

THE 11TH INTERNATIONAL CONFERENCE ON

Life Cycle Management

Program



**LCM
2023**

SEPTEMBER 6-7-8, 2023
LILLE • FRANCE

Schedule

WEDNESDAY, SEPTEMBER 6: OPENING CEREMONY

10.00 am – 11.00 am

PLENARY SESSION - KEYNOTE PLENARY

11.00 am – 12.30 pm

LUNCH BREAK & POSTER SESSION

12.30 pm – 02.00 pm

Opening ceremony and Plenary session 1

LOCATION: Grand Théâtre

MODERATOR: Jodie Bricout, *Principal Circular Economy, Aurecon*

08.00 am Doors open

10.00 am Opening ceremony

Naeem Adibi, Chair of LCM 2023, Invited professor in JUNIA, Founder and head of WeLOOP

11.00 am **KEYNOTE PLENARY - Life cycle management at scale and at pace:
latest development and applications from industry, policy makers and experts.**

Archana Datta, Associate Programme Management Officer, Life Cycle Initiative, Industry and Economy Division, UNEP

Michele Galatola, Senior Policy Officer, European Commission

Roberto Huet, CEO, EQIOM and Stradal, a CRH Company

Astrid Van Parys, Head of Sustainability, Colruyt Group

Nicola Davidso, VP Sustainable Development and Corporate Communications, Arcelor Mittal

Eric Mieras, Managing Director, PRé Sustainability

This session brings together policy makers, experts, advocates and industry to share latest developments and discuss next steps in bringing LCM to the masses.

Michele Galatola and Archana Datta will provide updates on the work of the European Commission and the UN Environment Programme's Life Cycle.

Roberto Huet, Nicola Davidso, Astrid Van Parys and Eric Mieras will share how LCA is moving from a static assessment used by few, to dynamic tools used in real time by professionals across many disciplines to explore our biggest sustainability challenges.

Schedule

WEDNESDAY, SEPTEMBER 6: PARALLEL SESSIONS

02.00 pm – 03.30 pm

COFFEE BREAK & POSTER SESSION

03.30 pm – 04.30 pm

**TOWARDS MEANINGFUL SUSTAINABILITY ASSESSMENT IN CIRCULAR ECONOMY:
SUCCESS & FAILURES**

LOCATION: Théâtre Pasteur

CHAIRS: *Monia Niero, Sant'Anna School of Advanced Studies Pisa, Italy*
Jan Bollen, ArcelorMittal, Europe

02.00 pm Introduction

02.05 pm **Enhancing circularity and resilience of the European industrial value chains through EU product & waste policy measures: insights from Lithium-ion battery, automotive and electronics sectors**

Thibaut Maury-Micolier, Nacef Tazi, Silvia Bobba, Martina Orefice, Umberto Eynard, Cynthia Latunussa, Fabrice Mathieux

European Commission – Joint Research Centre, Sustainable Resources Directorate, Italy

02.20 pm **Life Cycle Circularity Indicator: an extensive version of the Material Circularity Indicator**

Geoffrey Lonca, Chloé Dezani, Loïc Levenez

Capgemini Engineering, direction Recherche & Innovation, France

02.35 pm **Comparison of LCA and circularity indicators: what method to use for what?**

Adeline Jerome, Maria Ljunggren, Matty Janssen

Chalmers University of Technology, Sweden

02.50 pm **The applicability of the Organisation Environmental Footprint method as corner stone for a retailer's environmental sustainability strategy: insights by early adopter Colruyt Group**

Steven Van Hemelryck ¹, Cara McHardy ¹, Filip Watteyn ¹, Carolina Szablewski ², Clément Bolle ², Naeem Adibi ², Wannes Voorend ¹, Astrid Van Parys ¹

¹ *Colruyt Group, Belgium*; ² *WeLOOP, France*

03.05 pm **Carbon accounting in a circular chemical industry – Challenges in accounting frameworks**

Luisa Kühn, Lydia Pforte, Leonard Mueller, Betuel Kilic Tezcan, Massimo Collotta, Nikolaj Otte

Henkel AG & Co.KGaA, Germany

03.20 pm **Wrap-up discussion & conclusion**

LIFE CYCLE MANAGEMENT FOR E-MOBILITY SERVICES

LOCATION: Théâtre Marie Curie

CHAIRS: Caroline Mir, *Renault SAS, France*
Juan Felipe Cerdas Marin, *Fraunhofer IST, Germany*

02.00 pm Introduction

02.04 pm Exploring the environmental impacts of EV battery supply chains using LCA
Robert Pell, Jordan Lindsay
Minviro, United Kingdom

02.18 pm Eco-design and Circular Economy Practices applied to Li-ion Electric Vehicle Batteries
Gabriela Benveniste Pérez, Luis Alberto López, Víctor José Ferreira Ferreira,
Cristina Corchero García
IREC, Spain

02.32 pm Circularity performance of reusing, repurposing and recycling solutions for the end-of-life management of electric vehicle batteries
Aitor Picatoste¹, Daniel Justel¹, Joan Manuel F. Mendoza^{1,2}
¹ *Mondragon Unibertsitatea, Faculty of Engineering, Mechanics and Industrial Production, Spain;* ² *Ikerbasque, Basque Foundation for Science, Spain*

02.46 pm Investigating the Influence of Design Parameters on Environmental Impacts of Batteries for e-mobility through the Integration of Ageing Models in Life Cycle Assessment
Teo Lavisse^{1,2}, Remy Panariello¹, Fabien Perdu¹, Sebastien Rolere¹, Peggy Zwolinski²
¹ *Université Grenoble Alpes, CEA-Liten, France;* ² *Univ. Grenoble Alpes, CNRS, France*

