TO LOW-CARBON AND RESOURCE EFFICIENT ECONOMIES

In this theme, the IIIEE advances knowledge on consumption governance. Based on knowledge about barriers and drivers for sustainable consumption and lifestyles, we conduct research on sustainable consumption policies, behavioural economics and market responses to policy intervention, the sharing and prosumer economy, as well as visions, pathways and scenarios for sustainable consumption. The research is conducted in collaboration with governmental authorities, businesses and other societal organisations.

On the following pages, we provide short articles that highlight examples of research projects covering the key research themes at the IIIEE. There are many more research projects at the IIIEE and short articles on our website: www.iiiiee.lu.se/research





Photo: Sara Bernstrup

INTERNATIONAL AND NATIONAL POLICY INTERVENTION

Greening the Economy Depends on High National Ambitions

Supporting a resource efficient and low-carbon economy is a high priority for most governments today. But which way is the most effective for the transition towards a green economy? IIEE researchers Luis Mundaca and Lena Neij concluded a major global benchmark study in search of the answers.

With the start of the global financial crisis in October 2008, national policy ambitions towards a green economy took off and have increasingly focused on low-carbon technologies, such as energy efficiency and renewable energy. Many governments saw the green energy sector as the best way out of the crisis and into a more sustainable economic future.

So how is this best done? Which are the success factors of a national policy that can truly contribute to greening the economy?

“When the global financial crisis started in 2008, the need for a more sustainable economy – socially and ecologically – returned to the policy agenda, slightly re-framed and

re-branded and with a strong emphasis on fiscal policy. Still, there is no consensus about its definition, but there seems to be agreement on what a green economy should address. And this includes job creation, increasing resource efficiency, reduction of greenhouse gas emissions, investments in natural capital, and improvements in human well-being”, says Luis Mundaca.

Against this background, Luis Mundaca and Lena Neij launched a large policy evaluation research project in 2010, covering all geographical regions of the world with a closer look at specific countries; including New Zealand, USA, the UK, Germany, South Korea, Sweden, Chile and China.

“We saw a need for a broad empirical study mapping data and results of various policy interventions, aiming for a green energy economy,” states Luis.

In December 2015, the IIIEE team completed the project and presented the final results in Stockholm. The Swedish Energy Agency provided the necessary funding to this ambitious evaluation and international comparison.

“The overall conclusion is that greater ambition, finance, cooperation, and policy integration are needed to drive a serious transformation,” states Luis. “And yes – there are success factors of a national policy that truly contributes to greening the economy”, says Luis Mundaca.

Luis concludes that “Bridging the gap between science and policy is always a challenge, but also fascinating and rewarding. Together with colleagues from other European research institutions, Lena and I are putting together a special issue that will summarise the latest research on policies for a green energy economy. The initiative has obtained great attention from research colleagues around the world. We hope that our results will have an impact among policy makers.”

POLICY INTERVENTION FOR A COMPETITIVE GREEN ENERGY ECONOMY

IIIIEE researchers: Lena Neij, Luis Mundaca, Lars Strupeit (PhD) and Jonas Sonnenschein (PhD)

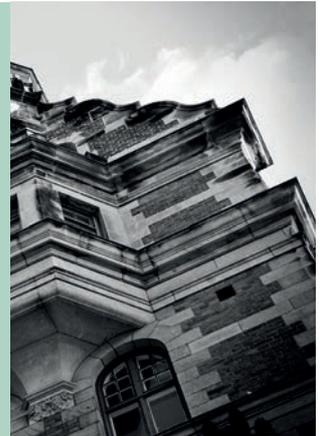
Project period: January 2010 – December 2015

Budget: 10 million SEK

Funding body: Swedish Energy Agency

Academic partners (selected): Technical University of Denmark, Swiss Federal Institute of Technology in Zurich (ETHZ), Switzerland, University of Seville, Spain, National Renewable Energy Laboratory, USA, China Academy of Building Research, China

Business partners (selected): Solar PV companies, Germany, Chinese Wind Energy Association, China, Basque Centre for Climate Change, Spain





URBAN GOVERNANCE AND EXPERIMENTATION

Governance of Urban Sustainability Transitions – What are Urban Living Labs?

