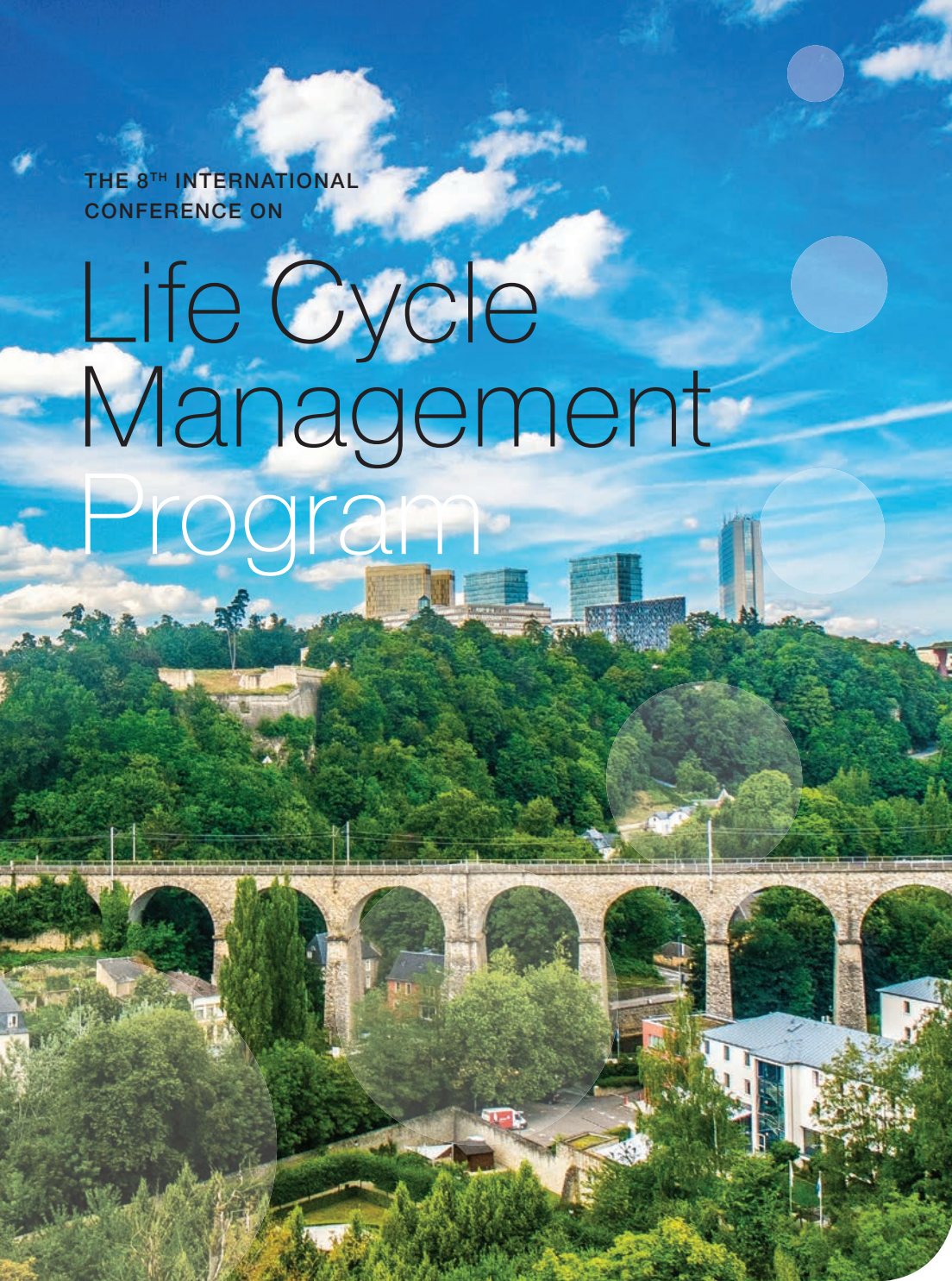


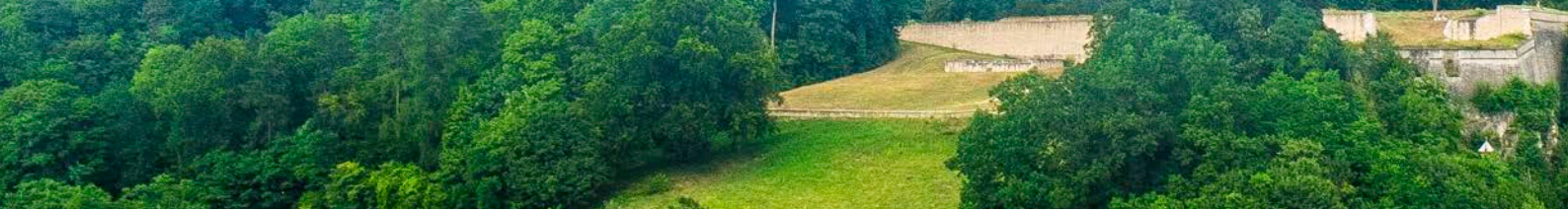
THE 8TH INTERNATIONAL
CONFERENCE ON

Life Cycle Management Program



LCM 2017

3 - 6 SEPTEMBER 2017
LUXEMBOURG, LUXEMBOURG



Welcome to LCM2017	4
Host of LCM - Organizers 2017	6
Sustainability considerations	8
Organizing Committee	9
Scientific and Business Committee	10
.....	
Themes of LCM 2017	12
Program overview	14
Map of conference venue	17
LCM Book	18
Keynote Speakers	19
Industrial Panel Moderators	26
Summer school	27
Side events	28
Sponsors	34
Financial Support	42
Exhibition area	44
About Luxembourg	46
Social events	48
Conference venue	50
Practical & Poster Information	52
Poster Session Overview	55
.....	
Monday, September 4 / Scientific program	56
Tuesday, September 5 / Scientific program	76
Wednesday, September 6 / Scientific program	98
.....	
Thank you	114
Contact	115



Welcome to LCM2017

Her Excellency Minister Dieschbourg, Distinguished Keynote Speakers,
Ladies and Gentlemen, dear Colleagues, dear Friends,

WELCOME TO THE 8TH LIFE CYCLE MANAGEMENT (LCM) CONFERENCE!

Life Cycle Management (LCM) can be considered an integrated concept and toolbox of methods and operational approaches aimed at improving the environmental, social and economic sustainability of technologies, products, services, policies and organizations from a life cycle perspective. Businesses and policy-making organizations use LCM frameworks to explicitly identify, document, inform and communicate their strategy and to chart a course from this strategy toward a more sustainable society.

The LCM conference series is the leading life cycle assessment forum worldwide, bringing together 600+ LCM scholars and practitioners from 40+ countries working in industry, academia and public institutions. LCM 2017 is the 8th time this conference has taken place, following the inaugural conference in 2001 in Copenhagen, and highly successful events in Barcelona (2005), Zurich (2007), Cape Town (2009), Berlin (2011), Gothenburg (2013) and Bordeaux (2015).

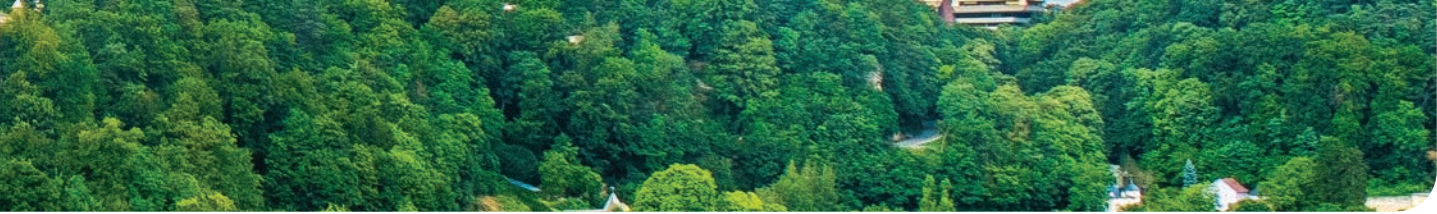
With the rise of the Circular Economy as a new paradigm for market growth, several methods and certification schemes to quantify and communicate the impacts and benefits of circular systems have emerged. The LCM toolbox can indeed provide a legitimate and scientifically founded, quantitative basis to steer and monitor the transition towards a more sustainable and healthier society. We, the LCM community, must however confront important challenges to reach this objective, in particular, in our opinion, in terms of positioning LCM on the political and business agendas, simplifying and standardizing LCM methods without oversimplifying and neglecting

complexity, ensuring efficient communication and promoting innovation based on LCM concepts and tools.

LCM2017, under the theme “Designing sustainable technologies, products and policies: from science to innovation”, has been designed to tackle these challenges and offer to the LCM community the opportunity to take LCM to the next level, to effectively contribute to the journey towards a safer and more sustainable society.

First, the program of LCM 2017 has been designed around new (smart) technologies (and related implementation sectors) which on the one hand, are likely to disrupt the LCM practice in the coming years (e.g. smart sensors making data collection much easier), and on the other hand, for which the LCM toolbox has great development potential. We have sessions on smart agricultural, smart manufacturing and smart mobility systems, including urban infrastructures and energy for the built environment, sessions specifically targeting the role of LCM for Circular Economies *and viceversa*, sessions on sectors which are historically under-represented in the LCM series (like pharmaceutical industry or textiles). New technologies such as Blockchain, Building Information Management (BIM), Nature based solutions for cities, and Complex Systems will be discussed. The focus on bridging the gap between science and innovation is also pursued in the exhibition area, where companies will showcase technologies developed using the LCM toolbox.

Second, communication (BtoB and BtoC) is historically an improvement lever for our community. The LCM toolbox is often considered by policy makers and business leaders



too difficult, complex and expensive to understand, implement and communicate. Indeed, this is certainly one of the reasons why other approaches, simpler albeit sometimes less rigorous scientifically speaking, could have a stronger impact on business than LCM.

LCM 2017 includes a number of sessions focusing on current standardization approaches, LCM guidelines and best practices as well as on the visualization and interpretation of LCM results. Where possible, we have used the discussion panel format, to facilitate the interaction between speakers and the audience and to have a multiplicity of business cases and examples from the users' side. Also, for the first time in the LCM conference series, a system to set up short bilateral business meetings (B2Fair), managed by the Luxembourg Chamber of Commerce, has been put in place to promote maximum interaction between participants and facilitate networking and business opportunities.

Finally, from our perspective, it is very important for the LCM community to bridge the gap with other scientific and business communities, pursuing similar objectives, often in a complementary way. This combination can bring higher visibility to the LCM toolbox and thus avoid the risk of being considered the result of a niche community of users and academics. With this objective in mind, we have set up an attractive program of distinguished keynote speakers, who will also bring higher media exposure. For example, ArcelorMittal will present the new solutions that steel - as "fabric of life" - is bringing for mobility. In parallel it strongly advocates the inclusion of LCA principles in update of car CO₂ emission regulation to avoid the 'unintended consequences' of a regulation only considering the use-phase. The diversity of speakers was also promoted for the "regular" scientific sessions, including 120+ oral presentations selected by the Scientific and Business Committee, which is gratefully acknowledged.

Furthermore, thanks to the involvement of the European Investment Bank, we could add a discussion panel entirely devoted to the funding of LCM and Circular Economy to the program, in particular the funding of projects and proposals focusing on applied research and innovation. This is also a new feature added to the LCM conference series, which we hope will be beneficial for the community.

On behalf of the Organizing Committee we warmly welcome you to LCM 2017 and wish you three days of unforgettable learning, exchanges and networking experience!



ENRICO BENETTO

Chair of the conference and Head of the "Life Cycle Sustainability and Risk Assessment" RDI Unit *Luxembourg Institute of Science and Technology*



KILIAN GERICKE

Co-Chair of the conference and senior researcher in the Engineering Science research Unit *University of Luxembourg*



JAN BOLLEN

Industrial Co-Chair of the conference and Manager of the environmental aspects of products *ArcelorMittal Europe, Environmental & Climate Change affairs*

Host of LCM - Organizers 2017

LUXEMBOURG
INSTITUTE OF SCIENCE
AND TECHNOLOGY



ABOUT LUXEMBOURG INSTITUTE OF SCIENCE AND TECHNOLOGY (LIST)

The Luxembourg Institute of Science and Technology (LIST) is the official organizer of the 8th International Conference on Life Cycle Management. The LIST is a mission-driven Research and Technology Organization (RTO) that develops advanced technologies and delivers innovative products and services to industry and society. As a major engine of the diversification and growth of Luxembourg's economy through innovation, LIST supports the deployment of a number of solutions to a wide range of sectors, including energy, IT, telecommunications, environment, agriculture, and advanced manufacturing at national and European level. Thanks to its location in an exceptional, collaborative environment, namely the Belval Innovation Campus, LIST accelerates time-to-market by maximizing synergies with different actors, including the University, the national funding agency and industrial clusters.

ABOUT UNIVERSITY OF LUXEMBOURG

The University of Luxembourg was founded in 2003 and is a multilingual, international research university with nearly 6200 students and members of staff from all over the world. The main focus areas for its research are computational sciences, European law, finance and educational sciences, together with interdisciplinary research at the Interdisciplinary Centre for Security, Reliability and Trust (SnT), the “Luxembourg Centre for Systems Biomedicine” (LCSB), and the Luxembourg Centre for Contemporary and Digital History.



ArcelorMittal

ABOUT ARCELORMITTAL

ArcelorMittal is the world's leading steel and mining company. Guided by a philosophy to produce safe, sustainable steel, it is the leading supplier of quality steel products in all major markets including automotive, construction, household appliances and packaging. ArcelorMittal is present in 60 countries and has an industrial footprint in 18 countries. Ensuring we adapt appropriately to environmental and social trends is an extension of the work we are doing on developing these standards. Our 10 sustainable development outcomes were designed to ensure we manage and stay ahead of expectations in this regard, and also demonstrate our understanding that long-term success lies not only in creating shareholder value but also in actively contributing to society's needs.



Sustainability considerations

EUROPEAN CONVENTION CENTER LUXEMBOURG (ECCL)

The ECCL has a strong commitment to economic, environmental and social responsibility. At ECCL, sustainable efforts are being made in various areas such as energy consumption reduction, waste reduction and separation, water consumption and the quality of infrastructures (e.g. green permeable roof surfaces allowing rainwater to be filtered and captured; FSC-certified natural wood products, etc.).

PROGRAM

This program is printed on paper that meets the standards of the sustainable forest management (FSC) label and the carbon footprint of this printed product is offset.

We decided not to include the list of posters in the printed version but rather in the downloadable PDF program book available on the LCM website.

A smartphone application is available to reduce the printing of documents. All the abstracts associated to presentations and posters are provided in the app.

CATERING

As the official caterer of the ECCL, Sodexo was the natural choice for the conference. Since 2013, it has held the “Sou schmaacht Lëtzebuerg“ label, requiring the promotion and use of local and seasonal products. In addition, Sodexo is one of the first companies in Luxembourg to obtain the “Corporate Social Responsibility - CSR” label which demonstrates its commitment to continuous improvement in terms of social responsibility (CSR). On a daily basis, Sodexo is keen to limit its environmental impact and since 2006 has worked towards the valorization of the organic waste produced in its restaurants.

Steffen traiteur, the official caterer of the conference social events, will offer local and organic food.

BUS SHUTTLE

The bus service between the ECCL and the Gala Dinner location will be ensured by Sales-Lentz using electric and hybrid vehicles.

COMMUNICATION SIGNS

A number of the signs produced for the conference will not refer to any date or organizer’s name to facilitate their re-use in future LCM conferences.



Organizing Committee

The organizational arrangements of LCM 2017 have been managed by the Organizing Committee, composed of the Conference Chairs and experts from the organizing institutions. We are most grateful to the organizations providing these experts.

CONFERENCE CHAIRS

ENRICO BENETTO

Chair of the conference and Head of the “Life Cycle Sustainability and Risk Assessment” RDI Unit
Luxembourg Institute of Science and Technology

KILIAN GERICKE

Co-Chair of the conference and senior researcher in the Engineering Science research Unit
University of Luxembourg

JAN BOLLEN

Industrial Co-Chair of the conference and Manager of the environmental aspects of products
ArcelorMittal Europe, Environmental & Climate Change affairs

LOCAL ORGANIZATION

MÉLANIE GUITON

Scientific program coordination - R&T associate
Luxembourg Institute of Science and Technology

TOMÁS NAVARRETE GUTIERREZ

Scientific program coordination - R&T associate
Luxembourg Institute of Science and Technology

CÉLINE GONCALVES

Partnership & valorization officer
Luxembourg Institute of Science and Technology

MARYLÈNE MARTIN

Event coordinator - External communication
Luxembourg Institute of Science and Technology

LUGDIVINE UNFER

Digital support - External communication
Luxembourg Institute of Science and Technology

Scientific and Business Committee

Successful Life Cycle Management is a collaborative effort across disciplines and sectorial borders, just like the organization of an LCM conference. We would like to express our gratitude to our Scientific and Business Committee, with active representation from universities, governmental organizations, institutes, non-governmental organizations and businesses alike. Their commitment and expert knowledge have been invaluable in the set-up and execution of this conference.

ENRICO BENETTO LIST (Chair)

MÉLANIE GUITON LIST (Co-chair)

GERMAIN ADELL Nobatek

CARMEN ALVARADO ASCENCIO AkzoNobel

JESSICA ANDREASSON Volvo Car Group

ANDERS ARVESEN NTNU

SIMON AUMONIER ERM

ANNE-CHRISTINE AYED Tarkett

TAMMY AYERS Steelcase

FRITZ BALKAU Sustainable solutions

JOHANNA BERLIN SP Technical Research Institute of Sweden

ANÉL BLIGNAUT South African Fruit and Wine Industry Initiative Confronting Climate Change

JAN BOLLEN ArcelorMittal Europe

ALICIA BOYANO-LARRIBA JRC European Commission

BIRGIT BRUNKLAUS SP Technical Research Institute of Sweden

MAURO CORDELLA European Commission, JRC-IPTS

QUENTIN DE HULTS BASF SE

WOUTER DE SOETE Ghent University

JO DEWULF Ghent University

JOHANNES DRIELSMA EUROMINES

NIEVES ESPINOSA JRC Sevilla

MATTHIAS FINKBEINER TU Berlin

ALBERTO FRAUSIN Carlsberg

MICHELE GALATOLA European Commission DG ENV

JULIEN GARCIA Groupe PSA

KILIAN GERICKE University of Luxembourg (Co-Chair)

MARK GOEDKOOP PRé Sustainability

TIMOTHY GRANT Life Cycles Australia

CHRISTOPH HERRMANN Technical University of Braunschweig

MASAHIKO HIRAO University of Tokyo

JENS-CHRISTIAN HOLST Siemens Corporate Technology

DIEGO IRIBARREN Instituto IMDEA Energía



KEITH JAMES WRAP

CHRISTIAN JELSE EPD International

STEPHAN KRINKE Volkswagen AG

MICHAL KULAK Unilever

LENA LANDSTRÖM Vattenfall and Swedish Life Cycle Center

JULIAN LINGS The North Face

ANTONINO MARVUGLIA LIST

ERIC MIERAS PRé Sustainability

LISA MOHR Thyssenkrupp Steel Europe AG

KEITH MOORE Sustainablelogic

STÉPHANE MOREL Renault

CHRISTOPHER MUTEL Paul Scherrer Institute

TOMÁS NAVARRETE GUTIÉRREZ LIST

PHILIPPE OSSET SCORELCA, Solinnen

SARA PALANDER Swedish Life Cycle Center and Chalmers University of Technology

KRISTOF PEERENS 3M

NICOLAS PERRY ENSAM – I2M

DANIELA PIGOSSO Technical University of Denmark

VALENTINA PRADO Leiden University

FRANCESCO RAZZA Novamont

ELLEN RIISE SCA Hygien products

RALPH ROSENBAUM ELSA-PACT, IRSTEA

BENEDETTO RUGANI LIST

SERENELLA SALA European Commission – Joint Research Centre

PETER SALING BASF

GUIDO SONNEMANN University of Bordeaux

MATTHIAS STUCKI Zurich University of Applied Sciences

MARZIA TRAVERSO RWTH Aachen, Germany

KARIN TREYER Paul Scherrer Institute

MAXIME TROCMÉ Vinci Construction

ROBERTO TURCONI ArcelorMittal

NICOLE UNGER University of Natural Resources and Life Sciences, Vienna (BOKU)

MARCIAL VARGAS-GONZALEZ Quantis International

IAN VAZQUEZ-ROWE Pontificia Universidad Católica del Perú

ANNE VENTURA University of Nantes

JEAN-FRANÇOIS VIOT Solvay

ALAIN WATHELET Solvay

SHIRIN WHEELER European Investment Bank

OLIVER WOLF European Commission, JRC-IPTS

SÉBASTIEN ZINCK LIST

Themes of LCM 2017

The LCM 2017 conference aims to demonstrate the implementation of Life Cycle approaches along businesses' value chains, thereby offering the LCM community a platform to discuss and bring the LCM toolbox to the next level of implementation in the journey towards a safer and more sustainable society. A call for session proposals was launched in 2016 and up to 50 abstract proposals per session have been received. The final conference program has been designed around several mainstream topics which are currently on the business and policy agenda: the implementation and assessment of Circular Economy

LCM, CIRCULAR ECONOMY AND PRODUCT VALUE CHAIN

- _ Discussion panel - LCM approaches to support Circular Economy
- _ Best practices for Sustainable Design: integrating LCM into the innovation processes
- _ Raw materials supply chains in the light of the circular economy
- _ Bio-based materials within the circular economy: opportunities and challenges?
- _ LCM and Circular Economy Challenges for the textile sector
- _ Using LCM to create shared value through healthcare and pharmaceutical supply chains
- _ Improving the life cycle performance of chemical products and materials through data exchange along the value chain
- _ Greening agri-food value chains in emerging economies
- _ Food waste management (sector) in a circular economy
- _ Implementation and management of life cycle approaches in business – Challenges, opportunities, business learnings and best practice

INNOVATION FOR SUSTAINABLE PRODUCTION AND URBAN SYSTEMS

- _ LCM for transport and mobility
- _ Modelling mobility systems today and in the future
- _ Management of construction waste: LCA and complex system modeling
- _ Environmental assessment of energy related products and energy systems across their life cycle
- _ Life Cycle Management of Energy and Energy Transitions – Managing the complexity of today's and future energy systems with a life cycle focus: Challenges and methodological solutions
- _ LCM at the urban scale: BIM and Nature Based solutions
- _ Role of Carbon Capture and Use (CCU) on Climate Mitigation



along the value chain, the development and management of smart agricultural, smart manufacturing and smart mobility systems, including urban infrastructures and energy for the built environment. We have clustered the main topics into four themes calling the LCM community to action from different perspectives. The 35 sessions are distributed over the three days of the conference in order to minimize possible overlaps (in terms of interest) among parallel sessions for the participants.