03.00 pm How to handle constantly changing life-cycle-based carbon calculation methodologies in automotive decarbonisation?
Mara Neef, Thomas Fugger, Tina Dettmer
Volkswagen, Germany





WEDNESDAY
02.00 pm – 03.30 pm

- 03.14 pm** **What do we need for a harmonized LCA approach for E-mobility?**
Hazem Eltohamy, Jeroen B.Guinee, Bernhard Steubing
Institute of environmental sciences (CML), Leiden University, The Netherlands
- 03.28 pm** **Wrap-up discussion & conclusion**

COLLABORATION ALONG THE VALUE CHAIN IN RETAIL THROUGH LCM

LOCATION: Salle 3.1

CHAIRS: Steven Van Hemelryck, *Colruyt Group, Belgium*
Koen Boone, *WUR, The Netherlands*

02.00 pm Introduction

02.02 pm Dialogue for food waste prevention in the Norwegian value chain
Ellen-Marie Forsberg, Aina Elstad Stensgård
NORSUS Norwegian Institute for Sustainability Research, Norway

02.14 pm A Value Chain Approach to Commodity Risk Assessment in the Retail Sector – the Case of Loblaw Companies Limited (LCL)

Jean-Michel Couture ¹, Simon Nadeau ¹, Emma Race ², Lily McRae ²
¹ *Groupe AGÉCO, Canada*; ² *Loblaw Companies Limited, Canada*

02.26 pm Discussion (First Part)

02.31 pm Development of a harmonized LCA methodology for ecolabelling based on supply chain data

Janjoris van Diepen ¹, Lianne de Weert ¹, Davide Lucherini ¹, Sergiy Smetana ², Jonathan Birnie ³, Greta Delfino ³
¹ *Blonk Sustainability, The Netherlands*; ² *DIL German Institute of Food Technologies, Germany*; ³ *Foundation Earth, Europe*

02.43 pm Navigating the coming paradigm shift in food ecolabelling – considerations from the science basis

Maëlys Courtat ^{1,2}, P. James Joyce ², Sarah Sim ², Jhuma Sadhukhan ¹, Richard Murphy ¹
¹ *Centre for Environment and Sustainability, University of Surrey, United Kingdom*;
² *Safety and Environmental Assurance Centre, Unilever R&D, United Kingdom*

02.55 pm Key elements to harmonized environmental footprinting and ecolabeling of food products

Roline Broekema, Koen Boone
Wageningen Economic Research, The Netherlands





WEDNESDAY

02.00 pm – 03.30 pm

03.07 pm **Environment labelling consequences for the single-use plastics in retail products**

Carolina Szablewski ¹, Marie Beccat ², Clément Bolle ¹, Sam Herlicq ¹, Naeem Adibi ¹

¹ WeLOOP, France; ² Karbon, France

03.19 pm **Wrap-up discussion (Second Part) & conclusion**

METHODOLOGICAL ADVANCEMENTS IN SOCIAL LCM

LOCATION: Salle 3.2

CHAIRS: **Rose Nangah Mankaa**, *Institute of Sustainability in Civil Engineering (INaB) RWTH Aachen University, Germany*
Davide Bonaffini, *Hitachi Rail, Italy*

02.00 pm Introduction

02.04 pm **Ways Forward to Collect Primary Data in Social LCA**

Arij Chabrawi¹, **Marzia Traverso**¹, **Cassia Maria Lie Ugaya**², **Josemberg Moura**³

¹ RWTH Aachen University, Germany; ² Universidade Federal Tecnológica do Paraná, Brazil;

³ Universidade de Brasília, Brazil

02.18 pm **Blockchain Architecture as a support for Social Life Cycle Inventory Analysis**

Manuela D'Eusanio, **Luigia Petti**

"G.d'Annunzio" University of Pescara, Department of Economic Studies, Italy

02.32 pm **How can the application of the theory of change contribute to developing cause and effect chains in social LCA: the case of cocoa farmers in Côte d'Ivoire**

Steven Van Hemelryck¹, **Naeem Adibi**², **Karen Janssens**¹, **Wannes Voorend**¹

¹ Colruyt Group, Belgium; ² WeLOOP, France

02.46 pm **The ethical implications of scaling social impacts in low Technology Readiness Level assessments: A case study for nano-enabled products**

Julieta Díez-Hernández^{1,2}, **Jesús Ibañez**², **Mario Santiago-Herrera**², **Rocio Barros**²,
Óscar López-de-Foronda¹, **David Blanco-Alcántara**¹, **Sonia Martel-Martín**²

¹ Business and Economics Faculty, University of Burgos, Spain; ² ICCRAM, University of Burgos, Spain

03.00 pm **Illustrating the role of alternative supply chains and evolved conditions in social life cycle assessment of energy-related products**

Mario Martín-Gamboa¹, **Diego Iribarren**²

¹ Rey Juan Carlos University, Chemical and Environmental Engineering Group, Spain;

² IMDEA Energy, Systems Analysis Unit, Spain





WEDNESDAY

02.00 pm – 03.30 pm

03.14 pm **Direct quantification of indicators in PSILCA – An example of Social Life Cycle Assessment of fuel cell electric vehicle production**

Sally Kirsten Springer, Christina Wulf, Zapp Petra

Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research, Systems Analysis and Technology Evaluation (IEK-STE), Germany