A new trans-European project aims to better define and evaluate the concept of Urban Living Labs. One goal is to understand what can be shared and learned in order to advance urban sustainability transitions.

Across Europe, so-called Urban Living Labs are being developed as a response to the need to understand how we can combine economic, social and ecological sustainability in our growing cities. Urban Living Labs are areas in cities where innovations are tested in buildings, transportation and energy systems. When tested in a real life situation, the results are much more practical than when tested in a controlled environment.

However, despite hundreds of sites across Europe being labelled as Urban Living Labs, not much work has been done to understand how these labs function and how we can share lessons learned and scale up their impact across European cities.

Kes McCormick is a researcher at the IIIIEE and the coordinator of the Governance of Urban Sustainability Transitions (GUST)

research project, engaging 17 researchers from four countries. He underlines that this trans-European research project is just starting to reveal new insights:

“We aim to better define the concept of Urban Living Labs, looking at three main factors: firstly the design of the labs: what are the frames, who are the actors and where are they situated? We will look at their practices: what happens on a daily basis? And as a third factor: the processes. How do these labs affect the surrounding cities and society?”

“We are mapping 12-16 detailed examples of Urban Living Labs from the contributing countries, and looking for possible categories. This will make it much easier to measure and evaluate the results. Because if you can’t measure them in some way – it

is difficult to manage them”, Kes McCormick explains.

He presents Malmö as a nearby city with many examples of different types of labs; the residential area of the Western Harbour being one type where a range of urban sustainability goals were integrated into the design, and the new apartment building called Hållbarheten (“Sustainability”) representing a totally new approach, which is an energy efficient building taking advantage of smart energy systems.

“Seen as a lab, the apartment building is small, involving only two main partners, the City of Malmö and the energy company Eon, but nevertheless very interesting. Such small-scale expe-

riments can have significant impacts on the partners involved and beyond. As with all labs that we study, we are interested in the detailed level”.

In the end, Kes McCormick says, “we want to understand what can be shared and learned across Europe. As researchers, our contribution is to help investigate the lessons learned, in order to advance urban sustainability transitions”.

GOVERNANCE OF URBAN SUSTAINABILITY TRANSITIONS: ADVANCING THE ROLE OF LIVING LABS

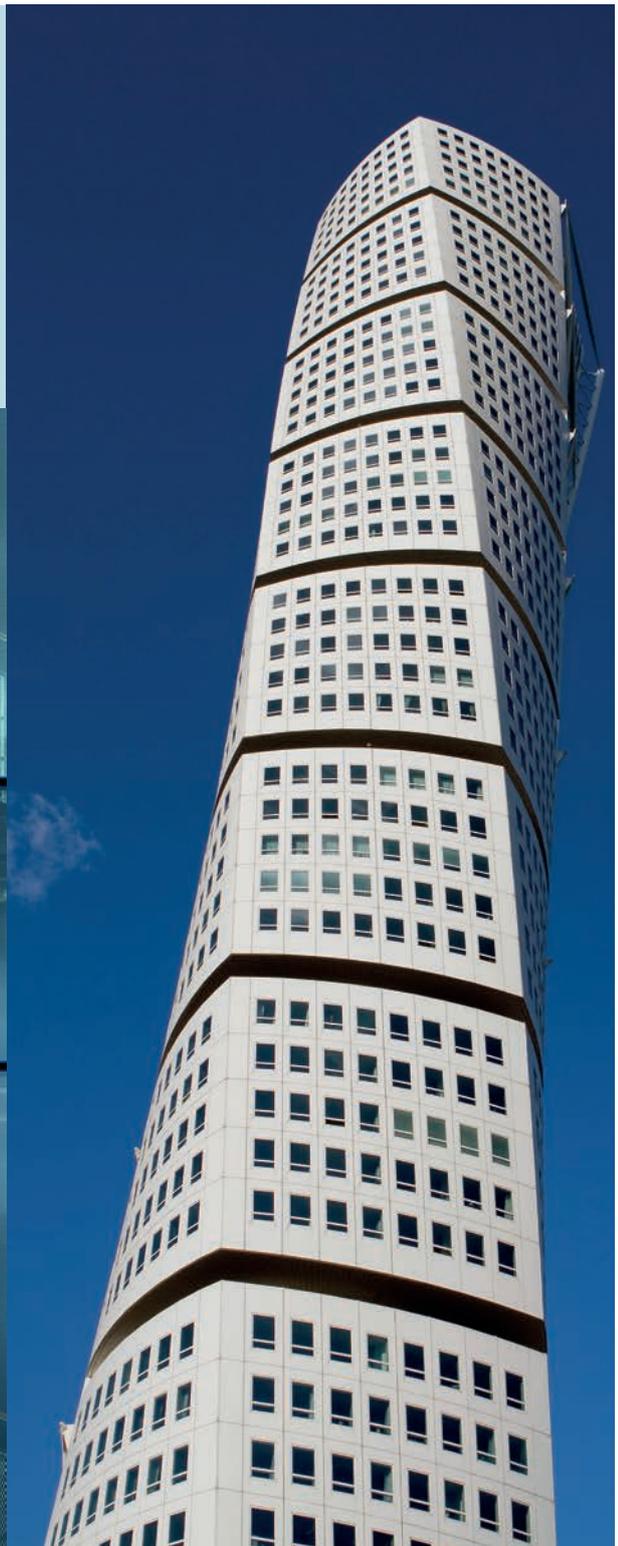
IIIIEE researchers: Kes McCormick, Yuliya Voytenko, Oksana Mont