DEVELOPMENT OF LCM METHODS AND TOOLS

- _ Which toxicity question can be addressed in LCM? Latest method developments and experience
- _ I have a dream: Open Marketplace for Life Cycle approaches!
- _ Potentials and limitations of combined life cycle approaches and multi-dimensional assessment
- _ Improving interpretation, presentation and visualization of LCA studies for decision making support
- _ Design of Complex Systems, Products and Services with Users integration into design
- _ Best practices for Sustainable Design: integrating LCM into the innovation processes
- _ Discussion panel - Assessment of Externalities: Monetisation and social LCA
- _ Trends in life cycle thinking in regional development: methodological advances and challenges for the future
- _ Reducing the environmental impact of healthcare: A training workshop on calculating the GHG emissions of pharmaceuticals and medical devices
- _ Integrating the concept of Planetary Boundaries into decision making processes

HOW TO DEVELOP AND SUSTAIN LCM-BASED INNOVATIONS

- _ Financing Innovation and Circular Economy
- _ Discussion panel - The role of LCA and LCM networks
- _ Life Cycle Approaches to Sustainable Regional Development
- _ Integration is key – how to create business value from LCA and an integrated sustainability approach?
- _ Turning the lens around: LCA Success Stories “outside-in”
- _ Sustainability of bio-based products: linking Life Cycle Thinking with standards, certification and labelling schemes
- _ Using LCA and EPD in Public Procurement within the construction sector
- _ Special session on Product Environmental Footprint

Program overview

SUNDAY 3RD SEPTEMBER

06.00 pm - 08.00 pm ICE BREAKER AND REGISTRATION OF PARTICIPANTS - EUROPEAN CONVENTION CENTRE

MONDAY 4TH SEPTEMBER

	SALLE DE CONFÉRENCES 1*	SALLE DE CONFÉRENCES 2	SALLE DE CONFÉRENCES DE PRESSE	SALLE D	SALLE E
08.00 am and all day	Registration of participants				
09.00 am - 10.30 am	OPENING CEREMONY				
10.30 am - 11.00 am	COFFEE BREAK AND POSTER SESSION				
11.00 am - 12.00 pm	PLENARY SESSION - KEYNOTES SPEECHES				
12.00 pm - 02.00 pm	LUNCH AND POSTER SESSION				
02.00 pm - 03.30 pm	LCM for transport and mobility - Starting at 1.15 pm	Life Cycle Management of Energy and Energy Transitions - Managing the complexity of todays and future energy systems with a life cycle focus: Challenges and methodological solutions	Using LCA and EPD in Public Procurement	Role of Carbon Capture and Use (CCU) on Climate Mitigation	LCM at the urban scale: BIM and Nature Based solutions
03.30 pm - 04.00 pm	COFFEE BREAK AND POSTER SESSION				
04.00 pm - 05.30 pm	Modelling mobility systems today and in the future	Environmental assessment of energy related products and energy systems across their life cycle	Special session on Product Environmental Footprint	Management of construction waste: LCA and complex system modeling	Potentials and limitations of combined life cycle approaches and multi-dimensional assessment
	RECEPTION COCKTAIL AT CERCLE CITÉ INCLUDING POSTER CHALLENGE AWARDS FOR MONDAY 4 TH SEPTEMBER				

* Opening ceremony, Plenary sessions and Closing Ceremony will take place in the "Salle de Conférences 1"



TUESDAY 5TH SEPTEMBER

	SALLE DE CONFÉRENCES 1*	SALLE DE CONFÉRENCES 2	SALLE DE CONFÉRENCES DE PRESSE	SALLE D	SALLE E
08.30 am - 10.00 am	PLENARY SESSION - KEYNOTES SPEECHES				
10.00 am - 10.30 am	COFFEE BREAK AND POSTER SESSION				
10.30 am - 12.00 pm	Raw materials supply chains in the light of the circular economy	Sustainability of bio-based products: linking Life Cycle Thinking with standards, certification and labelling schemes	Implementation and management of life cycle approaches in business – Challenges, opportunities, business learnings and best practice	Using LCM to create shared value through healthcare and pharmaceutical supply chains	LCM and Circular Economy Challenges for the textile sector
12.00 pm - 02.00 pm	LUNCH AND POSTER SESSION				
02.00 pm - 03.30 pm	Best practices for Sustainable Design: integrating LCM into the innovation processes - Starting at 1.15 pm	Bio-based materials within the circular economy: opportunities and challenges?	<i>Discussion panel</i> - The role of LCA and LCM networks	<i>Workshop</i> - Reducing the environmental impact of healthcare: a training workshop on calculating the GHG emissions of pharmaceuticals and medical devices	Which toxicity question can be addressed in LCM? Latest method developments and experience
03.30 pm - 04.00 pm	COFFEE BREAK AND POSTER SESSION				
04.00 pm - 05.30 pm	<i>Discussion panel</i> - LCM approaches to support Circular Economy	Sustainable Design of Complex Systems, Products and Services with Users integration into design	Improving interpretation, presentation and visualisation of LCA studies for decision making support	<i>Discussion panel</i> - Integration is key – how to create business value from LCA and an integrated sustainability approach	Improving the life cycle performance of chemical products and materials through data exchange along the value chain
	GALA DINNER AT THE ROCKHAL INCLUDING POSTER CHALLENGE AWARDS FOR TUESDAY 5 TH SEPTEMBER				

* Opening ceremony, Plenary sessions and Closing Ceremony will take place in the "Salle de Conférences 1"

Program overview

WEDNESDAY 6TH SEPTEMBER

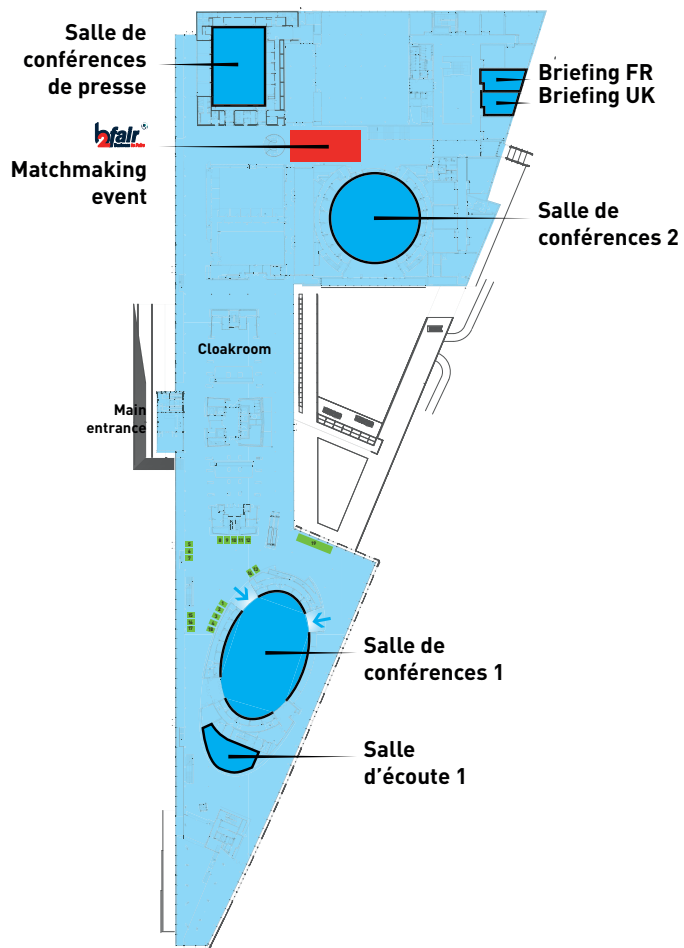
	SALLE DE CONFÉRENCES 1*	SALLE DE CONFÉRENCES 2	SALLE DE CONFÉRENCES DE PRESSE	SALLE D	SALLE E
09.00 am - 10.00 am	PLENARY SESSION - KEYNOTES SPEECHES				
10.00 am - 10.30 am	COFFEE BREAK AND POSTER SESSION				
10.30 am - 12.00 pm	Integrating the concept of Planetary Boundaries into decision making processes	Turning the lens around: LCA Success Stories "outside-in"	Financing innovation and circular economy	Greening agri-food value chains in emerging economies	Trends in life cycle thinking in regional development: methodological advances and challenges for the future
12.00 pm - 02.00 pm	LUNCH AND POSTER SESSION				
02.00 pm - 03.30 pm	<i>Discussion panel</i> - Assessment of externalities: Monetisation and social LCA	From Phd to Apps!	I have a dream: Open Marketplace for Life Cycle approaches!	Food waste management (sector) in a circular economy	Life Cycle Approaches to Sustainable Regional development
03.40 pm - 04.30 pm	CLOSING CEREMONY - INCLUDING "FROM PHD TO APPS" AWARDS AND POSTER CHALLENGE AWARDS FOR WEDNESDAY 6 TH SEPTEMBER				

* Opening ceremony, Plenary sessions and Closing Ceremony will take place in the "Salle de Conférences 1"

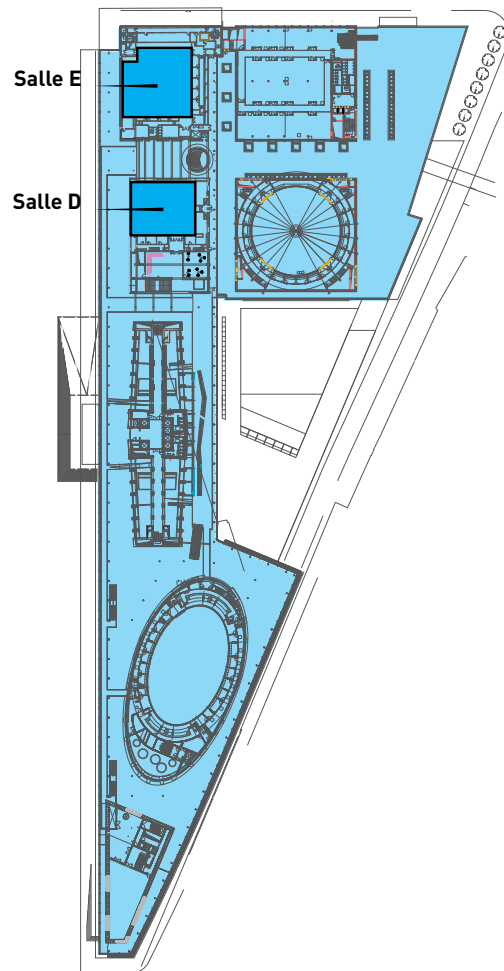
Map of conference venue



GROUND FLOOR



1ST FLOOR





springer.com

Enrico Benetto
Kilian Gericke *Editors*

Designing Sustainable Technologies, Products and Policies

From Science to Innovation



E. BENETTO, K. GERICKE (EDS)

This book provides insight into the implementation of Life Cycle approaches along the entire business value chain, supporting environmental, social and economic sustainability related to the development of industrial technologies, products, services and policies; and the development and management of smart agricultural systems, smart mobility systems, urban infrastructures and energy for the built environment.

The book is based on papers presented at the 8th International Life Cycle Management Conference that took place from September 3-6, 2017 in Luxembourg, and which was organized by the Luxembourg Institute of Science and Technology (LIST) in collaboration with the University of Luxembourg and ArcelorMittal, in the framework of the LCM Conference Series.

The book will be available Open Access by beginning of 2018.

All conference participants will be notified once it is released.

ISBN: 978-3-319-66980-9

www.springer.com

Keynote Speakers



CAROLE DIESCHBOURG

Minister for the Environment of Luxembourg

Following secondary school studies at the Lycée classique d'Echternach from 1990 to 1997, Carole Dieschbourg pursued higher education studies in historical sciences as well as German language and literature at the University of Trier from 1997 to 2005, where she was awarded a Master of Arts in 2005.

Following the legislative elections of 20 October 2013, Carole Dieschbourg joined the government as Minister for the Environment on 4 December 2013 in the coalition government formed by the Democratic Party (DP), the Luxembourg Socialist Workers' Party (LSAP) and the Green Party ("d'ei gréng").

At local level, Carole Dieschbourg served as a municipal councillor in Echternach from 2011 to 2013, an office she held until her appointment to the government.

Within the program "Leader+ Müllerthal", Carole Dieschbourg was the project coordinator for "Moulins – inventaire, excursion et sentier régional" ("Mills – inventory, excursion and regional trail") and "Millebuch" ("Book on mills") from 2005 to 2006. In 2007, she published the book *Die Mühlen des Müllerthals*.

Carole Dieschbourg was a board member of Moulin J.P. Dieschbourg, the family mill business established in 1897, until her appointment to the government in December 2013.

Keynote Speakers



BRIAN ARANHA

Executive Vice-President, ArcelorMittal

Brian joined Dofasco in 1979 as a member of the company's Research and Development Department. In 1989, he was assigned to the American Iron & Steel Institute (AIS) in Washington, D.C. and in 1991, he was part of a Canadian consortium conducting a study for the World Bank on restructuring the Polish steel industry. In 1992, Brian returned to Dofasco where he held various positions in Supply Chain, Quality, Technology and Commercial until 2003 when he was named Vice President – Commercial. Brian took up additional responsibilities as Vice President, NAFTA automotive after the integration into ArcelorMittal in 2007. He moved to Europe as CMO and head of Global Automotive in 2009 followed by other assignments in the NAFTA region in 2012.

Currently based in Luxembourg, Brian has responsibility for Global Automotive, R&D, Strategy Commercial Coordination and Automotive Joint Ventures in India and China.

Brian holds a Bachelor of Applied Science degree from the University of Toronto, Canada. In addition, he has completed the Executive Development Program at Queen's University, School of Business, Canada.



BERTRAND PICCARD

President of World Alliance for Efficient Solutions – SolarImpulse

With his twofold identity as a medical doctor and explorer, Bertrand Piccard has become an influential voice among the most distinguished institutions across the globe as a forward-thinking leader in progress and sustainability. As an independent actor, not affiliated to a particular party or lobbying group, he is a trusted adviser and influencer for the development of new societal solutions, and a very sought-after speaker for private and public audiences.

It is in Bertrand's DNA to go beyond the obvious and achieve the impossible, as he did when circumnavigating the globe non-stop in a balloon and crossing the Atlantic in a solar airplane. But, rather than new territories, he wants to discover new ways of thinking and doing, in particular in the field of clean technologies, for a better quality of life. Bertrand is the initiator and visionary behind Solar Impulse, the very first airplane capable of flying perpetually without fuel. Taking turns at the controls with André Borschberg for the first flight around the world on solar power, his ambition is to leverage pioneering spirit as a useful contribution to the cause of renewable energies. This is why he has spent the last 15 years bringing together major partners to provide technology and funds for this adventure.

In the wake of the first ever solar flight around the world, the Solar Impulse Foundation is launching the World Alliance for Efficient Solutions – a second phase in the realization of Bertrand Piccard's vision that clean technologies can accomplish impossible goals and offer tangible solutions to solve many of the challenges facing global society today.

The World Alliance for Efficient Solutions brings together start-ups, companies, institutions and organizations producing, implementing or supporting the use of clean technologies. Together, members share experiences and create synergies in order to improve the overall value chain and demonstrate concrete solutions to support governments, corporations and institutions in reaching their environmental and health targets, and advising them depending on their specific situation.

Keynote Speakers



HENK-JAN UDDING

Innovation Director - DSM Coating Resins

Henk-Jan Udding is Innovation Director at DSM Resins & Functional Materials, one of the 6 business groups of Royal DSM.

Henk-Jan is an international manager experienced (>10 years) in the development and management of new businesses in a variety of industries.

He has a proven track record in various markets, e.g. specialty resins, coatings, adhesives, carpets, and oilfield chemicals.

In 1994, Henk-Jan Udding joined Royal DSM. He held several Research & Development and Marketing & Sales roles within DSM Composite Resins, followed by general management experience at DSM Corporate implementing enterprise risk management with three DSM global business groups. After holding the position of Marketing & Sales Platform Manager of DSM Coating Resins for Adjacent Markets, he joined the start-up JV DSM-Niaga in 2014 as NBD & Innovation Manager and next Innovation Director.

In June 2016, Henk-Jan moved to the new Novel Applications Platform of DSM Resins & Functional Materials. His ambition is new business development and to co-create sustainable products with value chain partners for a circular economy.

Henk-Jan Udding (Dutch nationality) studied Chemistry at the University of Amsterdam, Netherlands (PhD).



JAN POULSEN

CEO – thinkstep AG

Jan Poulsen is the CEO of thinkstep AG, a market leader in sustainability software, data and consultancy services. Throughout his career he has worked with different organizations and industry sectors across geographies to help companies succeed sustainably. Jan has taken the journey from an operational sustainability consultant involved in Life Cycle Assessment and other sustainability-related projects to a business leader inspiring employees and other stakeholders to make a change for a better world while delivering business value.



STEFAN HAVER

Head of the Corporate Responsibility division at the Essen-based specialty chemicals - Evonik Industries AG

Stefan Haver is head of the Corporate Responsibility Division at the Essen-based specialty chemicals company Evonik Industries AG. After joining Evonik, he was initially responsible for the Internal Communications & Group Media department, and later for the Corporate Communications & Board Office division. During this time, he supported the integration of Degussa AG into the former RAG Aktiengesellschaft as well as the realignment and IPO of the resulting Evonik Industries AG.

Earlier on, he trained as a bank clerk and studied Communications Science.

Haver worked for the Düsseldorf-based communications consultancy Deekeling Identity & Change for six years, where he acted as consultant to various companies in the communication of complex change processes.

Keynote Speakers



JOERG WALDEN

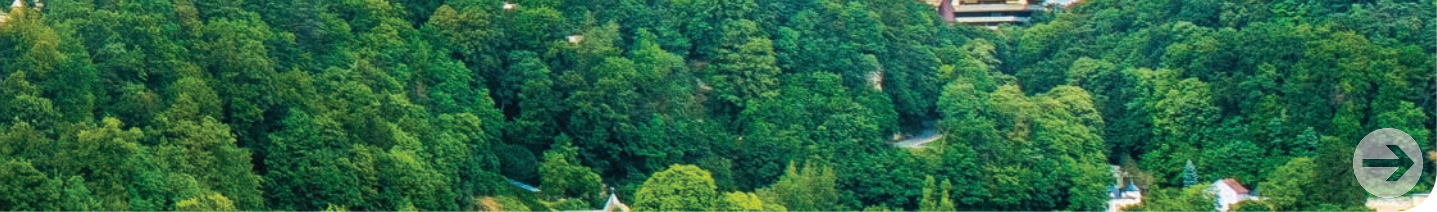
CEO – iPoint-systems

Joerg Walden is Chief Executive Officer and Co-founder of iPoint-systems, a leading provider of software and consulting for sustainable products, value chains, and brands. He draws on nearly 30 years of technology industry leadership, software development expertise, and executive management experience. At iPoint, Joerg is responsible for the business strategy, product strategy, and innovation management. Since its founding in 2001 as a small automotive-focused company, he has transformed iPoint into a multinational, globally operating market leader with a clientele of tens of thousands of companies from various industry sectors.

Joerg places great value upon an open, continuous culture of innovation, a high degree of customer focus, a global partner network, and the monitoring of relevant standards and trends in order to provide solutions that are always one step ahead. He is driven by the vision of how today's solutions can contribute to securing a sustainable world for future generations.

Joerg's commitment is frequently recognized and honoured, including his designation as Gartner Cool Vendor in Green IT and Sustainability (2012), the Verdantix Smart Innovators Badge for Product Stewardship Solutions (2015), the TOP Innovator of the Year award (2016), the recognition as one of Germany's 100 top innovators and visionaries by the leading German business newspaper Handelsblatt (2017), and the Verdantix EH&S Innovation Award (2017).

Joerg holds a Civil Engineering degree in automation from Reutlingen University.



URS SCHENKER

Sustainability and Novel Packaging – Nestlé

Urs Schenker is a sustainability expert at the Nestlé Research Center in Lausanne, in a team that is responsible for Sustainability and Novel Packaging. He is driving the use of Life Cycle Assessment and ecodesign at Nestlé, and is developing and implementing simplified tools and processes for sustainability evaluations in agriculture, processing, with consumers, and at food system level. He works with international sustainability initiatives such as the Life Cycle Initiative, WBCSD, and the EU Food Sustainable Consumption and Production Roundtable and the 10 Year Framework Program on Sustainable Food Systems.