03.28 pm **Conclusion**

PROSPECTIVE LCM OF EMERGING TECHNOLOGIES & NEXT-GENERATION MATERIALS

LOCATION: Salle 2.3 & 2.4

CHAIRS: Nils Thonemann, *CML, Leiden University, The Netherlands*
Mateo Saavedra del Oso, *Stora Enso Oyj, Finland*

02.00 pm Introduction

02.04 pm **A practitioner's guide for prospective assessments across the TRLs: A case study on all-solid-state batteries**

Svenja Weber¹, Kira Patzke¹, Joris Baars¹, Felipe Cerdas^{1,2}, Sabrina Zellmer¹, Christoph Herrmann^{1,2}

¹ Fraunhofer Institute for Surface Engineering and Thin Films IST, Germany; ² Institute of Machine Tools and Production Technology, Germany

02.18 pm **Recent developments in generating and working with future scenarios in LCA**

Bernhard Steubing¹, Romain Sacchi², Angelica Mendoza³

¹ Leiden University, The Netherlands; ² Paul Scherrer Institute, Switzerland; ³ LCA 2.0 Consultants, Denmark

02.32 pm **Substitution in prospective life cycle assessment of resource recovery from waste incineration slag**

Leon Alexander Zacharopoulos, Jutta Geldermann

University of Duisburg-Essen, Germany

02.46 pm **Airborne Wind Energy – A starlight example of the “reduce” aspect in the energy sector**

Karin Treyer, Romain Sacchi

Laboratory for Energy Systems Analysis, Paul Scherrer Institute, Switzerland

03.00 pm **Estimating future environmental impacts for electric vehicle battery raw materials**

Ioan-Robert Istrate¹, Bernhard Steubing¹, Antoine Beylot², Jeroen Guinee¹

¹ Institute of Environmental Sciences (CML), Leiden University, The Netherlands;

² BRGM – French Geological Survey, France



03.14 pm **Advances in prospective LCA of WEEE recycling by thermo-chemical pyrolysis (iCycle®)**

Anna Schulte¹, Moema Lamb Schefflera¹, Philip Biessey², Tobias Rieger¹

¹ *Fraunhofer Institute for Environmental, Safety, and Energy Technology UMSICHT, Germany;* ² *Ruhr-Universität Bochum, Germany*

03.28 pm **Conclusion**

Schedule

WEDNESDAY, SEPTEMBER 6: PARALLEL SESSIONS

04.30 pm – 06.00 pm

SUSTAINABILITY & CIRCULARITY IN BUSINESS MODELS & BUSINESS ECOSYSTEMS

LOCATION: Théâtre Pasteur

CHAIRS: Hanna Maria Nilsson-Lindén, *RISE Research Institutes of Sweden, Sweden*
Piet Vitse, *Owens Corning, Belgium*

04.30 pm Introduction

04.35 pm **Circularity at different systems level – the CapSEM Model**

Annik M Fet, Sandra Tippett-Spirtou

NTNU- The Norwegian University of Science and Technology, Norway

04.50 pm **The need for coordinating adoption of circular business models – a challenge for rapid growth of the circular economy**

Ottar Michelsen, Arild Aspelund

NTNU - The Norwegian University of Science and Technology, Norway

05.05 pm **A conceptual methodology to screen and adopt circular business models in small and medium scale enterprises (SMEs): A case study on child safety seats as a product service system**

Philipp Rittershaus, Manfred Renner, Venkat Aryan

Fraunhofer UMSICHT, Germany

05.20 pm **Can circular economy business models reduce life cycle environmental impacts of the clothing sector?**

Sarah Gray¹, Jhuma Sadhukhan², Angela Druckman², Keith James¹

¹ WRAP, *United Kingdom*; ² *University of Surrey, United Kingdom*

05.35 pm **Life cycle assessment as a tool to ensure circular economy drives environmental benefits : A railway signaling study case**

Laurent Pierre-Louis, Coline Mellin, Mélanie Bordignon

ALSTOM, France

05.50 pm **Wrap-up discussion & Conclusion**

INNOVATION IN THE METALLURGICAL SECTOR FOR A BETTER SUSTAINABLE MANAGEMENT

LOCATION: Théâtre Marie Curie

CHAIRS: Denis Chevé, *Befesa Stainless Recycling, France*
Gert Van Hoof, *Umicore, Belgium*

04.30 pm Introduction

04.34 pm Development of simulation-based life cycle inventory for battery-grade lithium carbonate produced from different sources

Aina Mas Fons, Rachel Horta Arduin, Philippe Loubet, Guido Sonnemann

Institute of Molecular Sciences, University of Bordeaux, Centre National de la Recherche Scientifique, France

04.48 pm Technical, economic and environmental characterisation of industrial trends for the decarbonisation of the foundry and steelmaking industries: opportunities and limitations from a life cycle thinking perspective

Leire Gorroño-Albizu¹, Borja Díez¹, Dorleta Ibarra¹, Joan Manuel F. Mendoza^{1,2}

¹ Mondragon Unibertsitatea, Spain; ² Ikerbasque, Basque Foundation for Science, Spain

05.02 pm Comparative analysis on four allocation approaches for steel products and its implication for a PEFCE development for intermediary steel products

Lisa Damen^{1,2}, Mihaela Thuring^{1,2}, Carolin Spirinckx^{1,2}, Joren Mijndonckx^{1,2}