Project period: 2014 – 2017

Budget: 1.7 million EURO

Funding body: JPI Urban Europe and Formas

Academic partners: Durham University, Erasmus University Rotterdam, Joanneum Research





BUSINESS MANAGEMENT AND PRACTICE

Textile – A Growing Sustainability Challenge

We are buying more clothes than ever before, but there is still no efficient system to close the material loop. What if we handed over responsibility of our discarded clothes to the producers – would it lead to a quality rise in our wardrobes? IIIIEE researcher Naoko Tojo has looked into textile – a growing sustainability challenge – from waste prevention point of view.

Since 2000, textile consumption in Sweden has increased by more than 40%. After some time in our wardrobes, we throw half of it away as waste, which ends up being burned in incineration plants where energy is recovered for district heating. Some 20% of what we find in our wardrobes is given away to charity on a global second hand market.

Since the 1990s, Sweden has developed a waste collection and recycling system that today is applied to many sectors. Consumer goods packages, batteries, electronic devices and cans are among the products that Swedes separate from the rest of the waste stream after consumption. A special feature of the system covering these products is that the producer of the product bears full or partial responsibility for end-of-life

management of their product.

This policy principle, making the manufacturer of the product responsible for its lifecycle aiming to close the material loop, is called the extended producer responsibility (EPR) and was named by IIIIEE researcher Thomas Lindhqvist. In addition to improve waste management systems – better collection, material recycling and environmental sound treatment of the residues – a key reason for engaging producers is to provide them with incentives to change their product design. In this way, problems at the waste phase can be minimised when products are designed.

The system has been adapted to various product types in many countries, but textiles have so far not been included at a larger

scale. In Nordic countries today, textile incineration and landfill is in one end of the scale and the textile second hand-market in the other, but in between them there is a big gap. Textile material re-use and recycling is almost not practised in the Nordic countries. Why?

“One of the reasons is the diversification of materials used in our clothing. Earlier the materials used were mostly natural fibres, such as wool and cotton, and there was a functioning and economically viable recycling system. Collectors used to go around the houses gathering old clothes for material recycling. At a recycling plant gathered textiles were separated in accordance with colours and were sold for manufacturing of new products. With the large variety of synthetic materials as well as use of mixed materials such as cotton and polyester, however, this old system disappeared”, explains Naoko Tojo.

One way of addressing the problems related to production and consumption is to tackle it as a part of waste prevention strategy. “Waste prevention can be addressed both in terms of quantity as well as of quality. For the former, reduced consumption is a fundamental strategy. Not only through consumers changing behaviour, but market actors also need to change. They can for example be led in a more sustainable direction by being encouraged or forced to offer products of better quality, thus with a longer life span,” says Naoko.