MATHIS WACKERNAGEL

CEO - Global Footprint Network

Mathis Wackernagel, PhD is the co-creator of the Ecological Footprint and CEO of Global Footprint Network. Since 2003, this international think-tank has engaged with more than 50 nations, 30 cities, and 70 global partners to deliver scientific insights that have driven high-impact policy and investment decisions. Together with its partners, Global Footprint Network focuses on bringing about a sustainable human economy in which all can thrive on our one planet. Mathis' awards include the 2015 IAIA Global Environment Award, the 2012 Blue Planet Prize, the 2012 Binding-Prize for Nature Conservation, the 2012 Kenneth E. Boulding Memorial Award, the 2011 Zayed International Prize for the Environment, an honorary doctorate from the University of Berne, and a Skoll Award for Social Entrepreneurship.

Industrial Panel Moderators



CAROLE DUBOIS

Senior Sustainability Consultant - Quantis

Carole is passionate about making metrics and complex data accessible and valuable to businesses. She collaborates with managers and teams seeking to embed sustainability in their strategy by creating added value out of environmental data for organizations in the long term. She has been the project lead in hundreds of environmental projects, strategic developments, scientific articles and publications as well as sustainability communications initiatives. Carole continues to work extensively with leading worldwide multinational companies in the agro-food and consumer goods sectors.



PETER SALING

Director Sustainability Methods – BASF

Peter Saling is currently Director Sustainability methods at BASF. Peter studied chemistry at the University of Göttingen. After the PhD Thesis in 1993, he joined BASF. He worked in the research department for dyestuffs and was specialist for toxicological question of dyestuffs. In 1997 he changed within BASF to the division of environment, health and safety. He started there with the development of the Eco-Efficiency Analysis together with the German Consultant Roland Berger and Partners. He was as senior scientist involved in the process of implementation of more than 60 studies of Eco-Efficiency. He was project leader for the development and integration of social aspects into the sustainability analysis named SEEBALANCE. From 2007 to 2013 he was the Director of Eco-Efficiency Analysis and of Sustainability Evaluation within Sustainability Strategy department of BASF. In 2011 he finalized the development of the new AgBalance methodology. Since 2014 he is responsible as Director for the Sustainability methods of BASF worldwide with centers in USA, Brazil and Asia. In 2014 he received a lectureship at the Environmental Management and Accounting department of the Technical University of Dresden and is member of the board of the PRISMA center in Dresden. Since 2017 he is Chairman of the ISO-Committee TC207/SC5 Environmental Management – Life Cycle Assessment.”

Summer school

SIXTH INTERNATIONAL SUMMER SCHOOL ON “LIFE CYCLE APPROACHES FOR SUSTAINABLE REGIONAL DEVELOPMENT - LIFE CYCLE TOOLBOX FOR REGIONS”

1 - 3 SEPTEMBER

This summer school is an opportunity for professionals and regional managers to become more familiar with how to extend traditional life cycle tools into new application areas using a sustainable development approach. The objective is to encourage a wider use of LCA by influential social partners who have not so far employed these techniques extensively. The 2017 edition of the summer school will explore topics such as LCA approaches that address broader sustainability issues, mapping regional material flows, agent-based LCA for mobility, and life cycle techniques for landscape and land-use, as well as the Circular Economy and building an LCM toolbox for SMEs. These instruments will also be examined in terms of their role in strengthening regional programs in a Circular Economy and in building a bio-economy. The summer school uses an interactive program structure based on lectures, workshops, cases studies and role plays to explore the key issues.

The summer school draws on a recent book, “Life cycle approaches to sustainable regional development (2017)”. A number of the summer school lecturers are authors of important chapters in this publication. FSLCI is closely associated with the summer school through its Education Committee.



Forum for Sustainability
through Life Cycle Innovation

université
de **BORDEAUX**



**UNIVERSITÀ
DEL SALENTO**



DSE

DIPARTIMENTO DI SCIENZE DELL'ECONOMIA

Side events

SUNDAY 3 SEPTEMBER

01.00 pm - 05.00 pm

**Room: Novotel Luxembourg Kirchberg,
6, rue du Fort Niedergrünwald,
Room 'Ermesinde'**

ECOINVENT USER MEETING



Find out more about ecoinvent's new version, 3.4. The open discussion aims to provide a better understanding and share experiences with the ecoinvent team and other users.

We are scheduling the meeting to make sure that all participants will be on time at the LCM Welcome reception starting at 6.00 p.m. The ecoinvent team is looking forward to meeting you!

MONDAY 4 SEPTEMBER

02.00 - 03.30 pm and 04.00 - 05.30 pm

Room: Salle d'écoute 1

WORKSHOP - MATURING ABILITIES TO EMBRACE THE CIRCULAR ECONOMY

The Circular Economy is increasingly recognized by manufacturing companies and governments alike as a promising approach to maximizing value by increasing resource productivity, minimizing resource consumption and decreasing waste. Accelerating the transition to a Circular Economy is key to enable companies to grasp the related business and sustainability benefits (incl. enhanced competitiveness, growth and job creation).

This hands-on workshop will focus on how manufacturing companies can accelerate their transition to a Circular Economy by advancing the maturity of sustainability integration into their core business and product innovation processes. During the workshop, you will have the opportunity to perform a diagnosis of key company business practices and understand how to systematically develop and deploy a clear vision and roadmap for reaching your strategic drivers. Exercises will include diagnosis, vision and a roadmap for enhanced sustainability, in a Circular Economy context.



The workshop is targeted at ecodesign/LCA/ sustainability managers at manufacturing companies, and will be based on a proven approach that is currently being applied by a large set of manufacturing companies (incl. Steelcase, Philips, Coloplast, etc.).

Daniela Pigosso, *Senior Researcher at DTU and co-founder at essensus*

Adrian Tan, *Senior Business Developer at essensus*

04.00 pm - 05.30 pm

Room: Briefing Room UK

SIMAPRO AND LCA – FROM BUSINESS APPLICATIONS TO ADVANCED FEATURES



Pré Sustainability

Driven by its mission and vision of facilitating fact-based sustainable development, Pré Sustainability has been involved in interesting projects, from applied biodiversity for the banking sector, to PEF, to toxicity impacts for labelling in the food sector, to the circular economy and LCA, to social footprinting.

As developers of SimaPro, all of its efforts are focused on helping you create value from LCA. Pré Sustainability will be sharing its experiences with its customers and community at its booth and during a side session especially organized for this purpose.

Ruba Fanous and Laura Golsteijn will be dedicating 90 minutes to answer your questions, discuss your cases, show existing and new SimaPro features, or just to share a drink with you. So, you are very welcome to walk in our side room and meet us any time from 4.00 - 5.30 p.m.!

Ruba Fanous, *Pré Sustainability*

Laura Golsteijn, *Pré Sustainability*

05.30 pm - 07.00 pm

Room: Salle d'écoute 1

FSLCI GENERAL ASSEMBLY



Philip Strothmann, *FSLCI*

Side events

TUESDAY 5 SEPTEMBER

10.30 am - 12.00 pm

Room: Salle d'écoute 1

RAPID ASSESSMENT OF CHEMICAL RISKS AND LIFE-CYCLE IMPACTS

Everyday about 15,000 chemicals are newly registered to the Chemical Abstract Service (CAS). As technologies rapidly advance, so should the approaches to addressing the environmental and human health risks of chemicals.

Under the multi-disciplinary Chemical Life-Cycle Collaborative (CLiCC; clicc.ucsb.edu) project, we created a partnership between industry, academia, and the government to develop a suite of open-access tools to rapidly evaluate chemicals by providing three different outputs: their life-cycle environmental impacts, their risks, and their potential for safer alternatives.

The workshop will 1) showcase the capabilities of the novel tools developed in the CLiCC project, 2) provide a hands-on experience to practitioners, regulators, risk assessors, and scientists on the capabilities of the tools, 3) discuss potential improvements for the CLiCC tools, and 4) debate on the potential of the industrial ecology community to develop and support rapid assessment tools and data for the assessment of novel technologies.

Industrial ecology researchers and, risk assessors, chemical engineers, scientists at regulatory bodies, industry experts from the chemical sector are welcome.

Sangwon Suh, *Bren School of Environmental Science & Management, University of California, Santa Barbara*

Other members of the CLiCC project research team (clicc.ucsb.edu).

12.00 pm - 02.00 pm

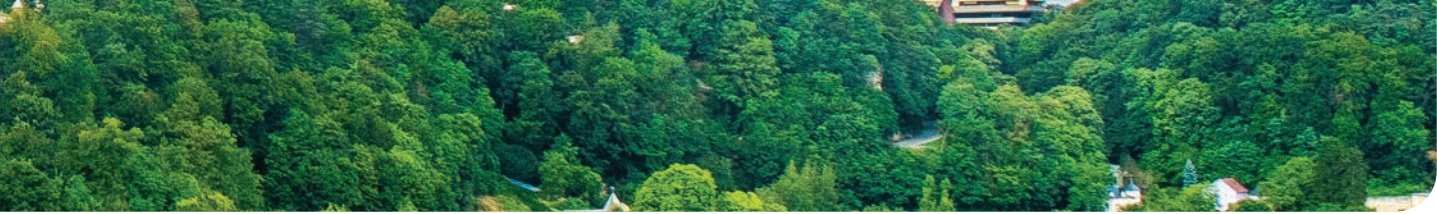
Room: Foyer salon délégués

CIRAIG'S NETWORKING LUNCH - MAKING LCA A LEVER OF SUSTAINABLE DIFFERENTIATION



Contact : sfallaha@polymtl.ca

manuele.margni@polymtl.ca



02.30 pm - 05.00 pm

Room: Salle d'écoute 1

LUXEMBOURG
INSTITUTE OF SCIENCE
AND TECHNOLOGY



NATIONAL AGENCY
FOR INNOVATION AND RESEARCH
LUXINNOVATION



THE GOVERNMENT
OF THE GRAND DUCHY OF LUXEMBOURG
Ministry of Sustainable Development
and Infrastructure

BETRIBER & EMWELT CONFERENCE: EMAS AND EU ECOLABEL

Innovative tools and instruments for environmental management and product design & evaluation

This thematic workshop will be held in French and English and is dedicated to companies from Luxembourg and the Greater Region. It is organized alongside the LCM2017 conference in order to foster the participation of regional industrial representatives to the international conference.

Representatives from the European Commission will share insights into the Environmental Management System for organizations (EMAS) and the EU Ecolabel for product design and evaluation and, most importantly, clarify differences between EMAS and other existing schemes such as the ISO 14001 standard. Speakers from EMAS-certified companies will share experience of the transition towards EMAS. Luxinnovation will give an overview on existing funding possibilities.

Laurène Chochois, *R&T Associate, Luxembourg
Institute of Science and Technology*

Side events

WEDNESDAY 6 SEPTEMBER

10.30 am - 12.00 pm

Room: Salle d'Ecoute 1

HANDS ON! LIVE DEMO OF LIST ENVIRONMENTAL ASSESSMENT TOOLS



Interested in discovering the LIST's assessment tools stemming from actual scientific developments? Then join us at our demonstration event on Wednesday 6th at 10.30 am in room "Salle d'écoute 1" !

Members of the LIST Life Cycle Sustainability and Risk Assessment Unit will show their most recent computational developments through various case studies. Strength and current shortcomings will be highlighted and prospective developments to fully operational software will be presented. A dynamic exchange with LCM participants should foster potential opportunities for future collaborations.

So don't hesitate to come by, make your opinion about our developments, and maybe even have a go at our tools!

For more information, please contact **Thomas Gibon**
thomas.gibon@list.lu

01.00 pm - 02.00 pm

Room: Briefing Room FR

FSLCI INDUSTRY MEETING



Philip Strothmann, *FSLCI*

02.00 - 03.30 pm

Room: Salle d'Ecoute 1



INTEGRATION OF ENERGY SCENARIOS INTO LCA

A large variety of models exist to build projections about the future of energy systems. Scenarios provided by these tools can be integrated into LCA databases to build LCA models that are more representative of future situations. The realization of a practical connection between these two elements can be challenging and time-consuming. With the development of new LCA tools, there is an opportunity to build a common open framework to achieve this link more systematically. The workshop aims to state what has already been done, and the overlaps and



complementary features between the existing projects. It also aims to identify the current issues and challenges and to establish a roadmap to create an open framework. Thomas Gibon (LIST) will present a methodological framework developed to assess the environmental consequences of a future energy scenario, THEMIS. Laurent Vandepaer (University of Sherbrooke) will present his recent work on the update of electricity mixes in the consequential version of ecoinvent to incorporate energy scenarios from several sources.

Participants will also be asked to introduce their work in relation to the topic. The workshop welcomes researchers and LCA practitioners working or interested in the integration of energy scenarios in LCA databases, large-scale LCA studies for policy support, and energy systems in general.

To register, please contact
laurent.vandepaer@usherbrooke.ca or
thomas.gibon@list.lu

Laurent Vandepaer, *Ph.D. student, LIRIDE – Université de Sherbrooke, Visiting researcher, Laboratory for Energy Systems Analysis - Paul Scherrer Institute.*

Thomas Gibon, *R&T Associate – Luxembourg Institute of Science & Technology*

04.30 pm - 06.30 pm

Rooms: Briefing Room FR - Salle d'écoute 1 - Briefing Room UK

FSLCI WORKSHOPS



Room: Briefing Room FR

Workshop 1 Directional LCA Results

Room: Salle d'écoute 1

Workshop 2 Reporting & LCA

Room: Briefing Room UK

FSLCI Education Workshop

THURSDAY 7 SEPTEMBER

09.00 am - 03.00 pm

University of Luxembourg, Belval Campus

FSLCI EDUCATION WORKSHOP



Philip Strothmann, *FSLCI*

Sponsors

The Organizing committee is pleased to introduce you to the sponsors of LCM 2017 and thank the following organizations for this great collaboration and for providing such an invaluable support to LCM 2017!



PLATINUM SPONSOR

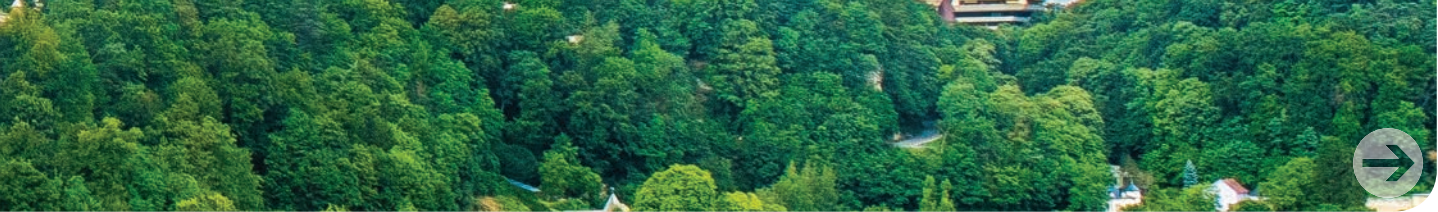
PRé has been at the forefront of sustainable development for more than 25 years and is a pioneer in Life Cycle Thinking. We are dedicated to making a positive change in the world by providing long-term solutions that benefit our customer's bottom line. With our services and first-class software solutions, industry companies can implement fact-based sustainable development for regulatory compliance, strategy and operations, and innovation. We help businesses integrate and develop sustainable strategies and products based on facts, measurable, improvable.

Putting the metrics into sustainability

PRé has built a worldwide reputation as a leader on environmental impact assessment. With state-of-the-art methodology and tools, we create business value by putting the metrics into sustainability. We are at the

forefront of the development of sustainability metrics based on Life Cycle Thinking. In the last 25 years, we have:

- actively participated in and contributed to many global sustainability initiatives
- actively participated in many European projects for LCA research and development, such as the ILCD Handbook and Product Environmental Footprint
- initiated industry-led initiatives, such as the roundtable for Product Social Metrics
- developed the world's most widely used LCA software: SimaPro
- developed the widely recognised and applied environmental impact assessment methods: ReCiPe & Eco-Indicator 99



thinkstep

PLATINUM SPONSOR

Thinkstep enables organizations worldwide to succeed sustainably. Our industry-leading software, data and services help businesses drive operational excellence, product innovation, brand value and regulatory compliance. Our unique combination of corporate, product and supply chain software and professional services expertise is underpinned by the world's leading sustainability data foundation. Built over the past 20 years, this foundation is continuously updated annually for consistency and credibility. With a global presence in 19 countries thinkstep serves more than 2,000 companies, including 40 percent of the Fortune 500, academic institutions, governments and associations. Many of the leaders and innovators in sustainability rely on thinkstep such as BASF, Hewlett-Packard, Interface, Kimberly Clark, Siemens, Unilever, Renault, Worldsteel, the Bank of England and the European Commission. For more information visit, www.thinkstep.com

The SoFi ts software platform for the enterprise simplifies and streamlines organizational sustainability and EHS management to enable transparent communication and operational excellence. With its

world-class automated data collection and reporting technologies, powerful analytics for big datasets and a modern, intuitive user experience SoFi software is the ideal choice for global organizations. SoFi software seamlessly integrates with existing IT systems and covers a broad range of functionalities including Sustainability Management & Reporting, Supplier Engagement, EHS Management, Energy Management and Building Portfolio Management.

GaBi ts is the world's leading Life Cycle Assessment (LCA) software with an unparalleled collection of Life Cycle Inventory (LCI) databases. It helps over 1,500 clients from industry, research institutes and universities to analyse, improve and report the environmental performance of products, processes and services. It is used for LCA, carbon and water footprinting, Environmental Product Declarations (EPDs), and eco-design. GaBi ts is part of a suite of solutions from thinkstep that integrate with existing IT systems and provide cloud-based scenario analysis and reporting.

For more information visit www.gabi-software.com or www.thinkstep.com.

Sponsors

PLATINUM SPONSOR



Sustainability is a key component of Evonik's performance pledge "Power to create" and an integral part of our corporate strategy. We take on responsibility—for our business, our employees, the environment, and society. For Evonik as a globally operating specialty chemicals company, business responsibility and long-term business success are two sides of the same coin. That can be seen in our customers' growing demand for our products and services, which maintain an excellent balance between economic, environmental, and social factors. Thanks to our innovative strength and technological leadership, we enable our customers to offer energy-efficient and resource-conserving solutions. The areas of application range from consumer goods for daily use to healthcare products, animal nutrition, and industrial applications such as energy-saving tires, wind turbines, high-performance lubricants, and

lightweight construction. Our sustainability strategy responds to the megatrends we have identified in our corporate strategy—health, nutrition, resource efficiency, and globalization—and supplements them with environmental and social goals. Our own sustainability activities overlap at many points with the objectives the United Nations aims to achieve with its Sustainable Development Goals by 2030. Evonik has been included 2016 in the prestigious "Dow Jones Sustainability Index (DJSI) World" and also "DJSI Europe" for the first time, gaining particularly high ratings in all environmental criteria. LCAs are a central focus of the sustainability analysis of our business and are being performed by the expert group Life Cycle Management. So far, the ecological impact of around 70 percent of the external sales generated by our chemical segments has been examined and the aim is it to extend this to around 80%.



PLATINUM SPONSOR



Kronospan manufactures and distributes wood-based panels. Globally we are the leading manufacturer of:

- Particleboard (PB)
- Medium density fibreboard (MDF)
- Laminate flooring
- UF, MUF and MF resins for wood-based panels
- The number one manufacturer of oriented strand board (OSB) in Europe

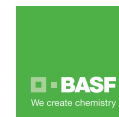
Kronospan also produces speciality and decorative paper as well as other associated value added products, such as melamine-faced panels, worktops, wall panels, window sills, lacquered HDF, compact boards, high pressure laminates (HPL) and others. Kronospan manufactures wood-based panels at more

than 40 sites and is local in many countries. We employ over 14,000 people with 70% of total product sales generated in Emerging Markets.

The Life+ program of the European Commission funded the project “Factory of the Future – Demonstration of the production of wood panels with near zero environmental footprint”. This project was created through an “eco-design of a factory” concept, a largely near self-sufficient production facility in Sanem (Luxembourg) with low environmental impact by combining the best practices in the field of production and use of energy, water and raw materials supply. The use of Life Cycle Assessment (LCA) has been applied to the entire production site and then to specific products for monitoring the progress towards near-zero environmental footprint and for communication purposes.

Sponsors

GOLD SPONSOR



Sustainability at BASF

We create chemistry for a sustainable future

We want to contribute to a world that provides a viable future with enhanced quality of life for everyone. We do so by creating chemistry for our customers and society and by making the best use of available resources. We live our corporate purpose “We create chemistry for a sustainable future” by

- Sourcing and producing responsibly,
- Acting as a fair and reliable partner,
- Connecting creative minds to find the best solutions for market needs.

For us, this is what successful business is all about.

Our high-value products and sustainable solutions play an important role in finding answers to global challenges such as climate protection, energy efficiency, nutrition and quality of life.

We aim to achieve profitable growth and take on social and environmental responsibility, focusing on issues through which we as a company can make a significant contribution. To effectively manage sustainability, we measure or otherwise quantify sustainability in each of these pillars.

At BASF sustainability has been a board-level responsibility since 2002. Our globally responsible Corporate Sustainability Board is the central steering and decision body for sustainable development within BASF.



GOLD SPONSOR

Quantis

Quantis: Inspired Sustainability

Quantis guides top organizations to define, shape and implement intelligent environmental sustainability solutions. We deliver resilient strategies, robust metrics, useful tools, and credible communications.