¹ VITO, Belgium; ² EnergyVille, Belgium

05.16 pm German 'Green steel' initiative

Gerhard Endemann¹, Roland Geres², Stefan Weigert², Jan Bollen³

¹ WV Stahl, Germany; ² FutureCamp Climate Ltd, Germany; ³ ArcelorMittal, Europe

05.30 pm Carbon footprint and energy transformation analysis of steel produced via a Direct reduction plant with an integrated electric melting unit

Julian Suer, Nils Jäger

Thyssenkrupp Steel Europe AG, Germany





WEDNESDAY
04.30 pm -06.00 pm

- 05.44 pm** **The zero emission steel mill of the future**
Marian Flores Granobles, Eric Deconinck, Wim Van Der Stricht, Jan Bollen
ArcelorMittal, Europe
- 05.58 pm** **Conclusion**

USE OF LCM IN SUSTAINABLE REGIONAL DEVELOPMENT - EXPERIENCE & RESEARCH PERSPECTIVES

LOCATION: Salle 3.1

CHAIRS: Eleonore Loiseau, *INRAE, France*
Pekka Majjala, *Pyhäjärvi institute, Finland*

04.30 pm Introduction

04.34 pm Territorial Life Cycle Assessment of the battery sector in the North of France Region
Agathe Wattelier, Kim Luu, Naeem Adibi, Carolina Szablewski
WeLOOP, France

04.48 pm BioCircularCities: Guidelines for the identification of sustainable and circular solutions for the management of biowaste in urban areas.
Mélanie Guiton ¹, Karin Meister ², Laurène Chochois ¹, Laurent Chion ¹, Tomás Navarrete Gutiérrez ¹, Amalia Zucaro ³, Rosaria Chifari ²
¹ Luxembourg Institute of Science and Technology - LIST, Luxembourg; ² Fundació ENT, Spain; ³ ENEA, Department for Sustainability, Division Resource Efficiency, Research Centre of Portici (NA), Italy

05.02 pm Environmentally-Extended Input-Output analyses efficiently sketch regional environmental transition plans: illustration by Canada's road industry
Anne Cécile de Bortoli, Maxime Toni Agez
Polytechnique Montreal, Canada

05.16 pm Integrated sustainability evaluation of current and prospective scenarios of solid waste management systems in flooded islands: a case study in Batasan island, Tubigon, Bohol, Philippines
Rex Ronter Gerigidig Ruiz, Jhud Mikhail Ortillo Aberilla
University of the Philippines Diliman, Philippines

05.30 pm Assessing the circular bioeconomy potential at the regional level – A stepwise approach and its application to a metropolitan area in Germany
Almut Güldemund, Liselotte Schebek, Vanessa Zeller
Chair of Material Flow Management and Resource Economy, Institute IWAR, Technical University of Darmstadt, Germany





WEDNESDAY
04.30 pm – 06.00 pm

05.44 pm Use of, and challenges for, LCM in regional development

Jolanta Dvarioniene ¹, Pekka Majjala ², Fritz Balkau ³

¹ Kaunas Technical University, Lithuania; ² Pyhäjärvi-Instituutti, Finland;

³ Sustainable Solutions, France

05.58 pm Conclusion

SOCIAL LIFE CYCLE ASSESSMENT IN PRACTICE: IMPLEMENTATION AND VALUE DERIVED

LOCATION: Salle 3.2

CHAIRS: Sara Russo Garrido, *CIRAIG, Canada*
Ladji Tikana, *International Copper Association, The United States of America*

04.30 pm Introduction

04.34 pm **Social LCA as a preparation step towards future requirements**
Shaniq Ursula Pillay, Mark Goedkoop, Rosan Harmens
PRé Sustainability, The Netherlands

04.48 pm **Implementation of Social Value Assessment: The perspective from Corbion**
Ana Morao, Darien Holman, Diana Visser
Corbion, Sustainability Department, The Netherlands

05.02 pm **Applied Qualitative Methods for Social Life-cycle Assessment: A Case Study of Canadian Beef**
Robyn Graham¹, Jean-Michel Couture², Simon Nadeau²
¹ *Canfax Research Services, Canada*; ² *Groupe AGÉCO, Canada*

05.16 pm **Type II S-LCA to rethink CSR actions: case study of an agricultural company**
Anaïs Falk^{1,2}, Catherine Macombe³, Denis Loeillet²
¹ *Vitropic S.A., France*; ² *UPR GECCO, University of Montpellier, France*; ³ *ITAP, INRAE, Institut Agro, University of Montpellier, France*

05.30 pm **The application of S-LCA to address lithium mining and its potential impacts on water and the local community in Chile**
Lindsey Roche, Sylvia Marinova, Andreas Link, Matthias Finkbeiner
Technische Universität Berlin, Germany

05.44 pm **Multi-scope social life cycle impact assessment: application to offshore wind energy sector in France**
Jérémy Lehmann^{1,2}, Rhoda Fofack-Garcia², Paula Pérez-López¹, Ghada Bouillass³
¹ *Mines Paris, France*; ² *France Energies Marines, France*; ³ *CentraleSupélec, France*

05.58 pm Conclusion

LIFE CYCLE MANAGEMENT IN HEALTHCARE SECTOR

LOCATION: Salle 2.3 & 2.4

CHAIRS: Wouter De Soete, *Janssen, Belgium*
Scott McAlister, *The University of Melbourne, Australia*

04.30 pm Introduction

04.34 pm Comparative Life Cycle Assessment of reusable and single-use specula used in Belgian hospitals

Sophie Huysveld¹, Liesbet Demarré², Katrien Vanderwee², Simon Malfait², Veerle Duprez², Jo Dewulf¹, Norbert Fraeyman²