Clothes can also be shared in different ways and a growing circular economy as well as an attitude shift to consumption are assets in working towards a more sustainable consumption. Repairing, altering and mending can be encouraged in order to prolong life of many textiles. When products finally are no longer of use, the material can still be reused for various purposes. For these, new business models are needed as well as innovative government policies.

However, in order to move further, many questions still need to be answered: How should the responsibility be divided between different actors? How can we re-use material without damaging the second hand market? Can we create a market for collecting, cutting and refining textile materials in order to close the material loops? If it can be done in a sustainable way, it may be a good idea to assign the producers responsibility for collection and recycling of textile waste. Nordic governments, including Sweden, started to develop new legislation. “We hope some of our work on textile, as well as experiences gained through the research in other product areas, could contribute to the development,” states Naoko Tojo.

PREVENTION OF TEXTILE WASTE

IIIIEE researchers: Naoko Tojo and Beatrice Kogg

Project period: 2012 – 2015

Budget: 350.000 SEK

Funding body: Nordic Council of Ministers

Academic partners: Copenhagen Resource Institute (CRI), Denmark; National Consumer Research Centre (NCRC), Finland; Environice, Iceland





CONSUMPTION GOVERNANCE

Closed Loops in the Sharing City?

Sharing is caring – but is it always sustainable? The sharing economy is altering the way we look at ourselves as consumers and our idea of the market, but it also raises other questions: what role should the city take in this, and how can we ensure that the result is truly sustainable?

The sharing economy is a buzzword in the modern urban society. We all know more or less what it is about: individuals and communities sharing, borrowing, renting and passing on stuff and services, through car sharing, tool pools and clothes swaps – something that we hope will result in a resource-efficient, sustainable and modern lifestyle. Some call it a trend, but there is nothing really new in the idea of borrowing instead of owning – the history of public libraries goes back to at least 500 BC.

But, we are now seeing a rapid shift. Initiatives for the sharing economy are multiplying, especially in cities, not least due to rapid ICT development and the emergence of digital platforms and apps. Rapid urbanisation, combined with the challenges of increased consumption and waste, and growing social inequality, mean that sharing our common resources makes sense.

IIIEE researchers Yuliya Voytenko and Oksana Mont have just started a large project, “Urban Reconomy”, which will investigate the role of sharing economy organisations in cities.

“We would like to explore how sharing and collaborative production initiatives are organised in cities, which actors are driving the process, and if these initiatives do indeed contribute to closing material loops, as is often claimed,” says Yuliya Voytenko.

So, who are the driving actors? They range from enthusiasts and social entrepreneurs working on a volunteer basis to business developers who see an opportunity to profit from demand for products and services with a stronger social, economic and environmental profile.

“These groups have different interests and therefore the

outcome of their work is also very diverse. Some well-known examples include commercial platforms such as AirBnB, which offers accommodation in people's homes, and Uber, which connects drivers with passengers. Both AirBnB and Uber originate from the San Francisco area, which has many sharing economy success stories. On the other hand, we also see non-profit platforms that often operate on a small scale, but nationally, such as Skjutsgruppen in Sweden, which matches drivers and passengers, and even internationally, for example, the accommodation sharing platform BeWelcome", explains Yuliya Voytenko.

"We are very interested in the role of the city. It can facilitate sharing and collaborative consumption and production by offering meeting arenas, public spaces or financial support. The city's challenge is to ensure that sustainability issues are not left behind by the sharing initiatives. This is a key theme for my new research project "Sharing and the City", which I plan to start in a year or so", states Yuliya Voytenko.

Two local examples from Sweden are Stenkrossen in Lund and Stpln in Malmö – cultural centres hosting various creative spaces for clothes upcycling, bicycle repairing, 3D printing

and more. Here, the cities provide the base while content and activities often depend on a combination of external funding, volunteer work and user interests.

In their research, Oksana Mont and Yuliya Voytenko will visit seven European cities: Malmö, Copenhagen, Helsinki, Rotterdam, London, Barcelona and Berlin to investigate their sharing systems and their respective levels of maturity and diversity.

"We know already that these cities have different profiles when it comes to the sharing economy. In Barcelona, economic challenges drive sharing and collaborative production initiatives; in Berlin there is a strong hipster culture promoting alternative lifestyles, and London has a long history of innovation. We hope that our study will help city governments and other actors in their search to develop a sharing economy that truly supports the principles of sustainability and resource efficiency," states Yuliya.