In a nutshell, we're the creative geeks. Our clients trust us to take the latest science and make it actionable.

We are Quantis: sustainability's scientists, experts, strategists, innovators and visionaries.

GOLD SPONSOR



iPoint is a leading provider of software, consulting, and services for environmental and social product compliance, sustainability, and digital circular economy. Tens of thousands of companies around the globe rely on iPoint's innovative, award-winning solutions for managing, tracking, analyzing, and reporting data across the whole value creation network. iPoint's solutions support you in meeting and staying one step ahead of regulations and requirements such as REACH, RoHS, WEEE, ELV,

Conflict Minerals- and Modern Slavery-related laws, as well as other trending developments and challenges governing product, supply chain, and enterprise stewardship. iPoint's holistic, circular perspective envisages a continuous, digital system lifecycle management process that supports not only compliance with the law, but also the sustainability of products, value chains, and brands.

www.ipoint-systems.com

Sponsors

SILVER SPONSOR



Whether you design them, manage them or work in them, Steelcase can help you create sustainable, high performance work environments anywhere in the world. By approaching sustainability holistically, Steelcase aspires to create enduring value for people, planet and global economies — fully leveraging our assets, our relationships, and our resources. Visit www.steelcase.com/sustainability to learn more.”

SILVER SPONSOR



“PlasticsEurope gathers chemical companies producing polymers in Europe. The association has been committed in Life Cycle Assessment for decades by managing a dataset program for plastics (<http://www.plasticseurope.org/plastics-sustainability-14017/eco-profiles.aspx>), and by contributing to LCA developments for example through the UNEP SETAC LCI (<http://www.lifecycleinitiative.org/>), or by participating to the European Product Environmental Footprint. We believe that LCA, completed by other tools like Risk Assessment, is indispensable to provide a good metric towards a Sustainable Production and Consumption.”

SILVER SPONSOR



Nestlé Research is the engine of innovation for Nestlé.

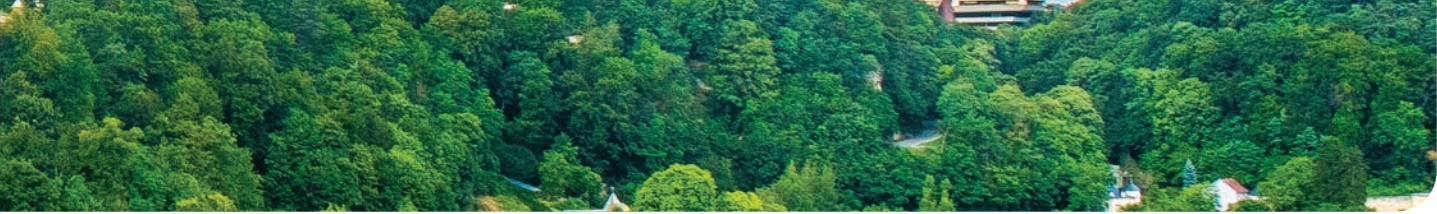
Our task at Nestlé Research is to convert exemplary scientific expertise and knowledge into product innovations and renovations in line with our Nutrition, Health and Wellness ambition.

We enhance lives with science-based nutrition and health solutions for all stages of life.

We do this by widening competitive gaps through product and technology leadership that has a positive business impact based on our ‘Discover-Develop-Deploy’ approach.

Our work affects every aspect and touch-point of the business. It means going beyond products and technologies. It means finding solutions across the value chain that make good, long-term business sense – and create value for society.

All that we do is people-based. A major part of our work is to deliver products that offer superior nutrition, health and wellness in a forward-looking and creative way. To achieve our goal and fuel sustainable success for Nestlé, we have the largest research network of any food company in the world, with 39 Research facilities, and over 5000 people involved.



SILVER SPONSOR

Tarkett in brief:

- A global leader in innovative and sustainable solutions for flooring and sports surface solutions
- 2015 net sales of € 2,715 million
- A 130-year entrepreneurial success story with the constant commitment of the Deconinck Family, our long-term shareholder
- Listed on Euronext Paris
- Shareholders composition as of July 31, 2016: Société Investissement Deconinck (50.2%), Free Float (39.3%), KKR International Flooring (10.2%) and Treasury Shares (0.3%)
- One of the broadest products portfolio in the flooring industry, offering integrated and coordinated solutions to professional and residential end-users
- 1.3 million m² of flooring sold every day for Healthcare, Education, Housing, Retail & Hospitality, Offices and Sports
- The most global player in the sector with 34 industrial sites and almost 12,000 employees serving clients in more than 100 countries
- Balanced geographic exposure: Net sales breakdown by region in 2015: CIS, APAC & LATAM 22%, North America 41%, EMEA 37%
- Committed to sustainable development and circular economy, with an active and acknowledged eco-innovation strategy

SILVER SPONSOR



Delphi Automotive PLC is a high-technology company that integrates safer, greener and more connected solutions for the automotive sector. Delphi is a leading global vehicle components manufacturer and provides electrical and electronic, powertrain and active safety technology solutions to the global automotive and commercial vehicle markets. Within its Powertrain division Delphi provides systems integration of full end-to-end gasoline and Diesel engine management systems including fuel injection equipment, fuel handling, combustion, electronic controls, test and validation capabilities. We design solutions to optimize powertrain power and performance while helping our customers meet new emissions and fuel economy regulations.

Besides seeking on optimization of gasoline or Diesel powered internal combustion engines and hybrid vehicles, Delphi also investigates alternative fuels such as natural gas (CNG) and bio-methane as an attempt to reduce oil dependency and greenhouse gas emissions. Therefore Delphi has developed a novel injector which enables direct injection of CNG. It has been successfully demonstrated that it then becomes possible to achieve performance levels similar to modern direct injection gasoline engines. (www.delphiauto.com/Life)

Parallel to our product development, Delphi is collaborating with the Luxembourg Institute of Science and Technology in order to perform a life cycle analysis and calculate CO₂ footprint. The study aims to verify the potential of DI-CNG technology to become a viable alternative for future low emission powertrains.

Financial Support

The Organizing Committee would like to thank the following institutions for their support for the conference.



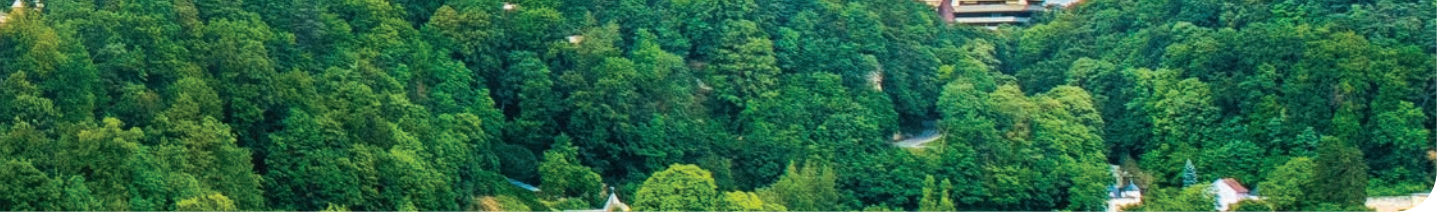
LUXEMBOURG NATIONAL RESEARCH FUND (FNR)

The Luxembourg National Research Fund (FNR) is the main funder of research activities in Luxembourg. The FNR invests public funds and private donations into research projects in various branches of science and the humanities, with an emphasis on selected core strategic areas. Furthermore, the FNR supports and coordinates activities to strengthen the link between science and society and to raise awareness for research. The FNR also advises the Luxembourg government on research policy and strategy.



EUROPEAN INVESTMENT BANK (EIB)

The European Investment Bank (EIB) is the financing institution of the European Union. It is owned by and represents the interests of the European Union (EU) Member States. The mission of the EIB is to contribute, by financing sound investments, to the policy objectives of the EU and to the integration, balanced development and economic and social cohesion of its Member States. It is the world's largest multilateral borrower and lender. More than 90% of EIB lending is attributed to promoters in the EU. Outside the Union, EIB lending is governed by a series of mandates in support of EU development and cooperation policies in partner countries.



LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de l'Économie

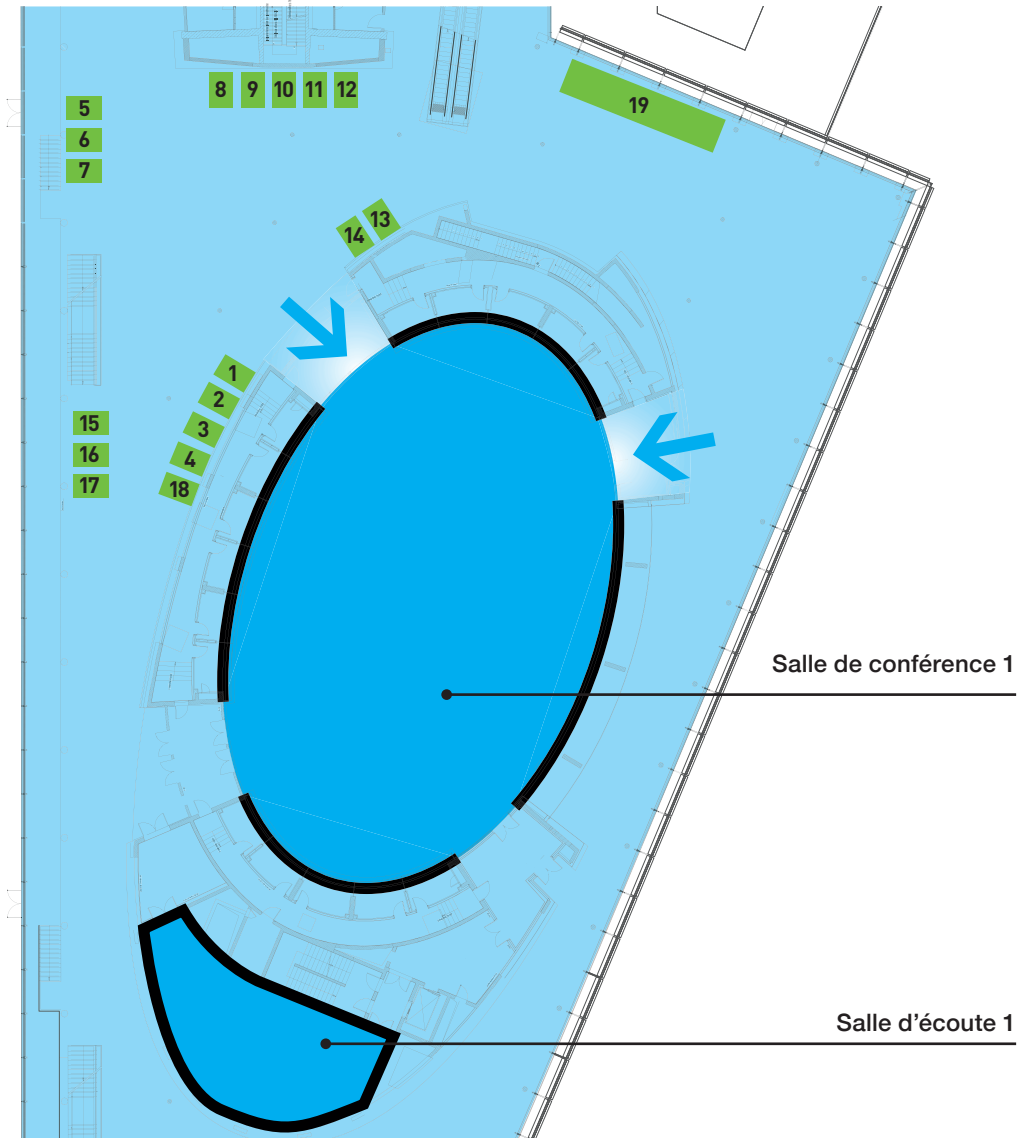
MINISTRY OF THE ECONOMY

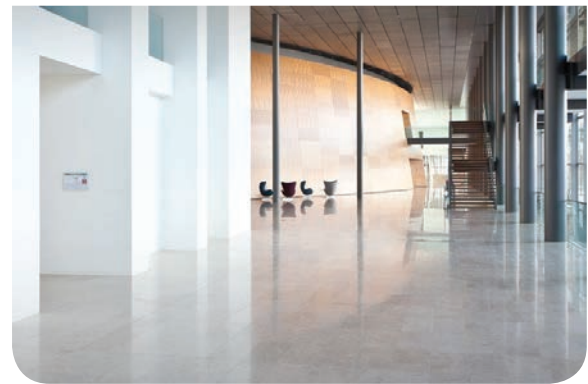
The Ministry of the Economy is in charge of implementing the economic competitiveness policy of Luxembourg. The policy is structured around the following priority areas: enterprise policy; economic promotion, development and diversification; general policy for small and medium-sized enterprises; general policy for tourism; commerce, development of new markets, quality and regulations; research and innovation; intellectual property; energy policy; policy for the legal protection of consumers, consumer policy on the common market and at the national level; space policy at the national and international levels and maritime affairs, navigation and maritime regulations.

Exhibition area



Main entrance
Cloakroom

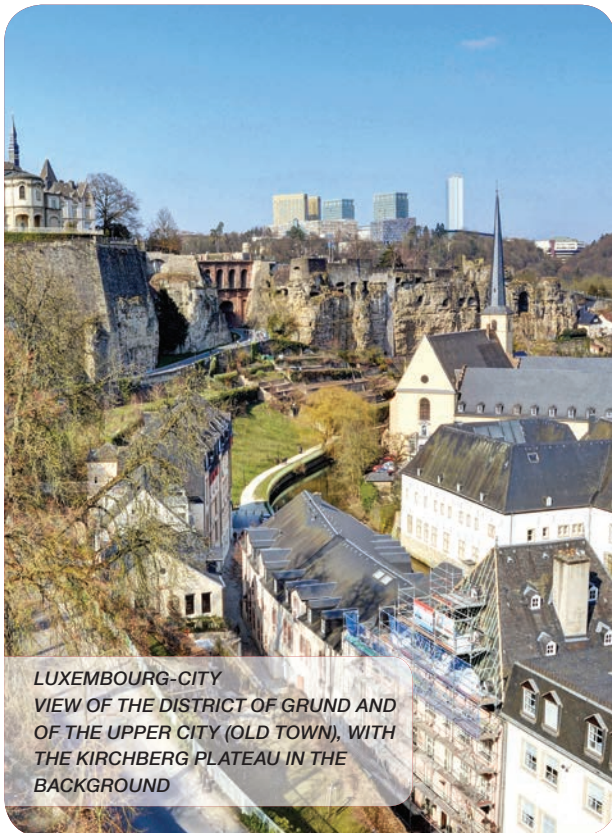




- 1 ecoinvent
- 2 Springer Nature
- 3 GreenDelta & Everysc
- 4 Blonk Consultants
- 5 Poznan University
- 6 Delphi Automotive Systems
- 7 Kronospan
- 8 Evonik
- 9 thinkstep
- 10 PlasticsEurope
- 11 Nestlé
- 12 iPoint
- 13 FSLCI
- 14 Pré
- 15 Swedish Life Cycle Management
- 16 Volkswagen & TU Braunschweig
- 17 Quantis
- 18 Environmental Picture
- 19 Luxembourg Institute of Science and Technology (LIST)

About Luxembourg

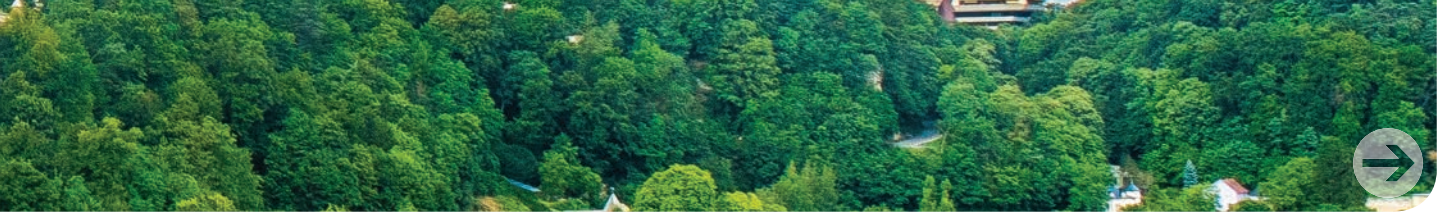
With an area of 2,586 square kilometres and a population of about 576,000 inhabitants, the Grand Duchy of Luxembourg, located between Germany, France, and Belgium, is one of the smallest member states within the European Union. Nevertheless, Luxembourg continues to demonstrate a strong legacy of economic opportunity, foreign relations development, and large-scale integration, demonstrating that the dimensions of its economy and domestic market reach well beyond its small borders.



*LUXEMBOURG-CITY
VIEW OF THE DISTRICT OF GRUND AND
OF THE UPPER CITY (OLD TOWN), WITH
THE KIRCHBERG PLATEAU IN THE
BACKGROUND*

As an original and well-integrated member of the European Union, Luxembourg was a strong proponent of the introduction of the Euro. Together with Brussels and Strasbourg, Luxembourg City is the official seat of many of the European Union's major organizations.

Today, Luxembourg hosts an open economy that exports over 80% of domestic production, distinguishing itself as a trustworthy and recognized political and economic partner across European and international spheres. The Grand Duchy also plays prominent roles in the development of the Greater Region, an area composed of the Grand Duchy and the neighbouring regions in Belgium, France, and Germany.



The city of Luxembourg, the thousand-year-old capital of the Grand Duchy, was founded in 963. Over the course of its history, Luxembourg has been occupied by Burgundians, Spanish, French, Austrians and Prussians, all of whom contributed to making the city one of the best fortified in the world, the “Gibraltar of the North”. Today, the fortress, along with the old city, have gained international fame. In 1994, UNESCO recognized the city’s historical importance by naming it a World Heritage Site.

The country is also geographically large: from the green valleys of the Ardennes, via the rock formations of the Mullerthal Region to the vineyards along the Moselle River or the Land of the Red Rocks, which still marks the industrial era back to the Guttland with lovely green spaces. Every region has its own fascinating landscape!

Luxembourg also represents the highest density of ‘Leading Quality Trails – Best of Europe’. This label guarantees a high quality walking experience. The “Escapardenne - Eisléck Trail & Lee Trail” and the “Mullerthal Trail” both fulfil the quality criteria. Luxembourg City is a lively and bustling capital with a lot of great touristic attractions to visit and a multitude of things to do. As a cultural platform, it abounds in venues for artistic expression, such as museums, theatres and concert halls. The cultural offer in Luxembourg is representative of its city dwellers: multilingual, multicultural, creative and eclectic. Indeed, the central region of the country is home to nearly 170 different nationalities that have chosen to live in or next to a capital at the heart of the action. Don’t be surprised to hear many different languages in the streets and by the fact that almost everyone speaks at least French, German or English. We hope that you will enjoy your visit to the only Grand Duchy in the world!

Social events

The LCM conference series is not only about the scientific program. It also gives participants a great opportunity to meet and talk to each other in less formal settings. The Organizing Committee hopes you will join us during the social events.

All the events are included in the conference fee.

WELCOME RECEPTION

3 September, 06.00 pm

The Welcome Reception will take place on Sunday 3 September at the European Convention Center (ECCL) in Luxembourg-Kirchberg.

ECCL-LuxCongress

4, place de l'Europe | L-1499 Luxembourg

RECEPTION COCKTAIL AT CERCLE CITÉ

4 September, 07.00 pm

A Reception Cocktail will be hosted on Monday 4 September at Cercle Cité, in the city centre of Luxembourg.

Welcome speeches:

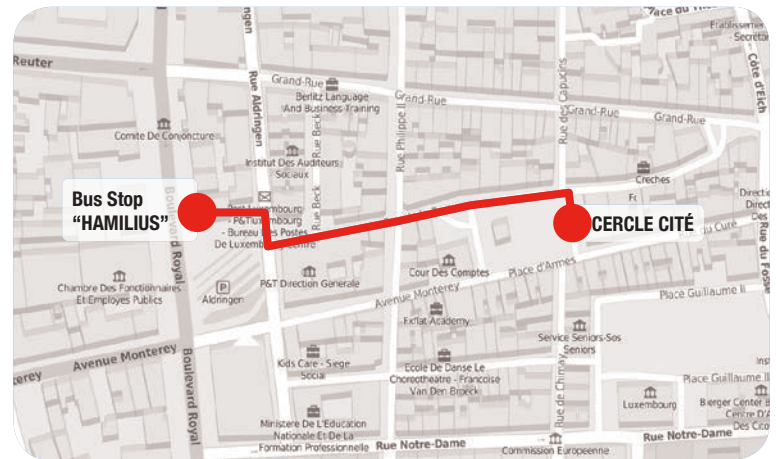
Lydie Polfer, Mayor of Luxembourg City (tbc)

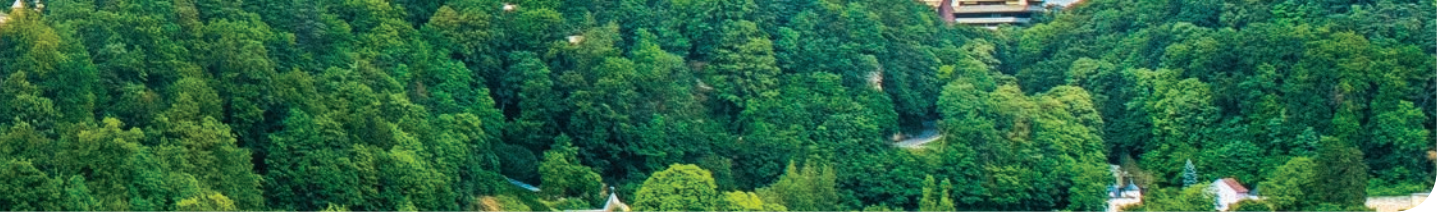
From the conference location, take bus lines 1, 16 or 125 to the "Hamilius" stop.