¹ Sustainable Systems Engineering (STEN), Department of Green Chemistry and Technology, Faculty of Bioscience Engineering, Ghent University, Belgium; ² Ghent University Hospital, Belgium

04.48 pm An LCA comparing healthcare facility-based haemodialysis with home haemo- and peritoneal dialysis in Australia

Scott McAlister^{1,2}, Katherine Barraclough³

¹ The University of Melbourne, Australia; ² The University of Sydney, Australia; ³ The Royal Melbourne Hospital, Australia

05.02 pm Life Cycle Assessment of phase I and phase III clinical trials

Rodrigo Alvarenga¹, Jason LaRoche², Annemie Chiau², Thomas Costelloe³, Michael Collins³, Simon Aumônier⁴

¹ ERM, Belgium; ² Janssen Clinical Innovation (JCI); ³ ERM, United Kingdom; ⁴ Aumônier Consulting Limited, United Kingdom

05.16 pm The Application of LCA in Healthcare Using the Care Pathway Approach

Aoife Calnan¹, Nigel Budgen², Thomas Costelloe¹, Rodrigo Alvarenga¹, Michael Collins¹

¹ ERM, United Kingdom; ² AstraZeneca, United Kingdom

05.30 pm Calculation of Scope 3 GHG emissions of purchased goods and services applying a hybrid approach based on life cycle thinking

Aoife Calnan¹, Saori Galley¹, Amelia Nunn², Simon Aumônier³

¹ ERM, United Kingdom; ² Becton Dickinson, The United States of America; ³ Aumônier Consulting, United Kingdom





WEDNESDAY

04.30 pm – 06.00 pm

05.44 pm A Collaborative Approach towards Product Category Rules for Pharmaceuticals

Isolda Agustí-Juan¹, Sarah Arias-Zeballos², Wouter De Soete³, Trine Lund Neidel⁴, Sarah Mandelbaum⁵, Barry Dillon⁶, Oliver Schwab⁷, Andy Whiting⁸

¹ Roche Diagnostics International AG, Switzerland; ² Sanofi Winthrop Industrie, France;

³ Janssen Pharmaceutica NV, Belgium; ⁴ Novo Nordisk, Denmark; ⁵ Takeda Pharmaceutical Company Limited, Japan; ⁶ Pfizer, United Kingdom; ⁷ GSK plc, United Kingdom; ⁸ AstraZeneca UK Limited, United Kingdom

05.58 pm Wrap-up & Conclusion

Schedule

THURSDAY SEPTEMBER 7: PLENARY SESSION - KEYNOTE PLENARY

09.00 am - 10.00 am

COFFEE BREAK & POSTER SESSION

10.00 am - 11.00 am

PARALLEL SESSIONS

11.00 am - 12.30 pm

LUNCH BREAK & POSTER SESSION

12.30 pm - 02.00 pm

Plenary session 2

LOCATION: Grand Théâtre

MODERATOR: Jodie Bricout, *Principal Circular Economy, Aurecon*

08.00 am Doors open

09.00 am **KEYNOTE PLENARY – Getting to carbon neutral through life cycle management**

Paul Tummers, *CEO of Virya Energy*

Emilia Moreno Ruiz, *Chief Technical Officer atecoinvent*

Florian Ansgar Jaeger, *Key expert for “Sustainability of energy systems & urban infrastructure” at Siemens*

Frank Kuijpers, *General Manager Corporate Sustainability at Sabic*

This session brings together three leading corporates striving to achieve carbon neutrality, with a key data provider enabling the shift to be evidence-based.

Many LCM participants rely on ecoinvent data everyday for their work – they use the database either directly, via the traditional LCA softwares (SimaPro, Open LCA, Brightway, Point, GaBi), or as enabler of new kind of tools, like One Click LCA from One Click LCA, Product Lifecycle Intelligence software from Makersite, Mobius from ecochain, Ecodesign studio from Altermaker, or Terrascope from Terrascope. Users also benefit from ecoinvent as the database enables industry specific databases such as Agribalyse, Agrifootprint, Carbon Minds or TOTEM, by providing the background they need to calculate their supply chains. Ecoinvent’s CTO Emilia will share their latest developments and discuss how your feedback helps them improve to further support the transition to carbon neutrality.

Emilia is joined by three corporate heavyweights to discuss how data meets practice. Virya Energy, Siemens and Sabic are at the front line of industrial transformation to achieve the greatest challenge of our time: getting to net zero. Paul, Florian and Frank will share their long progress with using life cycle databases, tools and methods to support impactful actions to cut carbon emissions across the globe, and how the drivers are (finally) in place for change at scale. Covering clean energy (Virya), digital transformation (Siemens) and low carbon building materials (Sabic), this discussion will include glimpses at technological breakthroughs that are jumping out of the lab, the challenges of robust carbon reporting at scale, circular economy innovations and more.