URBAN RECONOMY: SHARING FOR CIRCULAR RESOURCE EFFICIENCY

IIIIEE researchers: Oksana Mont and Yuliya Voytenko

Project period: January 2015 – December 2018

Budget: 4.6 million SEK

Funding body: Formas

SHARING AND THE CITY

IIIIEE researchers: Yuliya Voytenko

Project period: January 2016 – December 2019

Budget: 3 million SEK

Funding body: Formas

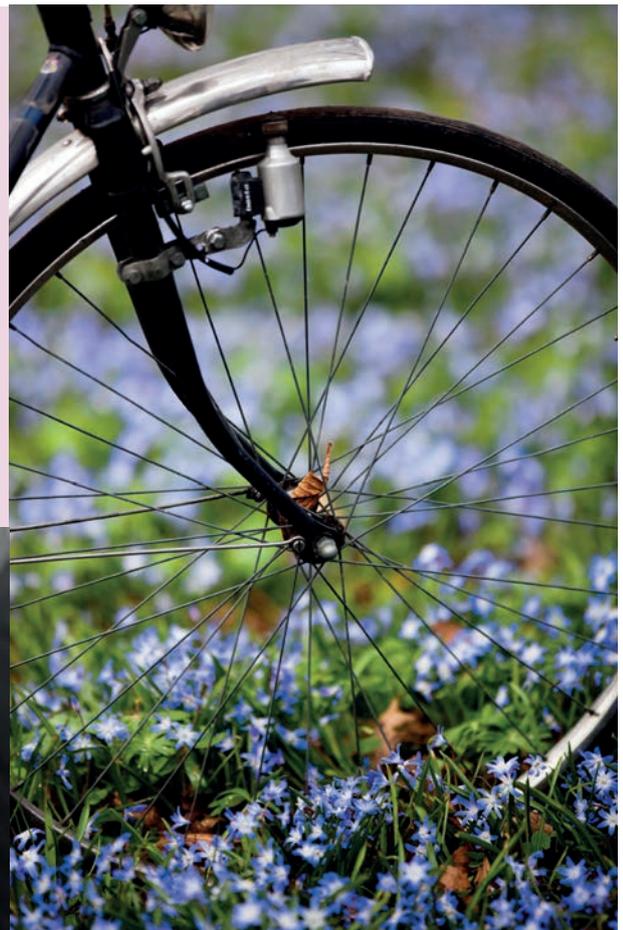




Photo: Johan Persson

Board

The IIIEE is governed by a Board appointed jointly by Lund University and the Government of Sweden. Since 2010, the IIIEE is directed by Professor Lena Neij.

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Photo: Johan Persson

Staff

The IIIEE consists of 35 staff, including 18 researchers, 10 PhD students, and 7 administration. It is highly international staff and vibrant working environment.

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Backman Mikael, Senior Research Fellow

Brorson Torbjörn, Adjunct Professor

Cherp Aleh, Professor, MESPO Consortium Coordinator

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THE IIIEE AND LUND UNIVERSITY

The International Institute for Industrial Environmental Economics (IIIIEE) is an international and interdisciplinary centre of excellence at Lund University. The IIIIEE is located in the Öresund region, one of the most dynamic regions in Europe, with the ambitions to become one of the most creative and sustainable city-regions in the world.