Cercle Cité

Place d'Armes | L-2012 Luxembourg

ECCL - LuxCongress





GALA DINNER AT THE ROCKHAL

5 September, 07.30 pm

The LCM 2017 Conference dinner will take place at the Rockhal. Located in the heart of Belval, City of Science, the Rockhal is the biggest concert hall in the Grand Duchy. Opened in 2005, it has hosted mythical concerts and shows from the Cirque du Soleil to ZZ Top, Depeche Mode, Daft Punk or Lady Gaga.

As the venue is outside Luxembourg City, shuttle buses will be organised from the Conference Center from 6.30 pm. Don't be late!



Conference venue

The European Convention Center Luxembourg (ECCL) is a purpose-built venue located on the Kirchberg plateau, within walking distance of the **business district and the European institutions**. The site is an outstanding conference location in Luxembourg and is used every year by the Council of the European Union.

HOW TO GET THERE

BY PLANE:

The international Findel airport in Luxembourg is situated only 6 km from the city centre and 4 km from Kirchberg. There are direct flights to many European cities.

BY TAXI:

WEBTAXI: online booking www.webtaxi.lu or by phone: (+352) 27515

Taxis COLUX: (+352) 48 22 33

CITY Taxis: (+352) 48 00 58

**European Convention
Center Luxembourg**
4, place de l'Europe
L-1499 Luxembourg
www.luxcongress.lu





BY BUS:

The Congress Center is easily accessible with the Luxembourg City bus network. Transport information is available at www.autobus.lu or www.mobiliteit.lu (you can also download the mobile application).

Buses 1 and 16, and all those marked 'Eurobus' go from the airport, train station and city centre to the Congress Center. Please get off at the "Philharmonie" stop.

BY TRAIN:

The Gare Centrale (main station) in Luxembourg is situated only 5 km from Kirchberg. It is linked to many European cities.

BY CAR:

E29/E44/A1 exit 8 Plateau de Kirchberg /
Foire-Messe / Luxembourg-Centre
GPS coordinates of the Hotel Melià:
N +49° 36' 58.96" / W +6° 8' 25.96"

PARKING (PAID CAR PARK)

Parking Place de l'Europe:
Vinci Park, L-1499 Luxembourg-Kirchberg

Parking des Trois Glands:
Place de l'Europe, L-1499 Luxembourg-Kirchberg

Map: <http://www.vincipark.lu/fr/parkings/place-de-l-europe-LU010900>



Practical & Poster Information

CONFERENCE REGISTRATION

The conference registration fee includes admission to all conference sessions, the poster area, exhibition area and access to lunch and refreshments during breaks.

Social events are also included. However, a pre-registration has been requested in the registration system.

REGISTRATION / INFORMATION DESK OPENING TIMES

Sunday 03/09: 06.00 pm - 08.00 pm

Monday 04/09: 08.00 am - 05.30 pm

Tuesday 05/09: 08.00 am - 05.30 pm

Wednesday 06/09: 08.30 am - 04.30 pm

Contact: Marylène Martin | Tel.: (+352) 621 133 016

Céline Goncalvès | Tel.: (+352) 621 152 924

Email: lcm2017@list.lu

ERRATA SHEET

If you do not find your presentation or meeting in the program book, please check the errata sheet in your delegate bag.

TWITTER account: @lcm_events

Hashtag: #LCM2017

WIFI and Password: LCM_2017

LUGGAGE

Luggage can be taken care of by the ECCL cloakroom service during the event.

IN CASE OF EMERGENCY

In case of emergency, call the phone number 112.

FREE MOBILE APP

The LCM 2017 dedicated app is available as a native mobile app in app stores (Google Play, Apple Store, Blackberry World and Windows Phone).

If your mobile phone is not supported by the app, a web browser compatible version of the app is also available: <http://eventmobi.com/lcm2017>

The app will be updated during the conference with the latest news and will be used to reduce the printing of documents. All the abstracts related to oral presentations and posters will be available through the app. You can also use the conference app to keep track of the different sessions in the program you specifically want to attend.

The mobile app also allows you to provide feedback and participate in the “poster challenge” (an activity where conference participants can win daily prizes by answering questions related to the conference posters) and to the “From PhD to Apps!” session.



MATCHMAKING EVENT

For the first time in LCM conference series, a B2Fair event will be organized. This event will enable the participants to optimize their visits by giving them the possibility to find the ideal partnership in the circular economy and sustainability sector in Europe and beyond.

Organized by the Enterprise Europe Network-Luxembourg, this b2b event aims to boost strategic alliances in the life cycle management domain and will offer its participants a perfect platform to exchange best practices, the latest trends and new developments in this field.

The matchmaking event will be supported by its own web application. Please visit the dedicated page on the LCM website or go directly to the matchmaking website:



B2FAIR TIMETABLE:

Monday 4 September – Tuesday 5 September

01.00 pm - 06.00 pm

Wednesday 6 September

01.00 pm - 04.00 pm

Practical & Poster Information

POSTER INFORMATION

Posters will be set up and taken down by the presenting author, at the times shown below. The presenting author is expected to stay with the poster at coffee breaks and during lunch time. The list of posters is provided in the downloadable pdf program book version available on the LCM website.

Sunday 3 September

06.00 pm - 08.00 pm poster set-up

Monday 4 September - Tuesday 5 September

08.00 am – 09.00 am Poster set-up

05.30 pm – 06.00 pm Poster take down

Wednesday 6 September

08.00 am – 09.00 am Poster set-up

04.30 pm – 05.00 pm Poster take down

POSTER CHALLENGE

To enhance the “poster session experience” at LCM2017, we challenge the conference participants to visit as many posters as possible and of course, get a good understanding of each poster.

The challenge will take the form of a game, where each poster visitor should answer a multiple choice question for each poster.

Participants will answer the questions using the LCM 2017 dedicated mobile app that will give users a challenge for each poster.

All the posters are downloadable on the LCM 2017 website.

At the end of each day of the conference, the poster visitor and the poster author having the highest number of correct answers will be awarded with prizes.

Poster Session Overview

MONDAY

- _ LCM for transport and mobility
- _ Life Cycle Management of Energy and Energy Transitions - Managing the complexity of today's and future energy systems with a life cycle focus: Challenges and methodological solutions
- _ Using LCA and EPD in Public Procurement - Discussion session
- _ Modelling mobility systems today and in the future
- _ Potentials and limitations of combined life cycle approaches and multi-dimensional assessment
- _ Environmental assessment of energy related products and energy systems across their life cycle
- _ Management of construction waste: LCA and complex system modeling

TUESDAY

- _ Implementation and management of life cycle approaches in business – Challenges, opportunities, business learnings and best practice
- _ Raw materials supply chains in the light of the circular economy
- _ LCM and Circular Economy Challenges for the textile sector
- _ Sustainability of bio-based products: linking Life Cycle Thinking with standards, certification and labelling schemes
- _ Using LCM to create shared value through healthcare and pharmaceutical supply chains
- _ Best practices for Sustainable Design: integrating LCM into the innovation processes
- _ Bio-based materials within the circular economy: opportunities and challenges?
- _ Improving interpretation, presentation and visualisation of LCA studies for decision making support
- _ Sustainable Design of Complex Systems, Products and Services with Users integration into design
- _ Improving the life cycle performance of chemical products and materials through data exchange along the value chain

WEDNESDAY

- _ Integrating the concept of Planetary Boundaries into decision making processes
- _ Greening agri-food value chains in emerging economies
- _ Trends in life cycle thinking in regional development: methodological advances and challenges for the future
- _ Turning the lens around: LCA Success Stories “outside-in”
- _ I have a dream: Open Marketplace for Life Cycle approaches!
- _ Food waste management (sector) in a circular economy
- _ Life Cycle Approaches to Sustainable Regional development

Schedule

MONDAY, SEPTEMBER 4 : PLENARY SESSION – OPENING CEREMONY

09.00 am – 10.30 am

COFFEE BREAK AND POSTER SESSION

10.30 am – 11.00 am

PLENARY SESSION – KEYNOTE SPEECHES

11.00 am – 12.00 pm

LUNCH AND POSTER SESSION

12.00 pm – 02.00 pm

OPENING CEREMONY

LOCATION: Salle de Conférences 1

MODERATOR: Enrico Benetto, *Luxembourg Institute of Science and Technology*

08.00 am Doors open

09.00 am - 09.05 am Welcome speech

Enrico Benetto

Chair of LCM2017, Head of Unit “Life Cycle Sustainability and Risk Assessment” at Luxembourg Institute of Science and Technology

09.05 am - 09.15 am Introductory speech

Mrs Carole Dieschbourg

Minister for the Environment of Luxembourg

09.15 am - 09.40 am New steels driving the circular economy, innovative solutions for future mobility

Brian Aranha

Executive Vice-President, ArcelorMittal

09.40 am - 10.30 am Special Keynote speech

Bertrand Piccard

Initiator of the “Solar Impulse” Challenge and President of the World Alliance for Efficient Solutions



PLENARY SESSION – KEYNOTES SPEECHES

LOCATION: Salle de Conférences 1

- 11.00 am - 11.20 am** **Sustainability at the core of the chemical industry's business model**
Stefan Haver
*Head of the Corporate Responsibility Division at the Essen-based specialty chemicals,
Evonik Industries AG*
- 11.20 am - 11.40 am** **How DSM is using LCA to implement circular economy**
Henk-Jan Udding
Innovation Director at DSM Coating Resins
- 11.40 am - 12.00 pm** **Vision for the future of sustainability assessment and management**
Jan Poulsen
CEO at Thinkstep AG



Schedule

MONDAY, SEPTEMBER 4 : PARALLEL SESSIONS

02.00 pm - 03.30 pm

COFFEE BREAK AND POSTER SESSION

03.30 pm - 04.00 pm

LCM FOR TRANSPORT AND MOBILITY

SESSION STARTS AT 01.15 PM

LOCATION: Salle de Conférences 1

CHAIRS: **Stephan Krinke**, *Volkswagen AG*
Christoph Hermann, *Technical University of Braunschweig*

01.15 pm Life cycle based CO₂ emission credits – an approach to foster sustainable mobility by integrating a life cycle perspective into automotive legislation

Annekatriin Lehmann, **Markus Berger**, **Matthias Finkbeiner**

Technische Universität Berlin, Germany

01.30 pm Integrating life cycle engineering, component design and manufacturing in the development of eco-efficient lightweight concepts

Alexander Kaluza^{1,3}, **Sebastian Kleemann**^{1,3}, **Wolfgang Walk**^{2,3}, **Thomas Vietor**^{1,3}, **Christoph Herrmann**^{1,3}

¹TU Braunschweig, Germany; ²Volkswagen AG, Germany; ³Open Hybrid LabFactory e.V., Germany

01.45 pm Adopting Life Cycle Sustainability Assessment in the Automotive Industry – Tackling a Multi-Criteria and Multi-Stakeholder Issue

Peter Tarne¹, **Volkmar Wagner**¹, **Matthias Finkbeiner**²

¹BMW Group, Germany; ²TU Berlin, Germany

02.00 pm An LCA comparison of different powertrains and fuels today and 2030

Benjamin Plaga

Volkswagen AG, Germany

02.15 pm Parametric LCA for a first tier assessment of products by the example of logistics

Nikolaj Otte, **Rachita Singh**, **Klaus Engelmann**, **Johannes Tolls**, **Mehboob Nawaz**

Henkel AG & Co. KGaA, Germany

02.30 pm The Toyota 2050 Environmental Challenges from a Life Cycle perspective's viewpoint

Ronny Denis

Toyota Motor Europe, Belgium



- 02.45 pm** **Synthetic Power-to-Gas as Fuel for Transportation: Life Cycle Environmental Impacts of the Synthetic Methane Supply Chain Powered by Renewable Electricity**
Sarah Wettstein, Matthias Stucki
Zurich University of Applied Sciences ZHAW, Switzerland
- 03.00 pm** **Regional specific LCA data of flat steel products for detailed analysis along the value chain**
Norbert Hatscher¹, Simon Kroop², Roland Mayr³, Anna Meincke⁴, Lisa Mohr⁴, Alexander Redenius², Stefan Schuster³
¹Stahlinstitut VDEh, Germany; ²Salzgitter Mannesmann Forschung GmbH, Germany; ³voestalpine Stahl GmbH, Austria; ⁴thyssenkrupp Steel Europe AG, Germany
- 03.15 pm** **Environmental Footprint Profiles of Hydrogen as Automotive Energy**
Yuki Kudoh, Naomi Kitagawa, Ryoji Muramatsu, Akito Ozawa, Yutaka Genchi
National Institute of Advanced Industrial Science and Technology, Japan

LIFE CYCLE MANAGEMENT OF ENERGY AND ENERGY TRANSITIONS - MANAGING THE COMPLEXITY OF TODAY'S AND FUTURE ENERGY SYSTEMS WITH A LIFE CYCLE FOCUS: CHALLENGES AND METHODOLOGICAL SOLUTIONS

LOCATION: Salle de Conférences 2

CHAIRS: Karin Treyer, *Paul Scherrer Institute*
Roberto Turconi, *ArcelorMittal*
Alicia Boyano-Larriba, *JRC European Commission*

- 02.00 pm** Using integrated assessment model results to develop background databases for prospective LCA
Brian Cox¹, Christopher Mutel¹, Angelica Mendoza Beltran², Detlef van Vuuren³
¹Paul Scherrer Institute, Switzerland; ²Leiden University, Institute of Environmental Sciences (CML), Netherlands; ³Environmental Assessment Agency (PBL), Netherlands
- 02.15 pm** Using energy system models integrated with life cycle thinking to inform energy transitions in cold regions
Miguel F. Astudillo¹, Kathleen Vaillancourt², Marianne Pedinotti-Castelle¹, Pierre-Olivier Pineau³, Ben Amor¹
¹Université de Sherbrooke, Canada; ²Esmia consultants, Canada; ³HEC Montreal
- 02.30 pm** Modelling the life cycle and long-term environmental impacts of energy transitions: A study combining LCA and integrated assessment modelling
Anders Arvesen¹, Michaja Pehl², Gunnar Luderer², Benjamin Leon Bodirsky², Anders Hammer Strømman¹, Edgar G. Hertwich³
¹Norwegian University of Science and Technology, Norway; ²Potsdam Institute for Climate Impact Research, Germany; ³School of Forestry and Environmental Research, Yale University, USA
- 02.45 pm** CO₂ effects of temporal electricity purchase shifting on German wastewater treatment plants
Maximilian Seier, Liselotte Schebek
TU Darmstadt, Institute IWAR, Germany
- 03.00 pm** Distance to change: LCA as conserving/innovative tool – the case of the green prestigious project “Amager Bakke”
Søren Løkke, Massimo Pizzol
Aalborg University, Denmark
- 03.15 pm** Discussion panel and Q&A



USING LCA AND EPD IN PUBLIC PROCUREMENT WITHIN THE CONSTRUCTION SECTOR - DISCUSSION SESSION

LOCATION: Salle de Conférences de Presse

CHAIRS: Kristian Jelse, *EPD International*
Kristof Peerens, *3M*

02.00 pm Challenges to mainstream the use of EPDs in construction Public Procurement in European context

Naeem Adibi, Vanessa Pasquet, Marie Darul, Aubin Roy, Alice Salamon

[avniR] - cd2e, France

02.15 pm Implementing climate emission demands in road construction contracts: Insights from the KRAKK project and the Norwegian Public Roads Administration

Karl Sigurd Fredriksen¹, Reyn O'Born²

¹The Norwegian Public Roads Administration; ²University of Agder

02.30 pm A Manufacturing Sector's Experience of integrating EPD alongside product, management system and responsible sourcing certification for public procurement

Lee Brankley¹, Ayhan Tugrul¹, Jane Anderson², David Knight³

¹CARES, United Kingdom; ²Thinkstep, United Kingdom; ³One Planet, United Kingdom

02.45 pm Green Public Procurement and Construction Sector: EPD and LCA based benchmarks of the whole-building

Sara Ganassali¹, Monica Lavagna¹, Andrea Campioli¹, Sergio Saporetti²

¹Politecnico di Milano-Department ABC, Italy; ²Ministero dell'ambiente e della tutela del territorio e del mare-Direzione Clima ed Energia-Divisione II certificazione ambientale ed acquisti pubblici verdi, Italy

03.00 pm How LCA and EPD are used for implementing Green Public Procurement in the construction sector in Germany

Oliver Kusche¹, Tanja Brockmann², Hildegund Figl³

*¹ok*worx consulting, Germany; ²Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR), Germany; ³Austrian Institute for Healthy and Ecological Building (IBO), Austria*

03.15 pm Discussion panel and Q&A

ROLE OF CARBON CAPTURE AND USE (CCU) ON CLIMATE MITIGATION

LOCATION: Salle D

CHAIRS: Jan Bollen, *ArcelorMittal*

ArcelorMittal, world leader for steel production, works together with industrial partners from the cement and chemical industries in order to look at the potential synergies existing between the manufacturing processes of these three energy intensive sectors, and how these synergies could be harnessed to reducing CO₂ emissions.

Based on this project, the session aims at demonstrate the place of LCM methods and tools in support to regional and local policy definition and implementation.

Industrial representatives and policy makers involved in the panel will present and discuss the technical and political challenges to be faced when developing and experimenting disruptive technologies and associated business models.

Speakers TBC

Speakers will give short presentations followed by a discussion.



LCM AT THE URBAN SCALE: BIM AND NATURE BASED SOLUTIONS

LOCATION: Salle E

CHAIRS: **Antonino Marvuglia**, *Luxembourg Institute of Science and Technology*
Benedetto Rugani, *Luxembourg Institute of Science and Technology*
Germain Adell, *Nobatek*

- 02.00 pm** **The environmental impact of ventilation systems in a Norwegian office building from a life cycle perspective**
Alexander Borg¹, **Helge Brattebø²**, **Christian Solli¹**
¹Asplan Viak As, Trondheim, Norway; ²Norwegian University of Science and Technology, NTNU, Programme for Industrial Ecology, Trondheim, Norway
- 02.15 pm** **Design-integrated LCA using early BIM**
Alexander Hollberg^{1,2}, **Julia Tschetwertak²**, **Sven Schneider²**, **Guillaume Habert¹**
¹ETH Zürich, Switzerland; ²Bauhaus University Weimar, Germany
- 02.30 pm** **A proposition to extend CityGML and ADE Energy standards for exchanging information for LCA simulation at urban scale**
Adélaïde Mailhac, **Emmanuelle Cor**, **Marine Vesson**, **Elisa Rolland**, **Pascal Schetelat**, **Nicoleta Schiopu**, **Alexandra Lebert**
Université Paris-Est, Centre Scientifique et Technique du Bâtiment (CSTB), France
- 02.45 pm** **Dynamic Assessment of Nature Based Solutions through Urban Level LCA**
Duygu Basoglu, **Seda Yöntem**, **Beril Senyurt**, **Ozge Yilmaz**
Ekodenge AŞ, Turkey
- 03.00 pm** **How does the spatial distribution of green within cities impact carbon flows? A European scale analysis**
Marlène Boura
University of Luxembourg, Luxembourg
- 03.15 pm** **Discussion panel and Q&A**



Schedule

MONDAY, SEPTEMBER 4 : PARALLEL SESSIONS

04.00 pm - 05.30 pm

MODELLING MOBILITY SYSTEMS TODAY AND IN THE FUTURE**LOCATION:** Salle de conférences 1**CHAIRS:** Christopher Mutel, *Paul Scherrer Institute*
Jens-Christian Holst, *Siemens Corporate Technology***04.00 pm** LCA in strategic decision making for long term urban transportation system transformationFlorian Ansgar Jaeger¹, Katrin Mueller², Cornelia Petermann³, Eric Lesage⁴¹*Siemens AG, Germany*; ²*Siemens AG, Germany*; ³*Siemens AG, Germany*; ⁴*Siemens AG, Germany***04.15 pm** Prospective life cycle impact scenarios of container shippingEvert Alwin Bouman, Anna Ringvold, Anders Hammer Strømman*Norwegian University of Science & Technology, Norway***04.30 pm** Including the energy saving potential of self-driving cars into prospective LCA of passenger vehiclesBrian Cox, Christopher Mutel*Paul Scherrer Institute, Switzerland***04.45 pm** Life Cycle assessment of high-speed rail infrastructure: the case of the new Tours-Bordeaux railway in FranceAnne de Bortoli¹, Adélaïde Feraille², Lina Bouhaya³, Fabien Laurent¹¹*Laboratoire Ville Mobilité Transport, Ecole Nationale des Ponts ParisTech, France*; ²*Laboratoire Navier, Ecole Nationale des Ponts ParisTech, France*; ³*Libanese University, Beirut***05.00 pm** LCA of liquid organic hydrogen carriers as a means of hydrogen transportationChristina Wulf¹, Muralimohan Juttu Vidyasagar^{1,2}¹*Forschungszentrum Jülich GmbH, Germany*; ²*FH Aachen University of Applied Science***05.15 pm** Discussion panel and Q&A

ENVIRONMENTAL ASSESSMENT OF ENERGY RELATED PRODUCTS AND ENERGY SYSTEMS ACROSS THEIR LIFE CYCLE

LOCATION: Salle de conférences 2

CHAIRS: **Nieves Espinosa**, *European Commission, JRC - IPTS*
Anders Arvesen, *NTNU*

Presentations have been organized in three blocks looking for synergies between presenters.