APPROACHING LIFE CYCLE SUSTAINABILITY AS THE ACTUAL DRIVER OF ENERGY

LOCATION: Théâtre Pasteur

CHAIR: Diego Iribarren, *IMDEA Energy, Spain*
Jef Van Valckenborgh, *Parkwind, Belgium*

11.00 am Introduction

11.05 am Life cycle assessment of hydrogen produced by methane pyrolysis
Marie Wouts, Julie Clavreul, Laurent Baraton, Sanae Bouaichi
ENGIE, France

11.20 am Environmental Performance of Anion Exchange Membrane Water Electrolysis
Elke Schropp, Gabriel Naumann, Matthias Gaderer
Technical University of Munich, Germany

11.35 am Could hydrogen help achieve net zero emissions?
Emmanuel Mignard, Edgar Latour, Veronica Eguia, Guido Sonnemann
CNRS UMR5255 ISM, Université de Bordeaux, Bordeaux INP, France

11.50 am ASSISTANCE project: Analysis of social impacts for a sustainable energy transition in Spain and responsible decision-making
Luisa Berridy-Segade, María del Prado Díaz, Miguel Ángel Reyes-Belmonte,
Mario Martín-Gamboa
Rey Juan Carlos University, Chemical and Environmental Engineering Group, Spain

12.05 pm Sustainable offshore wind energy in the Belgian Continental Shelf?
Monetized (socio-) environmental footprint and handprint of electricity production.
Sue Ellen Taelman¹, Laura Vittoria De Luca Peña¹, Nils Préat¹, Till M. Bachmann², Katrien Van de Biest³, Joachim Maes⁴, Bilge Bas¹, Jo Dewulf¹
¹ Ghent University, Green Chemistry and Technology, Coupure Links 653, Belgium;
² European Institute for Energy Research EDF-KIT EEIG, Germany; ³ University of Antwerp, ECOSPHERE Research Group, Belgium; ⁴ European Commission, Brussels, Belgium

12.20 pm Wrap-up discussion & Conclusion

TOWARDS CARBON NEUTRALITY WITH LCM (1)

LOCATION: Théâtre Marie Curie

CHAIRS: Anne Cécile de Bortoli, *Polytechnique Montreal, Canada*
Jennifer Bravinder, *Michelin, France*

11.00 am Introduction

11.04 am Understanding interrelations in corporate GHG reporting schemes: An analysis of methodologies and data sources

Julian Baehr, Liselotte Schebek

TU Darmstadt, Germany

11.18 am Leveraging LCA Automation to achieve carbon neutrality

Sebastian Schulz

Sphera, United States of America

11.32 am Ambitions and challenges for carbon reduction: Insights from a global industry survey

Josef-Peter Schöggl¹, Magdalena Rusch¹, Rupert J. Baumgartner¹, Rebecca Cordeiro², Daniel Mair², Claus Wagner²

¹ Christian Doppler Laboratory for Sustainable Product Management, Institute of Environmental Systems Sciences, University of Graz, Austria; ² iPoint-Systems GmbH, Reutlingen, Germany

11.46 am Using the analytical framework developed for the European Commission to assess the contribution of sectoral circular economy measures to carbon neutrality

Karolien Peeters, Theo Geerken, An Vercaesteren

VITO, Belgium

12.00 pm Carbon capture, use and storage: challenges for their implementation in LCA

Victor Blancart¹, Carolina Szablewski¹, Alexandre Charpentier Poncelet¹, Guido Sonnemann², Naeem Adibi¹

¹WeLOOP, France; ² Université de Bordeaux, France





THURSDAY

11.00 am – 12.30 pm

- 12.14 pm** **Human and planetary health implications of negative emissions technologies**
Selene Cobo¹, Ángel Galán-Martín², Victor Tulus¹, Mark Huijbregts³, Gonzalo Guillén-Gosálbez¹
¹ *ETH Zurich, Switzerland*; ² *University of Jaén, Spain*; ³ *Radboud University, The Netherlands*
- 12.28 pm** **Conclusion**

USE OF EPD IN DIFFERENT LEGISLATIONS & POLICIES

LOCATION: Salle 3.1

CHAIRS: Dieter De Lathauwer, *Federal Public Service of Health and Environment, Belgium*
Jacques Chevalier, *HGE Association, France*

11.00 am Construction Product Regulation (CPR) acquis process by Dieter De Lathauwer

11.14 am Integration of EPDs in building LCA tools – Challenges and opportunities in the Belgian context

Lisa Damen^{1,2}, Damien Trigaux^{1,2,3}, Wai Chung Lam^{1,2}, Joren Mijnenonckx^{1,2}, Elke Meex⁴,
Sophie Bronchart⁵, Magali Deproost⁶

¹ VITO, *Belgium*; ² EnergyVille, *Belgium*; ³ KU Leuven, *Belgium*; ⁴ OVAM, *Belgium*; ⁵ Brussels Environment, *Belgium*, ⁶ SPW, *Belgium*

11.28 am Investigating harmonization challenges in the EPD system – A Focus on EPDs Used in the Danish Building Sector

Freja Jeppesen^{1,2}, Kristine Sofie Holse Hansen^{1,3}, Agneta Ghose¹, Massimo Pizzol¹

¹ Aalborg University, *Denmark*; ² COWI, *Denmark*; ³ Transition, *Denmark*

11.42 am The transition from EN 15804 A1 to EN 15804 A2: the consequences and impacts on the buildings

Carolina Szablewski, Clément Bolle, Naeem Adibi

WeLOOP, France

11.56 am Product Category rules, an efficient way to produce Product Environmental Profiles for industries.