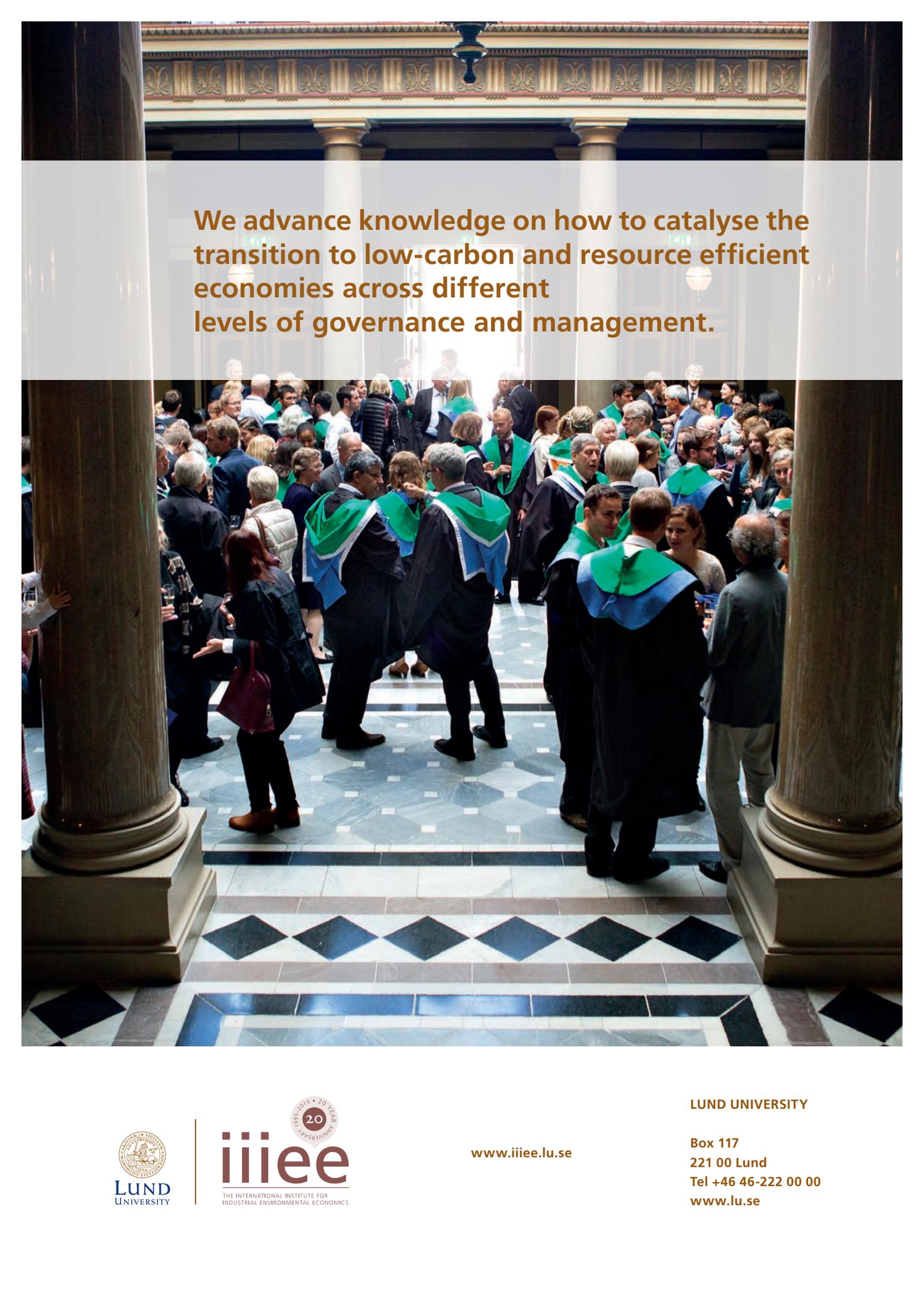
Lund University and the Öresund region provide an excellent platform for education and research to advance sustainable solutions. Lund University was founded in 1666 and for a number of years it has been ranked among the top 100 universities in the world. It has 42,000 students and more than 7,500 staff based in Lund, Helsingborg and Malmö.



THE IIIEE BUILDING AND SURROUNDINGS

The building that houses the IIIIEE was completed in 1909. It was designed by the architect Fredrik Sundbärg, and commissioned by the insurance company, Skånska Brand, to be used as their office headquarters. During the summer of 1995, as well as during 2003, the building was extensively renovated, and several rooms were restored to their original style. The building is an integral part of what makes the IIIIEE unique.

Lund calls itself the City of Ideas – a place where academia, business, culture and nature thrive within bicycle distance from each other. The spires of the Cathedral of Lund tower over a city characterized by its rich cultural and historical heritage, state-of-the-art scientific research and development, and bustling activities of a university town full with students and staff from all over the world.



We advance knowledge on how to catalyse the transition to low-carbon and resource efficient economies across different levels of governance and management.



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