04.00 pm **Electricity Generation**

Reduction of site-specific electricity generation particulate matter impacts in China

Christopher Oberschelp, **Stephan Pfister**, **Stefanie Hellweg**

ETH Zurich, Switzerland

Geographical resolution of LCI data on electricity production – the level of detail needed.

POSTER SPOTLIGHT

Tereza Lérová, **Lucia Valsasina**

ecoinvent Centre, Switzerland

Q&A

04.20 pm **Energy from Photovoltaic and related uses**

Quantifying the importance of comprehensive life cycle and impact coverage for photovoltaic systems.

Marios D. Chatzisideris¹, **Nieves Espinosa²**, **Alexis Laurent³**, **Frederik C. Krebs¹**

¹*Department of Energy Conversion and Storage, DTU Technical University of Denmark, Denmark;*

²*European Commission Joint Research Centre, Institute for Prospective Technological Studies, Sevilla, Spain;*

³*Department of Management Engineering, DTU Technical University of Denmark, Denmark*

Consequential life cycle assessment of an organic photovoltaic portable solar charger applied in the context of European electricity mixes. POSTER SPOTLIGHT

Steffi Weyand¹, **Edis Glogic^{2,3}**, **Guido Sonnemann²**, **Liselotte Schebek¹**, **Steven B Young³**

¹*Technische Universität Darmstadt, Germany;* ²*University Bordeaux, France;* ³*University of Waterloo, Ontario, Canada*

Life Cycle Assessment of a Mobile Charger containing Recycled Plastics**Youngchai Heo¹, Sandeep Rana², Youngjin Suh¹***¹Samsung Electronics, Suwon, South Korea; ²Samsung Electronics Europe, London, UK***A Dream comes true - Use of CO₂ for the production of plastics. POSTER SPOTLIGHT****Birgit Himmelreich***Covestro Deutschland AG, Germany***Q&A**

05.00 pm

Modelling life cycle stages, cost considerations and operational issues**An innovative LCI Database on WEEE management****Thomas Van Nieuwenhuysse¹, Pierre-Marie Assimon¹, Laure Morice², Romain Lesage², Charlotte Hugrel³, Magali Palluau³, Philippe Osset⁴***¹Eco-systèmes, France; ²Récylum; ³Bleu Safran; ⁴Solinnen***Is it useful to improve modeling of usage scenario to improve the environmental footprint of energy consumption product? POSTER SPOTLIGHT****Charlotte Heslouin^{1,2,3}, Lionel Pourcheresse¹, André Stumpf¹, Véronique Perrot Bernardet², Alain Cornier², Nicolas Perry³***¹Carrier Transicold Industries, France; ²Arts et Métiers Paristech - Institut de Chambéry, France; ³Arts et Métiers ParisTech, France***Design accompanying Life Cycle Assessment for the development of new energy-efficient window concepts. POSTER SPOTLIGHT****Almut Schmidt¹, Lingqi Su², Mathias Fraaß², Lothar Wondraczek³***¹EurA AG, Germany; ²Beuth University of Applied Sciences, Germany; ³Friedrich Schiller University Jena, Germany***Q&A**

SPECIAL SESSION ON PRODUCT ENVIRONMENTAL FOOTPRINT

LOCATION: Salle de Conférences de Presse

CHAIRS: Michele Galatola, *European Commission, DG Environment*
Alberto Frausin, *Carlsberg*

04.00 pm Environmental Footprint: the key enabler of the next green revolution

Michele Galatola, An De Schryver, Benedetta Nucci, Imola Bedo

European Commission, DG Environment, Belgium

04.15 pm Benchmark and performance classes in the European Environmental Footprint (EF) –
learnings from the Product EF Category Rules (PEFCR) on olive oil

Erwin M. Schau¹, Carlo Russo², George Michalopoulos³, Juan Antonio Polo Palomino⁴, Rana Pant¹

¹European Commission, Joint Research Centre, Italy; ²University of Foggia, Italy; ³RodaxAgro Ltd, Greece;

⁴CO₂ consulting S.L., Spain

04.30 pm PlasticsEurope learning and views from the European EF pilots

Guy Castelan¹, Quentin De Hulst²

¹PlasticsEurope, France, ²BASF

04.45 pm PEF Supporting study reviews: Learnings and the implications for communication

Max Sonnen¹, Marisa Vieira², Pau Huguet Ferran¹, Laura Golsteijn²

¹Ecomatters B.V., Netherlands; ²PRé Consultants B.V., Netherlands

05.00 pm Reflections on PEF input to an Environmental Management System

Mihaela Thuring, Carolin Spirinckx

VITO, Belgium

05.15 pm Discussion panel and Q&A

MANAGEMENT OF CONSTRUCTION WASTE: LCA AND COMPLEX SYSTEM MODELLING**LOCATION:** Salle D**CHAIRS:** **Anne Ventura**, *University of Nantes*
Maxime Trocmé, *Vinci Construction***04.00 pm** **Prospective and regional modelling of construction material flows****Niko Heeren**, **Stefanie Hellweg***IfU-ESD, ETH Zurich, Switzerland***04.15 pm** **Guidelines for effective and sustainable recycling of construction and demolition waste (CDW)****Serena Giorgi**, **Monica Lavagna**, **Andrea Campioli***Politecnico di Milano, Italy, Department of architecture, built environment and construction engineering***04.30 pm** **Adaptive reuse of buildings and its life cycle sustainability benefits****Harn Wei Kua***NUS, Singapore***04.45 pm** **Evaluating the construction and demolition waste management system implemented in Lombardy Region (Italy) through Life Cycle Assessment****Lucia Rigamonti**, **Sara Pantini***Politecnico di Milano, Italy***05.00 pm** **Alternatives for materials from an end-of-life building, evaluated with Life Cycle Costing and Life Cycle Assessment****Brenda Miranda-Xicotencatl**, **Diana Ita-Nagy**, **Mingming Hu**, **Valentina Prado-Lopez***Leiden University, Netherlands***05.15 pm** **Discussion panel and Q&A**

POTENTIALS AND LIMITATIONS OF COMBINED LIFE CYCLE APPROACHES AND MULTI-DIMENSIONAL ASSESSMENT

LOCATION: Salle E

CHAIRS: **Johanna Berlin**, *SP Technical Research Institute of Sweden*
Diego Iribarren, *Instituto IMDEA Energía*

04.00 pm **A systematic approach to an environmental techno-economic assessment alongside technology development**

Gwenny Thomassen^{1,2}, Miet Van Dael^{1,2}, Steven Van Passel^{2,3}

¹VITO; ²Hasselt University; ³University of Antwerp

04.10 pm **Multicriteria and Lifecycle-based integrated sustainability assessments: common challenges and points of divergence**

Carlos Tapia¹, Aritz Alonso¹, Hanna Pihkola², Tiina Pajula², Michael Ritthoff³, Peter Saling⁴, Ywann Penru⁵, Alexander Röder⁶

¹Tecnalia R&I, Spain; ²VTT Technical Research Centre of Finland; ³Wuppertal Institute for Climate, Environment and Energy; ⁴BASF; ⁵Suez Environnement; ⁶CEMEX

04.20 pm **Current Practice, Limitations and Recommendations for Life Cycle Sustainability Evaluations of Biomass Value Chains**

Michael Martin¹, Frida Røyne², Åsa Moberg¹, Tomas Ekvall¹, Albin Pettersson¹, Anja Karlsson¹

¹IVL-Swedish Environmental Research Institute; ²RISE Research Institutes of Sweden

04.30 pm **Sustainable road planning. LCA tools designed for optimization at an early and a late stage of road infrastructure planning**

Johanne Hammervold¹, Bob Hamel²

¹Asplan Viak AS, Norway; ²Norwegian Public Road Administration

04.40 pm **Discussion panel and Q&A**

04.50 pm Assessing impacts of land use change using predictive, spatial modelling.

Sarah Sim¹, Rebecca Chaplin-Kramer², Perrine Hamel², Benjamin Bryant², Ryan Noe³, Carina Mueller¹, Giles Rigarlsford¹, Michal Kulak¹, Virginia Kowal², Richard Sharp², Julie Clavreul¹, Edward Price¹, Stephen Polasky^{3,4}, Mary Ruckelshaus², Gretchen Daily^{2,5}

¹SEAC, Unilever, United Kingdom; ²Natural Capital Project, Woods Institute for the Environment, Stanford University, USA; ³Natural Capital Project, Institute on the Environment, University of Minnesota, USA; ⁴Department of Applied Economics, University of Minnesota, USA; ⁵Department of Biology, Center for Conservation Biology, Stanford University, USA

05.00 pm Can We Feed the World? An Integrated Framework for Sustainability Assessment of a Production System in the Australian Food Industry

Murilo Pagotto, Anthony Halog

The University of Queensland, Australia

05.10 pm The value of assessing multiple perspectives and transdisciplinary approaches in the transition to a bio-based economy: the prospect for converting mixed food waste into bio-based chemicals

Birgit Brunklaus¹, Frida Røyne¹, Johanna Berlin¹, Emma Rex¹, Johanna Ulmanen¹, Graham Aid²

¹RISE Research Institutes of Sweden, Sweden; ²RAGN-SELLS AB

05.20 pm Discussion panel and Q&A

Schedule

TUESDAY, SEPTEMBER 5 : PLENARY SESSION – KEYNOTE SPEECHES

08.30 am - 10.00 am

COFFEE BREAK AND POSTER SESSION

10.00 am - 10.30 am

PARALLEL SESSIONS

10.30 am - 12.00 pm

LUNCH AND POSTER SESSION

12.00 pm - 02.00 pm

PLENARY SESSION – KEYNOTES SPEECHES

LOCATION: Salle de Conférences 1

08.30 am - 09.00 am **LCA, meet Communication: how getting these two in a room will unlock the value of metrics to spur sustainable change**

Industrial Discussion panel chaired by **Carole Dubois**, *Senior Sustainability Consultant at Quantis*

09.00 am – 09.30 am **Chemistry powers sustainability**

Peter Saling, *Director Sustainability Methods at BASF* and **Christian Krüger**, *Corporate Strategy Department at BASF*

09.30 am – 10.00 am **How can Blockchain support materials traceability, life cycle management, and supply chain transparency?**

Joerg Walden, *CEO at iPoint-systems*



RAW MATERIALS SUPPLY CHAINS IN THE LIGHT OF THE CIRCULAR ECONOMY

LOCATION: Salle de Conférences 1

CHAIRS: Jo Dewulf, *Ghent University*
Johannes Drielsma, *EUROMINES*

- 10.30 am **Coupling simulation of mineral processing with Life Cycle Assessment to assess the environmental impacts of copper production**
Jérôme Bodin¹, Antoine Beylot¹, Jacques Villeneuve¹, Kathy Bru¹, Augustin Chanoine², Pierre-Alexis Duvernois², Françoise Bodenan¹
¹BRGM, France; ²Deloitte, France
- 10.45 am **Allocations and end of life management in LCA: How to decide?**
Morgane Pelote¹, Gaël Fick¹, Mauro Chiappini², Olivier Néel³, Mélanie Pélissard⁴
¹IRT M2P, France; ²ArcelorMittal Global R&D, France; ³Constellium C-TEC, France; ⁴Groupe Renault, France
- 11.00 am **A bi-dimensional assessment to measure the performance of circular economy: a case study of tires end-of-life management**
Geoffrey Lonca^{1,2}, Romain Muggéo³, Sophie Bernard², Manuele Margni^{1,2}
¹CIRAIG, Canada; ²Polytechnique Montréal, Canada; ³Michelin Technological Center, France
- 11.15 am **The Environmental Performance of High Value Recycling for the Fashion Industry: LCA for four case studies**
Theodoros Spathas^{1,2}, Greg Peters², Valentina Prado³
¹T. Spathas Sustainability Consulting, NL; ²Chalmers University of Technology; ³Leiden University
- 11.30 am **Identifying the environmental potential for chemical recycling of waste polymers**
Raoul Meys¹, Leonard Müller¹, Stefan Westhues², Jürgen Klankermayer², André Bardow¹
¹Chair of Technical Thermodynamics, RWTH Aachen University; ²Institute for Technical and Macromolecular Chemistry, RWTH Aachen University
- 11.45 am **Discussion panel and Q&A**

SUSTAINABILITY OF BIO-BASED PRODUCTS: LINKING LIFE CYCLE THINKING WITH STANDARDS, CERTIFICATION AND LABELLING SCHEMES

LOCATION: Salle de Conférences 2

CHAIRS: **Mauro Cordella**, *European Commission, JRC-IPTS*
Oliver Wolf, *European Commission, JRC-IPTS*

- 10.30 am** **Integrating Life Cycle Assessment (LCA) and Eco-design strategies for a sustainable production of bio-based plastics**
Venkateshwaran Venkatachalam, **Sebastian Spierling**, **Hans-Josef Endres**
Institute for Bioplastics and Biocomposites, University of Applied Sciences and Arts, Hannover, Germany
- 10.45 am** **Sustainability assessment of blue biotechnology processes: addressing environmental, social and economic dimensions**
Paula Pérez-López^{1,2}, **Gumersindo Feijoo**¹, **Maria Teresa Moreira**¹
¹Department of Chemical Engineering, University of Santiago de Compostela, Spain; ²MINES ParisTech, PSL Research University, France
- 11.00 am** **Addressing the sustainability of lubricants from an LCA perspective**
Candela Vidal-Abarca Garrido, **Renata Kaps**, **Mauro Cordella**, **Oliver Wolf**
European Commission, Joint Research Centre, Directorate B – Growth and Innovation, Spain
- 11.15 am** **Recommended water scarcity footprint method AWARE: learning from 11 case studies**
Anne-Marie Boulay^{1,2}, **Jean-Baptiste Bayart**³, **Jean-Jacques Beley**⁴, **Markus Berger**⁵, **Carla Caldeira**⁶, **Rolf Frischknecht**⁷, **Yuki Hamilton Kabe**⁸, **Alessandro Manzardo**⁹, **Pablo Tirado**², **Stephan Pfister**¹⁰, **Maly Puerto**¹¹, **Serenella Sala**¹², **Urs Schenker**¹³
¹LIRIDE - University Sherbrooke, Canada; ²CIRAIG - Polytechnique Montreal, Canada; ³Quantis International, Switzerland; ⁴Danone Waters, France; ⁵TU Berlin, Germany; ⁶University of Coimbra, Portugal; ⁷Treeze, Switzerland; ⁸Braskem, Brazil; ⁹Univeristy of Padova, Italy; ¹⁰ETH Zurich, Switzerland; ¹¹SDC-GPWI, SuizAgua Colombia; ¹²JRC, European Commission, Ispra, Italy; ¹³Nestle, Switzerland
- 11.30 am** **Sustainability assessment of the Portuguese forest sector. POSTER SPOTLIGHT**
Ana Dias¹, **Paula Quinteiro**¹, **Tamiris Costa**¹, **Luis Arroja**¹, **Érica Castanheira**², **Rita Garcia**², **Pedro Marques**², **João Malça**², **Fausto Freire**²
¹Centre for Environmental and Marine Studies (CESAM) & Department of Environment and Planning, University of Aveiro, Portugal; ²ADAI-LAETA, Department of Mechanical Engineering, University of Coimbra, Portugal
- 11.35 am** **Discussion panel and Q&A**



IMPLEMENTATION AND MANAGEMENT OF LIFE CYCLE APPROACHES IN BUSINESS – CHALLENGES, OPPORTUNITIES, BUSINESS LEARNINGS AND BEST PRACTICE

LOCATION: Salle de Conférences de Presse

CHAIRS: **Lena Landström**, *Vattenfall and Swedish Life Cycle Center*
Sara Palander, *Chalmers University of Technology and Swedish Life Cycle Center*

10.30 am **Informing Corporate Sustainability strategies with Life Cycle Assessment: the Procter & Gamble footprint**

Gert Van Hoof, Chris Smith, Jack Mcaneny, Julie Desylva

Procter & Gamble, Belgium

10.45 am **Business strategies to improve the environmental performances: life cycle approaches and tools in Aptar Italia**

Michele Del Grosso^{1,2}, Alberto Simboli², Nando Cutarella¹, Andrea Raggi²

¹Aptar Italia spa, Italy; ²Dept of Economic Studies, University G. D'Annunzio - Pescara, Italy

11.00 am **Developing common rules to quantify the Organisation Environmental Footprint in the retail sector with support of the Chain-OEF approach**

Hanna Schreiber¹, Sebastien Humbert², Steven van Hemelryck³, Romain Poivet⁴

¹Environment Agency Austria (EAA), Austria; ²Quantis, Switzerland; ³Colruyt Group, Belgium; ⁴ADEME, France

11.15 am **Integration of Life Cycle Management in decision making: a monetisation approach.**

Max Sonnen¹, Klas Hallberg²

¹Ecomatters B.V., Netherlands; ²AkzoNobel Sustainability, Sweden

11.30 am **How human brains interpret the environmental information on the products? - a Polish case of use neuro-marketing tools to assess a communication effectiveness of life cycle based environmental labelling**

Barbara Borusiak¹, Ewa Jerzyk¹, Przemyslaw Kurczewski², Anna Lewandowska¹, Jagna Sobierajewicz³, Joanna Witczak¹, Christian Dierks⁴, Pasquale Giungato⁵, Sangwon Suh⁶

¹Poznan University of Economics and Business, Poland; ²Poznan University of Technology, Poland; ³Adam Mickiewicz University in Poznan, Poland; ⁴Fraunhofer-Institut für Silicatforschung; ⁵University of Bari "Aldo Moro", Taranto district; ⁶Bren School of Environmental Science and Management, University of California

11.45 am **Discussion panel and Q&A**

USING LCM TO CREATE SHARED VALUE THROUGH HEALTHCARE AND PHARMACEUTICAL SUPPLY CHAINS

LOCATION: Salle D

CHAIRS: **Wouter De Soete**, *Ghent University*
Keith Moore, *Sustainable Logic*

10.30 am Safe and harmless by design concept for nanoparticles in medical applications

Peter Weyell¹, Dana Cialla-May², Joachim Clement³, Dagmar Fischer¹, Cordula Grüttner⁴, Ingrid Hilger⁵, Heinz-Dieter Kurland⁶, Frank Müller⁶, Anne Vornberger⁷, Christian Bergemann⁸, Dana Kralisch¹

¹Friedrich-Schiller-University, Department of Pharmaceutical Technology, Germany; ²Leibniz Institute of Photonic Technology (IPHT), Germany; ³Haematology and Medical Oncology, Jena University Hospital, Germany; ⁴micromod Partikeltechnologie GmbH, Germany; ⁵Department of Radiology, Jena University Hospital, Germany; ⁶Friedrich-Schiller-University Jena, Germany; ⁷Fraunhofer Institute for Ceramic Technologies and Systems (IKTS), Germany; ⁸chemicell GmbH, Germany

10.45 am Human Health benefits and burdens of the schizophrenia Health Care Pathway in Belgium: a holistic approach towards paliperidone palmitate long-acting injectable antipsychotic

Sam Debaveye¹, Bert Heirman², Shane Kavanagh³, Delphine De Smedt⁴, Jo Dewulf¹

¹Research Group Environmental Organic Chemistry and Technology (EnVOC), Faculty of Bioscience Engineering, Ghent University, Belgium; ²Johnson & Johnson EHS&S, Janssen Pharmaceutica NV, Belgium; ³Johnson & Johnson Health Economics, Janssen Pharmaceutica NV, Belgium; ⁴Interfaculty Centre for Health Economic Research, Ghent University, Belgium

11.00 am LCM in the pharmaceutical industry using an applicable and robust LCA-based environmental sustainability assessment approach

Marc-William Siegert, Yasmine Emara, **Annekatriin Lehmann**, Matthias Finkbeiner

Technische Universität Berlin, Germany



- 11.15 am **Establishing LCA in the healthcare sector**
Nanja Hedal Kløverpris
Novo Nordisk A/S, Denmark
- 11.30 am **An open-minded collaboration across public and private healthcare to facilitate the journey towards good health and wellbeing on a finite planet: the Coalition for Sustainable Pharmaceuticals and Medical devices (CSPM)**
Sonia Roschnik, Keith Moore
CSPM, UK
- 11.45 am **Discussion panel and Q&A**

LCM AND CIRCULAR ECONOMY CHALLENGES FOR THE TEXTILE SECTOR

LOCATION: Salle E

CHAIRS: Keith James, *WRAP*
Julian Lings, *The North Face*

10.30 am Introduction by session chairs

10.45 am Calculating the toxicity footprint of Swedish clothing consumption

Sandra Roos¹, Rickard Arvidsson², Christina Jönsson¹

¹Swerea IVF, Sweden; ²Chalmers University of Technology, Sweden

11.00 am Life Cycle Assessment of Organic & BCI Cotton: A Comparative Study of Cotton Cultivation Practices in India

Praganesh Shah¹, Abhishek Bansal¹, Rajesh Singh²

¹Arvind Limited; ²thinkstep Sustainability Solutions Pvt. Ltd., India

11.15 am Choosing a rain coating – life cycle assessment to guide substitution of hazardous durable water repellent chemistry

Hanna Holmquist¹, Sandra Roos^{1,2}, Christina Jönsson², Greg Peters¹

¹Chalmers University of Technology, Sweden; ²Swerea IVF AB, Sweden

11.30 am Recycling textile waste into secondary material: Experience from the innovative RESYNTEX project using circular economy concepts

Violaine Magaud¹, Arnaud Dauriat¹, Pailak Mzikian², Vittoria Troppenz², Sarra Harbi¹

¹Quantis; ²SOEX Textil-Vermarktungsgesellschaft

11.45 am Discussion panel and Q&A



Schedule

TUESDAY, SEPTEMBER 5 : PARALLEL SESSIONS

02.00 pm - 03.30 pm

COFFEE BREAK AND POSTER SESSION

03.30 pm - 04.00 pm

BEST PRACTICES FOR SUSTAINABLE DESIGN: INTEGRATING LCM INTO THE INNOVATION PROCESSES

SESSION STARTS AT 01.15 PM

LOCATION: Salle de Conférences 1

CHAIRS: Daniela Pigosso, *Technical University of Denmark*
Tammy Ayers, *Steelcase*

01.15 pm Developing a Packaging Eco-Design Process to Achieve Danone's Sustainability Commitments

Benoit Piette¹, Jean-Baptiste Bayart²

¹Danone; ²Quantis, France

01.30 pm Sustainability performance evaluation for selecting the Best Recycling Pathway During its Design Phase

Guilhem Grimaud^{1,2}, Nicolas Perry², Bertrand Laratte^{2,3}

¹MTB Recycling, France; ²Arts & Métiers ParisTech, I2M, France; ³APESA, France

01.45 pm LCA of state-of-the-art joining technologies

Erasmo Cadena, Léo Staccioli, Jose Gutierrez, Antonio Barona

VERTECH GROUP, France

02.00 pm Innovation in construction materials through LCM: a concrete case

Manuela Ojan

HeidelbergCement, Germany

02.15 pm Driving sustainable innovation in FMCG by democratising lifecycle assessments

Eveline Astrid de Bruin, Thejas Ramakrishnan, Duncan Haughey, Ankit Jaspal, Severine Mongauze, Louis Lindenberg, Henry King, Gavin Warner

Unilever, Netherlands



- 02.30 pm** **Screening LCAs to guide Process Development and Business Models**
Yuki Hamilton Onda Kabe, Luiz Gustavo Ortega
Braskem, Brazil
- 02.45 pm** **Sustainability assessment through the innovation funnel**
Ana Morao, Ivana Dencic, Diana Visser
Corbion, Netherlands
- 03.00 pm** **Turning sustainability into a catalyst for innovation**
Anne-Laure Hettinger¹, Patricia Cortijo²
¹ArcelorMittal, France; ²Utopies, France
- 03.15 pm** **Implementing LCM all along the supply chain: from compliance to collaborative value creation**
Aubin Roy¹, Naeem Adibi¹, Vanessa Pasquet¹, Stéphane Morel²
¹Plateforme [avniR] by cd2e, France, ²Renault, France

BIO-BASED MATERIALS WITHIN THE CIRCULAR ECONOMY: OPPORTUNITIES AND CHALLENGES?