Violaine Ohl-Gasteau², Manel Sansa¹, Emmanuelle Brière³

¹ Schneider Electric, *PEP ecopassport Technical committee member, France*; ² PEP ecopassport general delegate, *France*; ³ Groupe Atlantic, *PEP ecopassport Technical committee President, France*

12.10 pm Industry Perspectives on the use of Environmental Product Declarations to inform building design

Matt Roberts, Ellen Marsh, Stephen Allen

University of Bath, United Kingdom

12.24 pm Conclusion

INCREASED LIFE CYCLE ACTIONS IN SMALL & MEDIUM SIZED COMPANIES

LOCATION: Salle 3.2 B

CHAIRS: Christian Traisnel, *HEXA STRATEGIE, France*
Hélène Teulon, *Gingko 21, France*

11.00 am Introduction

11.04 am **Karbon tool: an easy solution for SMEs to implement environmental labelling in France**
Carolina Szablewski ¹, Marie Beccat ², Clément Bolle ¹, Sam Herlicq ¹, Naeem Adibi ¹
¹ WeLOOP, France; ² Karbon, France

11.18 am **Joint research projects as a kick-starter for life cycle actions in SMEs**
Daniel Wehner ¹, Steffen Kiemel ², Thomas Betten ³, Ann-Kathrin Briem ¹
¹ Fraunhofer Institute for Building Physics IBP, Germany ; ² Fraunhofer Institute for Manufacturing Engineering and Automation IPA, Germany; ³ University of Stuttgart, Germany

11.32 am **Declaring environmental performance with reuse and recycling business – approaches for small and medium sized enterprises**
Lars Gunnar Furelid Tellnes ^{1,2}, Ramon Pamies², Anna-Lena Kjøniksen¹, Johann Kristian Næss³
¹ Department of Engineering, Østfold University College, Norway; ² Departamento de Ingeniería Mecánica, Materiales y Fabricación, Universidad Politécnica de Cartagena, Spain; ³ Norwegian Institute of Wood Technology, Norway

11.46 am **Life Cycle Sustainability Management (LCSM) in SMEs – Learnings from electronics in the developing economies**
Sonia Valdivia ¹, Guido Sonnemann ²
¹ WRFA, Switzerland; ² University of Bordeaux, France

12.00 pm **Supporting Eco-Socio-Design for SME**
Monika Mousavi ¹, Julien Larrenduche ¹, Marie Vuillat ¹, Simon Mutschler ²
¹ EVEA, France; ² REBOND, France

12.14 pm **A digital common to leverage eco-design and eco-labelling for SMEs**
Alban Fournier ¹, Pascal Dagrás ¹, Lisa Chenierie ¹, Vincent Colomb ²
¹ Ecobalyse (French Ministry of Ecological Transition), France; ² ADEME, France

12.28 pm Conclusion

SETTING ENVIRONMENTAL SUSTAINABILITY TARGETS IN LCM

LOCATION: Salle 2.3 & 2.4

CHAIRS: Julie Clavreul, *ENGIE, France*
Morten Ryberg, *Sweco Danmark, Denmark*

11.00 am Introduction

11.04 am How to bring a macro level sustainability goal to micro level targets?

Gweny Thomassen^{1,2}, Jo Dewulf¹, Steven Van Passel²

¹ Ghent University, Belgium; ² Antwerp University, Belgium

11.18 am Evaluating urban mitigation strategies against absolute sustainability targets: Focus on building stocks

Lise Hvid Horup¹, Pernille K Ohms¹, Gang Liu², Srinivasa Bhuvan Gummidi², Andreas Qvist Secher³, Christian Thuesen¹, Morten Ryberg⁴

¹ DTU, Denmark; ² SDU, Denmark; ³ Ramboll, Denmark; ⁴ Sweco, Denmark

11.32 am Absolute Environmental Sustainability Assessment of aviation transition scenarios

Bastien Païs¹, Lorie Hamelin², Alexandre Gondran³, Florian Simatos¹

¹ ISAE-SUPAERO, France; ² Toulouse Biotechnology Institute, France; ³ ENAC, France

11.46 am Will the future European electricity mix exceed the planetary boundaries?

Liv Stranddorf¹, Julie Clavreul², Anne Prieur-Vernat², Morten Ryberg^{1,3}

¹ Technical University of Denmark, Denmark; ² ENGIE Lab CRIGEN, France; ³ Sweco Danmark, Denmark

12.00 pm Consumption footprint to support future scenarios assessment against policy targets and planetary boundaries

Esther Sanye Mengual¹, Jacopo Foschi², Serenella Sala¹

¹ European Commission – Joint Research Centre, Italy; ² Uni Systems, Luxembourg

12.14 pm Bridging the Gap Between Biodiversity Footprint Metrics and Biodiversity State Indicator Metrics

Mark Goedkoop¹, Axel Rossberg², Marina Dumont¹

¹ PRé Sustainability, The Netherlands; ² Queen Mary University London, United Kingdom

12.28 pm Conclusion

INNOVATIVE APPROACH TO RETHINKING SUSTAINABILITY THE UN SDGS & THE CIRCULAR ECONOMY

LOCATION: Salle 3.2 A

CHAIRS: *Deborah Andrews, London South Bank University, United Kingdom*
Elizabeth Newton, London South Bank University, United Kingdom

11.00 am Introduction

11.05 am **Conceptual framework for a life-cycle based methodology for corporate SDG assessment**

Chonlawan Thammaraksa, Alexis Laurent, Caroline Herlev Gebara, Myrthe Petit
Section for Quantitative Sustainability Assessment, Department of Environmental and Resource Engineering, Technical University of Denmark (DTU), Denmark

11.15 am **Linking LCA information to the UN SDGs – a use case**

Shaniq Ursula Pillay
PRé Sustainability, The Netherlands

11.25 am **The Preliminary Study of Social Impact Consideration with Emphasis on Water Infrastructure Program to Overcome Clean Water Scarcity among Local Communities in East Kalimantan**