LOCATION: Salle de Conférences 2

CHAIRS: **Birgit Brunklaus**, *SP Technical Research Institute of Sweden*
Ellen Riise, *SCA Hygien products*

02.00 pm **Wood products circularity and the biodiversity challenge**

Samuel Vionnet¹, Christian Bauer², David Cockburn³, Bengt Brunberg⁴, Martha Stevenson⁵

¹Valuing Nature; ²SIG; ³Tetra Pak; ⁴BillerudKorsnäs; ⁵WWF – US

02.15 pm **Bioeconomy contribution to Circular Economy**

Serenella Sala

European Commission - Joint Research Centre, Italy

02.30 pm **Assessing the availability of bio-based materials in product design**

Vanessa Bach, Markus Berger, Natalia Finogenova, Matthias Finkbeiner

Technische Universität Berlin, FG SEE, Germany

02.45 pm **Integrated Market Orientation in Technical R&D Processes - Opportunities and Challenges for environmentally Friendly Bio-Based Resins**

Miriam Lettner¹, Daniela Greiner², Tobias Stern³, Franziska Hesser¹

¹Wood K plus, Austria; ²University of Natural Resources and Life Sciences Vienna, Austria; ³University of Graz, Austria

03.00 pm **The sustainability of bio-based plastics – quantifying environmental and socio-economic aspects of a computer mouse for a circular economy**

Sebastian Spierling¹, Eva Knüpffer², Venkateshwaran Venkatachalam¹, Marina Mudersbach¹, Hannah Behnsen¹, Hannes Krieg², Stefan Albrecht², Hans-Josef Endres¹

¹Institute for Bioplastics and Biocomposites, University of Applied Sciences and Arts Hannover, Germany;

²Fraunhofer Institute for Building Physics IBP, Department Life Cycle Engineering (GaBi), Germany

03.15 pm **Discussion panel and Q&A**



DISCUSSION PANEL – THE ROLE OF LCA AND LCM NETWORKS

LOCATION: Salle de Conférences de Presse

CHAIRS: **Philippe Osset**, *SCORELCA and Solinnen*
Masahiko Hirao, *Green Purchasing Network Japan and University of Tokyo*

The objective of the session is to discuss the position and evaluate the scope and activity of different LCM networks, and highlight the link between academic research and final users needs (Industries and Policy makers). After a brief introduction by the session chairs to attest on the importance of networks for the LCM community, four panelists will demonstrate concrete actions of different networks, making the link with different LCM thematic:

- **Industrial needs and expectations,**

Panelist: Anne Prieur-Vernat – SCORELCA and Engie

- **How far LCM allow to address the full products value chain,**

Panelist: Fernando Chalaka, General Manager – Sustainability at MAS Fabrics (Pvt) Ltd

- **LCM methods and tools,**

Panelist: Rolf Frischknecht – Board of the Swiss LCA discussion forum and Treeze

- **Footprints and other communication tools.**

Panelist: Masaharu Motoshita – Japan National Institute of Advanced Industrial Science and Technology

The presentations by panelists will be followed by a discussion and interactions with the audience.

**WORKSHOP - REDUCING THE ENVIRONMENTAL IMPACT OF HEALTHCARE: A TRAINING
WORKSHOP ON CALCULATING THE GHG EMISSIONS OF PHARMACEUTICALS AND MEDICAL
DEVICES**

LOCATION: Salle D

CHAIRS: Simon Aumonier, *ERM*

In order to re-design healthcare systems to be more sustainable, their full environmental impacts must be better understood. Existing and developing tools enable environmental appraisals of healthcare products and pathways to be undertaken more easily and consistently. This training session will review tools and guidance for calculating the life cycle environmental impacts of pharmaceuticals and medical devices and the pathways in which they are used, show how these can be applied and provide practical guidance on how to use the results of appraisals in decision making.



WHICH TOXICITY QUESTION CAN BE ADDRESSED IN LCM? LATEST METHOD DEVELOPMENTS AND EXPERIENCE

LOCATION: Salle E

CHAIRS: Quentin De Hulst, *BASF*
Ralph Rosenbaum, *IRSTEA*

02.00 pm **Freshwater ecotoxicity as an environmental impact category in LCA – Findings of an ECETOC taskforce**

Nikolaj Otte¹, Christopher Cooper², Robert Hoke³, Henry King⁴, Jacques Lharidon⁵, Frederic Palais⁶, Florian Schmidt⁷, Diederik Schowanek⁸, Alan Poole⁹

¹Henkel AG & Co. KGaA, Germany; ²International Zinc Association; ³DuPont de Nemours; ⁴Unilever; ⁵L'Oréal Research & Innovation; ⁶Solvay; ⁷BASF; ⁸Procter & Gamble; ⁹ECETOC

02.15 pm **Human health impact assessment of indoor pollutants with USEtox 2.0 in LCA**

Ralph K. Rosenbaum

Irstea, France

02.30 pm **A method for estimating direct human exposure toxicity potential impacts in product declarations – ProScale – complementary to PEF impact assessment methods**

Tomas Rydberg¹, Quentin de Hulst², Jenny Lexén¹, Carina Loh Lindholm¹, Elin Belleza¹, Peter Saling², Pierre Coërs³, Erik Van Miert³, Alain Wathelet³, Truus Tiemersma⁴, Xandra Weinbeck⁴, Christos Karafilidis⁵, Andreas Bednarz⁵, Paul Ashford⁶, Paul Dornan⁶, Martin Gloeckner⁷, Nicole Amann⁸

¹IVL Swedish Environmental Research Institute, Sweden; ²BASF SE, Germany; ³Solvay SA, Belgium; ⁴DSM Engineering Plastics BV, Netherlands; ⁵Covestro Deutschland AG, Germany; ⁶Anthesis Group, UK; ⁷Deutsche Bauchemie eV, Germany; ⁸Wacher Chemie AG, Germany

02.45 pm **Application of ProScale – a life-cycle oriented method to assess human toxicity potentials of product systems**

Peter Saling, Quentin De Hulst, Martin Glöckner, Tomas Rydberg, Jenny Lexen

BASF SE, Germany

03.00 pm **Discussion panel and Q&A**



Schedule

TUESDAY, SEPTEMBER 5 : PARALLEL SESSIONS

04.00 pm - 05.30 pm

DISCUSSION PANEL - LCM APPROACHES TO SUPPORT CIRCULAR ECONOMY

LOCATION: Salle de Conférences 1

CHAIRS: **Sébastien Zinck**, *Luxembourg Institute of Science and Technology*
Anne-Christine Ayed, *Tarkett*

Circular Economy (CE) is a concept that has gained some significant traction for some years, both on the policy and the industrial levels. It helps further structure Sustainability strategies and initiatives. It can be described as an organizational principle which aims at evolving from the current linear economic model – where resources are extracted, manufactured, consumed and wasted – to an economic model which values resource efficiency at every stage of the value chain and enables the biodiversity protection, as well as a development suitable for the well-being of individuals.

From the definition of a CE strategy to the implementation of action plans, as well as for the development of new business models in this field, processes, indicators and tools are necessary to support decision-making. LCM approaches and expertise are thus suitable to ensure the Sustainability performance of decision-making.

In this session panel, speakers from companies, institutions and academia will present some examples of LCM approaches (e.g. impact and risk assessment methods, eco-design, recycling, etc.), but also collaborative tools, in support of CE objectives.

Panelists:

- **Stéphane Morel** – Renault
- **Megann Head** – Steelcase
- **Monia Niero** – Technical University of Denmark
- **Magnus Gislev** – European Commission, DG Growth
- **Friedrich-W. Wellmer** – Retired president of the Federal German Geological Survey BGR

Presentations by panelists will be followed by a discussion and interactions with the audience.



SUSTAINABLE DESIGN OF COMPLEX SYSTEMS, PRODUCTS AND SERVICES WITH USERS INTEGRATION INTO DESIGN

LOCATION: Salle de Conférences 2

CHAIRS: **Nicolas Perry**, *ENSAM – I2M*
Julien Garcia, *Groupe PSA*

04.00 pm **PODeST - How sustainability can become a parameter for process optimization and development**
Florian Böss, **Martin Kirchner**, **Bernd Schlüter**
Evonik Technology & Infrastructure GmbH, Germany

04.15 pm **Implementation of environmental considerations in the innovation process of complex systems: Groupe PSA case study**
Julien Garcia, **Pierre Tonnelier**, **Sophie Richet**
Groupe PSA, France

04.30 pm **Sustainability of design for circularity: The importance of design choices and user behavior for the environmental performance of the furniture industry**
Emma Rex, **Frida Røyne**, **Lisa Bolin**, **Ann-Charlotte Mellqvist**
RISE Research Institutes of Sweden, Sweden

04.45 pm **Life Cycle Assessment as a Decision Making Tool for Designing Products and Engineering Systems for Circular Economy**
Kavitha Shanmugam¹, **Venkata Krishna Kumar Upadhyayula**¹, **Mats Tysklind**¹, **Venkata Ramana Gadhamshetty**²
¹Umea University, Umea, Sweden; ²South Dakota School of Mines and Technology, Rapid City, SD, USA

05.00 pm **What can LCA learn from service design – User integration?**
Birgit Brunklaus¹, **Johanna Berlin**¹, **Petter Falk**²
¹RISE Research Institutes of Sweden, Energy and circular economy; ²RISE Research Institutes of Sweden, Service Labs

05.15 pm **Designing products and services by considering the meaning-based perspective of potential users on the implications of products and services for sustainability**
Gregor Waltersdorfer¹, **Kilian Gericke**¹, **Lucienne Blessing**²
¹University of Luxembourg, Luxembourg; ²Singapore University of Technology and Design

IMPROVING INTERPRETATION, PRESENTATION AND VISUALISATION OF LCA STUDIES FOR DECISION MAKING SUPPORT

LOCATION: Salle de Conférences de Presse

CHAIRS: **Serenella Sala**, *European Commission – Joint Research Centre*
Jessica Andreasson, *Volvo Car Group*

04.00 pm Use of LCA results to support decision-making in process industries

Hanna Pihkola¹, **Tiina Pajula¹**, **Carlos Tapia²**, **Michael Ritthoff³**, **Peter Saling⁴**, **Ywann Penru⁵**, **Sari Kuusisto⁶**, **Annamari Enström⁶**

¹VTT Technical Research Centre of Finland, Finland; ²Tecnalia Research and Innovation; ³Wuppertal Institute for Climate, Environment and Energy; ⁴BASF SE; ⁵SUEZ; ⁶Neste Corporation

04.15 pm Life cycle management in industry – supporting business with life cycle based assessments

Andreas Bednar¹, **Julia Beier²**, **Thomas Grünenwald³**, **Birgit Himmelreich¹**, **Baerbel Hundt⁴**, **Florian Ansgar Jaeger⁵**, **Martin Kirchner⁶**, **Stephan Krinke⁷**, **Ulla Létinois⁸**, **Christina Merz⁶**, **Lisa Mohr⁹**, **Dave Morris⁸**, **Nikolaj Otte¹⁰**, **Gerald Rebitzer¹¹**, **Peter Saling³**, **Urs Schenker¹²**, **Diederik Schowanek¹³**, **Gerd Vollmer⁹**, **Alain Wathelet¹⁴**, **Niklas von der Assen¹⁵**

¹Covestro Deutschland AG; ²Beiersdorf AG; ³BASF SE, Germany; ⁴Bayer AG; ⁵Siemens AG; ⁶Evonik Technology & Infrastructure GmbH; ⁷Volkswagen AG; ⁸DSM; ⁹thyssenkrupp Steel Europe AG; ¹⁰Henkel AG & Co. KGaA; ¹¹Amcor; ¹²Nestlé Research Center; ¹³Procter & Gamble; ¹⁴Solvay; ¹⁵Merck KGaA.

04.30 pm Visualizing the effects of parameter variability on comparative LCA results

Céline Alexandre, **Elisabeth van Overbeke**, **Maxime Dupriez**, **Johan Lhottelier**, **Bernard De Caevel**
RDC Environment, Belgium

04.45 pm Tailored for decision – Knowing your target group prior to adaptation

Emma Rex¹, **Niklas Fernqvist¹**, **Sven-Olof Ryding²**, **Klas Hallberg³**, **Emma Ringström³**, **Lena Landström⁴**, **Jessica Andreasson⁵**, **Anna Widerberg⁵**, **Lisbeth Dahllöf⁶**, **Rebecka Hallén Jorquera⁷**

¹RISE Research Institutes of Sweden; ²IVL Swedish Environmental Research Institute; ³Akzo Nobel; ⁴Vattenfall; ⁵Volvo Cars; ⁶Volvo Group; ⁷Swedish Life Cycle Center

05.00 pm Systematic hotspots analysis in LCA supported by novel graphical and data quality visualisations

Cristina Rodríguez, **Andreas Ciroth**, **Sebastian Greve**
GreenDelta, Germany

05.15 pm Decision support for life cycle design of food and packaging

Naoki Yokokawa, **Hirokazu Sugiyama**, **Masahiko Hirao**
The University of Tokyo, Japan



DISCUSSION PANEL - INTEGRATION IS KEY – HOW TO CREATE BUSINESS VALUE FROM LCA AND AN INTEGRATED SUSTAINABILITY APPROACH

LOCATION: Salle D

CHAIRS: *Evonik and Thinkstep*

This panel discussion will focus on the future of sustainability assessment and management and how to create business value from an integrated approach. The influence of current methods and initiatives such as PEF, Circular Economy, EPD and building standards in the context of potential for improving LCA/sustainability and business relevance will be addressed.

The panel discussion will show how companies address

- upcoming challenges including methodological and data aspects,
- future applications of LCA in the context of wider sustainability, focusing on integration with non-LCA data (e.g. compliance, commercial, social),
- accessibility of knowledge and tools for a wide range of user groups, and
- the on-going debate on appropriate communication to different target groups.

The panelists will provide insight into company specific integrated sustainability approaches, how they address different aspects of an integrated approach, drivers doing so and how to create business value at the same time.

This will not only enable entrants to this field to make the most of available and upcoming information but also provide insights into how to address the complex challenges ahead of us.

It will be a moderated session with significant involvement of the audience to ensure the maximum value for all participants.

- **Stephan Krinke - Volkswagen AG**
- **Dave Morris - DSM**
- **Markus Frank - BASF SE**
- **Michael Binder - Evonik Technology & Infrastructure GmbH**
- *Speaker TBC*

**IMPROVING THE LIFE CYCLE PERFORMANCE OF CHEMICAL PRODUCTS AND MATERIALS
THROUGH DATA EXCHANGE ALONG THE VALUE CHAIN**

LOCATION: Salle E

CHAIRS: **Guido Sonnemann**, *University of Bordeaux*
Carmen Alvarado, *AkzoNobel*

04.00 pm Rapid Estimation of Life Cycle Inventory

**Raymond L. Smith¹, David E. Meyer¹, Gerardo J. Ruiz-Mercado¹, Vinit K. Mittal², Michael A. Gonzalez¹,
John P. Abraham¹, William M. Barrett¹, Paul M. Randall¹, Briana Niblick¹**

*¹Office of Research and Development, National Risk Management Research Laboratory, U.S. Environmental
Protection Agency, Cincinnati, USA; ²Oak Ridge Institute for Science and Education (ORISE), Cincinnati, USA*

04.15 pm Current models and approaches for data matching and modeling of chemical production

Gregor Wernet, Tereza Levova, Guillaume Bourgault

ecoinvent, Switzerland

04.30 pm PlasticsEurope experience in managing information along the value chain for RA and LCA

Guy Castelan¹, Quentin De Hults²

¹PlasticsEurope, France; ²BASF

**04.45 pm Biomass Balance: an innovative and complementary approach for using biomass in the
chemicals industry**

Christian Krüger, Andreas Kicherer, Claudius Kormann, Nikolaus Raupp

BASF SE, Germany

05.00 pm Sustainability at Teijin: Customer Benefit Model and Case Study Tires

Heidi Beers¹, Harrie Bosman¹, Marjan Kamer¹, Pau Huguet Ferran²

¹Teijin Aramid, Netherlands; ²Ecomatters, Netherlands

05.15 pm Life Cycle Assessment of Acrylic Fiber and Garment in Thailand

Jagadish Barik¹, Rajesh Singh²

¹Thai Acrylic Fiber Co. Ltd., Thailand (Aditya Birla Group); ²thinkstep Sustainability Solutions Pvt. Ltd., India



Schedule

WEDNESDAY, SEPTEMBER 6 : PLENARY SESSION – KEYNOTE SPEECHES

09.00 am - 10.00 am

COFFEE BREAK AND POSTER SESSION

10.00 am - 10.30 am

PARALLEL SESSIONS

10.30 am - 12.00 pm

LUNCH AND POSTER SESSION

12.00 pm - 02.00 pm

PLENARY SESSION – KEYNOTES SPEECHES

LOCATION: Salle de Conférences 1

- 09.00 am - 09.15 am** **Implementing Life Cycle Thinking in the Business at Nestlé**
Urs Schenker, Sustainability and Novel Packaging - Nestlé
- 09.15 am - 09.45 am** **Metrics for Advancing One Planet Prosperity**
Mathis Wackernagel, CEO – Global Footprint Network
- 09.45 am - 10.00 am** **The EIB's role in Financing the Transition to a Circular Economy**
Werner Schmidt, Director - European Investment Bank



INTEGRATING THE CONCEPT OF PLANETARY BOUNDARIES INTO DECISION MAKING PROCESSES

LOCATION: Salle de Conférences 1

CHAIRS: **Marcial Vargas-Gonzalez**, *Quantis*
Michal Kulak, *Unilever*

- 10.30 am** Sectoral pathways to low carbon economy shall drive transition planning and companies' decision processes: the key learnings from Assessing low Carbon Transition Initiative's pilot phase.
Romain Poivet¹, Pedro Faria², Esther Stoakes², John Hekman², Lukas Brochard², Thomas Gourdon¹, Edouard Fourdrin¹
¹ADEME, France; ²CDP, England
- 10.45 am** Defining Science-Based Targets for an agri-food company : a case study
Charlotte Bande¹, Edgar Van de Brug², Marcial Vargas-Gonzalez¹
¹Quantis, France; ²Ecofys
- 11.00 am** One Planet Thinking: Towards companies that perform within the earth's regenerative capacity
Annemarie Kerkhof¹, Elmer De Boer², Gerben Meijer², Jeroen Scheepmaker¹, Kornelis Blok¹
¹Ecofys, Netherlands; ²Eneco, Netherlands
- 11.15 am** Integrating Planetary Boundaries into a Life Cycle Impact Assessment methodology for Business Decision-Making
Anders Bjørn¹, Sarah Sim², Henry King², Julie Clavreul², Carina Mueller², Michal Kulak², Cecile Bulle³, Manuele Margni¹
¹Polytechnique Montréal, Canada; ²Unilever Safety and Environmental Assurance Centre, UK; ³ESG UQÀM, Canada
- 11.30 am** Operationalization of Sustainable Development Goals Using a Planetary Boundaries-Based Life-Cycle Assessment Framework
Chanjief Chandrakumar^{1,3}, Sarah J. McLaren^{2,3}
¹School of Engineering and Advanced Technology, Massey University, New Zealand; ²Institute of Agriculture and Environment, Massey University, New Zealand; ³New Zealand Life Cycle Management Centre, c/o Massey University, New Zealand
- 11.45 am** Discussion panel and Q&A

TURNING THE LENS AROUND: LCA SUCCESS STORIES “OUTSIDE-IN”

LOCATION: Salle de Conférences 2

CHAIRS: Eric Mieras, *PRé Sustainability*
Alain Wathelet, *Solvay*

10.30 am Internalizing Life Cycle Thinking in Business Strategy through Amalgamation of Life Cycle Knowledge with Strategy Development Tools

Sanjeevan Bajaj

Federation of Indian Chambers of Commerce and Industry, India

10.45 am Integrated product development at Nestlé

Namy Espinoza-Orias, Karen Cooper

Nestlé Research Center, Switzerland

11.00 am Innovative Partnership to Promote Credible and Sustainable Bio-based Materials Through the Value Chain

Pawin Boonyaporn

Advanced Biochemical (Thailand) Co., Ltd.

11.15 am The City Performance Tool - How cities use LCM based decision support

Jens-Christian Holst¹, Klaus Heidinger², Katrin Müller¹, Florian Jaeger¹

¹Siemens AG, Germany; ²Siemens Austria, Austria

11.30 am Implementing LCM all along the supply chain: from compliance to collaborative value creation

Aubin Roy¹, Naeem Adibi¹, Vanessa Pasquet¹, Stéphane Morel²

¹Plateforme [avnir] by cd2e, France; ²Renault, France

11.45 am Discussion panel and Q&A



FINANCING INNOVATION AND CIRCULAR ECONOMY

LOCATION: Salle de Conférences de Presse

CHAIRS: Shirin Wheeler, *European Investment Bank*

The circular economy (CE) can be described as a green giant on the rise, on account of its enormous potential to unleash sustainable growth and job-creation as well as the increasing traction it is gaining in the business world. Many businesses in different sectors have already started to tap into this potential, displaying a large variety of innovative business models. However, the transition to a CE is no certain success and needs to tackle a number of hurdles. Ensuring access to finance for circular businesses, throughout their different growth phases, is one of them. The European Investment Bank (EIB), in close partnership with the European Commission (EC), national promotional banks and actors in the European finance sector, is already playing an important role in bridging existing financing gaps and catalysing investments into the CE.

The break-out session on “Financing Innovation and the Circular Economy” is organized by the EIB and features a series of short presentations by experts of the EIB and EIB partner institutions (EC, Rabobank), followed by a Q&A session in which the workshop participants can direct their questions to the expert panel.

More specifically, this session is intended to generate awareness and inform potential project promoters and other interested participants about:

- the EU's general policy and the available funding sources and instruments for RDI and CE
- the EIB's role in supporting the transition to a Circular Economy (CE), eligibility criteria and types of projects financed by the EIB
- the role of EU backed risk-sharing vehicles managed by the EIB (EFSI and InnovFin), the targeted sectors and specific instruments
- the role of the Circular Economy Finance Support Platform launched jointly by the EC and the EIB to improve the access to finance of CE projects
- the role of the EIB's advisory services in bringing innovative CE projects and business models closer to finance
- the way the EIB collaborates with financial intermediaries to improve access-to-finance for smaller projects by SMEs and small MidCaps in specific sectors/thematic areas
- the particular view of an EIB partner bank and financial intermediary on the assessment of and lending to smaller CE projects by SMEs

Speakers: Lana Žutelija - Circular Economy Policy Officer - European Commission, DG Environment
Liesbet Goovaerts - Specialist on Innovative Industries – European Investment Bank
Christian Schempp - Specialist on Circular Economy – European Investment Bank
Laura Busato - Innovation Finance Advisor – European Investment Bank
Alexander Smits - Loan Officer, Intermediary Lending – European Investment Bank
Richard Piechocki - Sustainable Business Strategist – Rabobank (NL)

GREENING AGRI-FOOD VALUE CHAINS IN EMERGING ECONOMIES

LOCATION: Salle D

CHAIRS: **Matthias Stucki**, *Zurich University of Applied Sciences*
Anél Blignaut, *South African Fruit and Wine Industry Initiative Confronting Climate Change*

10.30 am **Contract Farming – A Tool for Sustainable or Unsustainable Agri-Food Value Chain Management? Case Study on Sustainability Assessment of Pineapple under Contract Farming in Prachuapkhirikhan Province, Thailand**

Pornthip Pongpunwittaya, **Prapasongsa Trakarn**

Mahidol University, Thailand

10.45 am **Assessment of Cleantech Options to Mitigate Environmental Impacts of South African Dairy and Maize farming**

Regula Lisa Keller¹, **Lea Eymann**¹, **Sarah Wettstein**¹, **Harro von Blottnitz**², **Deborah Scharfy**¹, **Matthias Stucki**¹

¹Zurich University of Applied Sciences ZHAW, Switzerland; ²University of Capetown, ZA-7701 Rondebosch

11.00 am **The Water Footprint of South African meat production – A Case Study of the Commercial Pork Value Chain**

Valentina Russo, **Masoi Johannes Mhlophe**, **Molefi Daniel Thekiso**, **Harro von Blottnitz**

University of Cape Town, South Africa

11.15 am **Carbon and water footprint of hydrous ethanol from Brazilian sugarcane produced by Odebrecht Agroindustrial**

Carlos Sodré¹, **Mônica Alcântara**¹, **Matheus Fernandes**², **Beatriz Cristina Koszka Kiss**²

¹Odebrecht Agroindustrial; ²Center for Sustainability Studies (FGVces) of the São Paulo School of Business Administration, Getulio Vargas Foundation (FGV EAESP)

11.30 am **How to embed land use change / deforestation-related emissions from corporate supply chains into corporate footprints and corporate GHG targets in an accurate and credible manner**

Michele Zollinger, **Jon Dettling**, **Vincent Rossi**, **Sebastien Humbert**, **Jean-Baptiste Bayart**

Quantis

11.45 am **Discussion panel and Q&A**



TRENDS IN LIFE CYCLE THINKING IN REGIONAL DEVELOPMENT: METHODOLOGICAL ADVANCES AND CHALLENGES FOR THE FUTURE

LOCATION: Salle E

CHAIRS: **Ian Vazquez Rowe**, *Pontificia Universidad Católica del Perú*
Valentina Prado, *Leiden University*

- 10.30 am **LCM progress within South African businesses**
Zubeida Zwavel (Tassiem)
ZZwavel Environmental Consulting, South Africa
- 10.45 am **Assessing social hotspots and opportunities of A wood-based Product from a German Bioeconomy region**
Anke Siebert¹, Sinéad O’Keeffe¹, Daniela Thrän^{1,2}, Alberto Bezama¹
¹Helmholtz Centre for Environmental Research UFZ, Germany; ²Deutsches Biomasseforschungszentrum (DBFZ), Germany
- 11.00 am **Communicating LCA results in Brazil: case studies using the carbon and water footprint approaches**
Beatriz Cristina Koszka Kiss¹, Luciana Stocco Betiol², Lígia Ramos¹
¹Center for Sustainability Studies (FGVces) of the São Paulo School of Business Administration, Getulio Vargas Foundation (FGV EAESP); ²São Paulo School of Business Administration from Getulio Vargas Foundation (FGV EAESP), Brazil
- 11.15 am **Applying LCA to estimate development energy needs: The cases of India and Brazil**
Narasimha D Rao, Alessio Mastrucci, Jihoon Min
International Institute for Applied Systems Analysis, Austria
- 11.30 am **Material Footprint of Thailand Based on Input-Output Analysis**
Viganda Varabuntoonvit¹, Kultida Kunanuntakij¹, Thumrongrut Mungcharoen²
¹Kasetsart University, Thailand; ²National Science and Technology Development Agency, Thailand
- 11.45 am **Prospective Water Supply Mix (P-WSmix) in LCA to support regional adaptation strategies to future water availability and requirements**
Susana Leão^{1,2}, Philippe Roux¹, Montserrat Núñez¹, Eléonore Loiseau¹, Guillaume Junqua², Ralph K Rosenbaum¹
¹Irstea, UMR ITAP, ELSA Research group & ELSA-PACT-Industrial Chair for Environmental and Social Sustainability Assessment; ²Ecole des mines d’Alès (Centre LGEI)

Schedule

WEDNESDAY, SEPTEMBER 6 : PARALLEL SESSIONS

02.00 pm - 03.30 pm

DISCUSSION PANEL – ASSESSMENT OF EXTERNALITIES: MONETISATION AND SOCIAL LCA

LOCATION: Salle de Conférences 1

CHAIRS: **Marzia Traverso**, *RWTH Aachen*
Stéphane Morel, *Renault*

Social and environmental impacts occur along the product life cycle and are measured by different indicators. To assess the sustainability performance of a product life cycle we need to assess social, economic and environmental impacts.

If on one hand, the social life cycle assessment (S-LCA) has even not yet reached a scientific agreement on a set of indicators that should be used, on the other hand, several implementations have been already made at companies and product levels.

The results of a sustainability assessment are often rendered through several indicators and their interpretation and of the relative trade-off is often a big challenge. A possibility to interpret is monetizing all impacts.

In the discussion panel the current state of the art in the implementations together with challenges and potentials of those methodologies are going to be discussed with our panellist.

After a short presentation of each panellist (10 min each) the following points are going to be discussed together with further points introduced by the audience:

- What about the social LCA current implementation?
- How far are we from a standardization of S-LCA?
- What about the Monetization of environmental externalities? What do you think of methodologies such as Natural Capital Protocol?
- What about the monetization of S-LCA results? What do you think of tool such as Social Capital Protocol?

Speakers to be confirmed.



FROM PHD TO APPS !

LOCATION: Salle de Conférences 2

CHAIRS: Matthias Finkbeiner, *TU Berlin*
Lisa Mohr, *Thyssenkrupp Steel Europe AG*

This session is dedicated to highlighting the potential concrete valorisation of the research outcomes presented on posters by PhD students. Participants will prepare a 5 min presentation of their work targeting the question: “how could my work be used/transferred to users (policy or industry)?”. The form of the presentation is free. The idea is to think of ways to bring research to the market (as a tool, product or service) after a PhD. The three best ones will be awarded with prizes.

**Can LCA tool alone conduct environmental performances of circular economy in construction sector?
A case study of cement concrete demolition waste management**

Marjan Mousavi - *Université de Nantes, France*

Considering space debris related impacts into the LCA framework

Maury Thibaut - *University of Bordeaux, France and Airbus Safran Launchers, France*

Combination of material flow analysis and life cycle assessment for the evaluation of the plastics packaging waste management system in Austria.

Emile Van Eygen - *TU Wien, Austria*

Do Tire Studs in Cars Save or Take Lives? A Life Cycle Assessment on Human Health Impacts

Anna Furberg - *Chalmers University of Technology, Sweden*

Plastic End-of-Life: Managing material choice without another impact category indicator

Takunda Yeukai Chitaka - *University of Cape Town, South Africa*

**Yearly life cycle inventory of the electricity production and distribution in Chile:
the evidences of the time effect**

Mabel Vega - *University of Concepcion, Chile*

**Towards better life cycle approaches through combined use of system-based methodologies:
a case study of interrelationships among environmental sustainability, food systems and diet**

Tianchu Lu - *The University of Queensland, Australia*

**Environmental impacts of biomass-to-energy conversion technologies:
grate boilers and fluidized bed boilers**

Tamiris Pacheco Costa - *University of Aveiro, Portugal Organisation(s): University of Aveiro, Portugal*

I HAVE A DREAM: OPEN MARKETPLACE FOR LIFE CYCLE APPROACHES

LOCATION: Salle de Conférences de Presse

CHAIRS: Mark Goedkoop, *PRé Sustainability*
Peter Saling, *BASF*

02.00 pm **MEANS-InOut: user-friendly software to perform complete LCI and share data of agricultural products**

Julie Auberger¹, Caroline Malnoë¹, Lucille Chanel¹, Vincent Colomb², Geneviève Gésan-Guiziou³, Hayo van der Werf¹, Joël Aubin¹

¹UMR SAS, INRA, AGROCAMPUS OUEST 35000 Rennes, France; ²ADEME, France; ³UMR STLO, INRA, AGROCAMPUS OUEST 35000 Rennes, France

02.15 pm **Guidelines and documentation for Web-based LCA system (WebLCA)**

Hongtao Wang¹, Li Zhang², Zhilan Jiang², Sijing Xiang², Jing Zhang², Bo Song², Xiaoqian An¹, Yiwei Liang¹, Wenjie Liao¹

¹Sichuan University, China, People's Republic of; ²IKE Environmental Technology Co. Ltd.

02.30 pm **Making the dream come true: Sharing linked data and software with BONSAI**

Michele De Rosa¹, Bo Weidema¹, Jannick Schmidt²

¹BONSAI, Denmark; ²2.-0 LCA Consultants, Denmark

02.45 pm **On the way towards an open marketplace: How to make the LCA world modular?**

Rainer Zah¹, Mark Goedkoop², Juergen Reinhard¹, Eric Mieras²

¹Quantis, Switzerland; ²PRé, Netherlands

03.00 pm **How Coatings established a strong bond with LCA and Sustainability: CEPE database and Ecofootprint tool**

Olympia Dolla¹, Pau Huguet Ferran²

¹CEPE, EU; ²Ecomatters, Netherlands

03.15 pm **Discussion panel and Q&A**



FOOD WASTE MANAGEMENT (SECTOR) IN A CIRCULAR ECONOMY

LOCATION: Salle D

CHAIRS: **Nicole Unger**, *University of Natural Resources and Life Sciences, Vienna*
Francesco Razza, *Novamont*

02.00 pm Environmental implication of co-digestion of dairy manure and food waste nationwide under US climate change policy

Ying Wang¹, Xun Liao^{2,3}

¹Innovation Center for U.S. Dairy, United States of America; ²Industrial Process and Energy Systems Engineering, EPFL, Switzerland; ³Quantis International

02.15 pm Food waste reduction and its potential to mitigate Global Warming

Silvia Scherhauser, Gudrun Obersteiner

University of Natural Resources and Life Sciences, Vienna, Austria

02.30 pm Agri-Food Waste Streams Utilization for More Sustainable Food Substitutes Development

Sergiy Smetana, Kemal Aganovic, Stefan Irmischer, Volker Heinz

DIL e.V., Germany

02.45 pm The role of composting in the waste management of organic waste and the circular economy

Francesco Razza¹, Lorenzo D'Avino², Giovanni L'Abate², Luca Lazzeri³, Francesco Degli Innocenti⁴

¹Novamont S.p.A., Italy; ²CREA-AA Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria, Research Center for Agriculture and Environment, Italy; ³CREA-CI Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria, Research Center for Cereal and Industrial Crops, Italy; ⁴Novamont S.p.A., Italy

03.00 pm Contributing to measure the food circular economy: eco-nutrient footprint of a food production system

Isabel Garcia-Herrero¹, Jara Laso¹, Maria Margallo¹, Pere Fullana², Alba Bala², Ian Vázquez-Rowe³, Cristina Gazulla⁴, M.J. González¹, Ainoa Quiñones¹, Maria Jesús Durá¹, Carmen Sarabia¹, R. Abajos¹, Angel Irabien¹, Ruben Aldaco¹

¹Universidad de Cantabria, Spain; ²UNESCO Chair in Life Cycle and Climate Change, Escola Superior de Comerç International (ESCI), Universitat Pompeu Fabra (UPF), Spain; ³Pontificia Universidad Católica del Perú, Departamento de Ingeniería, Red Peruana Ciclo de Vida. Perú; ⁴Lavola Cosostenibilidad. Rbla., Spain

03.15 pm Discussion panel and Q&A

LIFE CYCLE APPROACHES TO SUSTAINABLE REGIONAL DEVELOPMENT

LOCATION: Salle E

CHAIRS: Fritz Balkau, *Sustainable solutions*
Timothy Grant, *Life Cycles Australia*

02.00 pm Territorial Metabolism through Life-Cycle of Products

Benoit Ribon^{1,2}

¹Université de Strasbourg, CNRS, LIVE UMR 7362, France; ²Agence de l'Environnement et de la Maîtrise de l'Energie (ADEME), France

02.15 pm THE POTENTIAL IMPACTS OF A CIRCULAR ECONOMY IN SOUTH AUSTRALIA

Jodie Kathleen Bricout, Timothy Grant

Lifecycles, Australia

02.30 pm Mainstreaming Life Cycle Management: using a sector based and regional approach in Northern France

Vanessa Pasquet, Naeem Adibi, Aubin Roy, Alice Salamon

[avnIR] platform, France

02.45 pm Evaluating the environmental and socio-economic impacts of implementing a bioeconomy region from a life cycle perspective

Alberto Bezama¹, Maik Budzinski¹, Jakob Hildebrandt¹, Sinéad O'Keeffe¹, Anke Siebert¹, Daniela Thrän^{1,2}

¹Helmholtz Centre for Environmental Research UFZ, Germany; ²DBFZ Deutsches Biomasseforschungszentrum gGmbH

03.00 pm Consequential modelling approach for the environmental assessment of Pisco production in the Ica Valley, Peru

Ian Vazquez Rowe, Gustavo Larrea-Gallegos, Ramzy Kahhat

Pontificia Universidad Católica del Perú, Peru

03.15 pm Discussion panel and Q&A



Schedule

WEDNESDAY, SEPTEMBER 6 : CLOSING CEREMONY

03.40 pm - 04.30 pm

CLOSING CEREMONY

LOCATION: Salle de Conférences 1

MODERATOR: **Enrico Benetto**, *Luxembourg Institute of Science and Technology*

03.40 pm Life Cycle Initiative's new strategy and opportunities for sustainable business and policy

Feng Wang, UN Environment

04.00 pm LCM Conference Series – Announcements

Matthias Finkbeiner, TU Berlin, Head of LCM conference series Steering Committee

Zbigniew Klos, Krzysztof Koper, Poznan University of Technology

04.15 pm “From PhD to Apps!” and “Poster Challenge” Awards - Closing of LCM2017

Enrico Benetto, Chair of LCM2017,

Head of Unit “Life Cycle Sustainability and Risk Assessment”, Luxembourg Institute of Science and Technology





Thank you

LCM 2017 has been organized by the Luxembourg Institute of Science and Technology (LIST), in collaboration with the University of Luxembourg (Uni.lu) and ArcelorMittal. We would like to thank in particular the members of the Organizing Committee, whose tireless work during the last few months has made LCM2017 happen: Mélanie Guiton, Marylène Martin, Céline Goncalves, Tomás Navarrete Gutierrez and Lugdivine Unfer. The Event and Communication departments of LIST and uni.lu are also gratefully acknowledged for their support in the communication and dissemination actions.

A large conference such as LCM2017 would have never been possible without the financial help of external institutions. We are very grateful to the Luxembourg National Research Fund (FNR), the Luxembourg Ministry of the Economy and the European Investment Bank for their invaluable support. We would also like to acknowledge the extraordinary level of financial funding from private companies: Evonik Nutrition & Care GmbH, Pré Consultants B.V., Thinkstep AG and Kronospan Luxembourg S.A. (Platinum sponsors); BASF SE, Ipoint Systems GmbH and Quantis International (Gold Sponsors); Delphi Automotive Systems Luxembourg, Plastics Europe,

Nestlé S.A., Steelcase Werndl AG, Tarkett GDL S.A. (Silver Sponsors). The sponsors also contributed to shaping an attractive program of keynote lectures and discussion panels in a fair and constructive atmosphere, to add valuable content to the conference program.

We acknowledge the partnership with the Luxembourg Chamber of Commerce for the B2Fair matchmaking event, a new feature introduced to the LCM conference series for the first time this year to facilitate networking among participants.

We would like to thank all the abstract and session contributors, chairs and reviewers, exhibitors and delegates. It is your commitment and interest that made it all happen.

Finally, we would like to say a big thank you to the LCM Conference Planning Committee, and in particular to Matthias Finkbeiner (chair of the Committee and chair of LCM2011) and Guido Sonnemann (Chair of LCM2015) for sharing their experiences and learnings from previous conferences and for constructive discussions during the 2 years of preparation for LCM2017.



Contact

Luxembourg Institute of Science and Technology (LIST)

5 avenue des Hauts-Fourneaux

L-4362 Esch-sur-Alzette – LUXEMBOURG

Tel.: (+352) 27 58 88 1

Email: LCM2017@list.lu

CONFERENCE CHAIR

Enrico Benetto

Head of the “Life Cycle Sustainability and Risk Assessment” RDI Unit

Luxembourg Institute of Science and Technology

enrico.benetto@list.lu

CONFERENCE CO-CHAIRS

Jan Bollen

Manager, Environmental aspects of products, ArcelorMittal Europe

Jan.Bollen@arcelormittal.com

Kilian Gericke

Research Scientist, Engineering Design and Methodology group,

Research Unit in Engineering Sciences, University of Luxembourg

Kilian.Gericke@uni.lu



THE 8TH INTERNATIONAL
CONFERENCE ON

Life Cycle Management