Dewi Permatasari ¹, Taryono Mr ², Teguh Vrendy Wibowo Napitupulu ², Suharyono Mr ², Raymond Sibuea ², Era Tjahya Saputra ²
¹ Environmental Professional & Sustainability Practitioner, Indonesia; ² PT Indominco Mandiri, Indonesia

11.35 am **Investigating Sector-Relevant SDGs and Opportunities for Increasing Sustainability Maturity of the Data Centre Industry According to the Triple Bottom Line**

Dominika Izabela Ptach, Deborah Andrews, Simon P. Philbin
London South Bank University, United Kingdom

11.45 am **Round Table & Conclusion**

Schedule

THURSDAY SEPTEMBER 7: PARALLEL SESSIONS

02.00 pm – 03.30 pm

COFFEE BREAK & POSTER SESSION

03.30 pm – 04.30 pm

ASSESSING SUSTAINABILITY OF FLEXIBLE ENERGY SYSTEMS TRANSITION

LOCATION: Théâtre Pasteur

CHAIRS: Anne Prieur-Vernat, *ENGIE, France*
Jan Mertens, *Ghent University, Belgium*

02.00 pm Introduction

02.05 pm Decarbonizing maritime shipping: Life cycle sustainability assessment of a multi-fuel capable propulsion system based on Solid Oxide Fuel Cell technology for maritime shipping

Alena Frehner, René Itten, Matthias Stucki
ZHAW, Switzerland

02.25 pm Environmental consequences of vehicle-to-grid for a future energy system: A case study on the Danish Island Bornholm.

Dominik Huber, Maeva Lavigne Philippot, Maarten Messagie
MOBI Research Group, ETEC Department, Vrije Universiteit Brussel, Belgium

02.45 pm Variation in the GHG emissions from electrolytic hydrogen production in a flexible energy system within the EU legislation framework

Romain Besseau¹, Anne Bouter¹, Oliver Hurtig¹, Alessandro Arrigoni², Marco Buffi¹, Nicolae Scarlat¹
¹ Joint Research Center, Italy; ² Joint Research Center, The Netherlands

03.05 pm Using LCA to demonstrate the environmental relevance of energy management systems

Camille Jeandaux¹, Thomas De Backer², Marie Wouts¹, Xavier Jaspar², Anne Prieur-Vernat¹
¹ ENGIE Lab CRIGEN, France; ² ENGIE Laborelec, Belgium

03.25 pm Wrap-up discussion & Conclusion

TOWARDS CARBON NEUTRALITY WITH LCM (2)

LOCATION: Théâtre Marie Curie

CHAIR: Matthias Finkbeiner, *TU Berlin, Germany*
Ketan Prasad Vaidya, *Northvolt AB, Sweden*

02.00 pm Introduction

02.04 pm **Assessing the product carbon footprint of captured CO₂: A discussion on allocation and its consequences**

Leonard Müller, Betül Kilic Tezcan, Lydia Pforte, Luisa Kühn, Massimo Collotta, Otte Nikolaj Henkel AG & Co. KGaA, Germany

02.18 pm **Challenges of renewable electricity accounting in life cycle assessment**

Peter Karl Rüdiger Holzapfel, Vanessa Bach, Matthias Finkbeiner
Technische Universität Berlin, Germany

02.32 pm **Feasibility and Overcoming Challenges of Integrating Life Cycle Assessment into Carbon Neutrality Scenarios: A French Case Study**

Fanny Caiardi^{1,2}, Catherine Azzaro-Pantel¹, Denis Le-Boulch²

¹ Laboratoire de Génie Chimique, Université de Toulouse, CNRS, INPT, UPS, France;

² EDF R&D, Département TREE, Groupe E3M, EDF Lab Les Renardières, France

02.46 pm **The new TfS guideline for Product Carbon Footprints (PCFs)**

Peter Saling¹, Katherine Agapitos², Nicola Paczkowski¹, Carolin Deregowski¹, Thorsten Rehl³, Robin Jenkins⁴, Dennis Wagner⁵, Karolin Schenk⁵, Suzanne Green⁶, Jason Pierce⁷, Julia Budy⁸, Timm Gruenebaum⁸, Birte Golembiewski⁸, Lydia Pforte⁹, Catherine Yezeguelian¹⁰, Rebecca Steidle¹¹, Dominik Auer¹², Adrian Dietz¹³, Felix Colmorgen¹³

¹ BASF SE, Germany; ² Sika Technology AG, Switzerland; ³ Bayer AG, Germany; ⁴ Corteva, The United States of America; ⁵ Covestro Deutschland AG, Germany; ⁶ Dow, Switzerland;

⁷ Eastman, The United States of America; ⁸ Evonik Operations GmbH, Germany; ⁹ Henkel AG & Co. KGaA, Germany; ¹⁰ Solvay, Belgium; ¹¹ Syngenta, France; ¹² Wacker Chemie AG, Germany; ¹³ Sustainable AG Unternehmensberatung, Germany





THURSDAY

02.00 pm - 03.30 pm

03.00 pm The Journey to Carbon Neutrality for Poultry Industry: A science-based approach

Jessica Hanafi¹, Kevin Monteiro², Ai Leen Wee²

¹ Life Cycle Indonesia, Indonesia; ² Japfa Ltd, Singapore

03.14 pm New Zealand: Moving towards carbon neutral in transport

Febelyn Tria Reguyal, Ajit K Sarmah

The University of Auckland, New Zealand

03.28 pm Conclusion

INNOVATION FOR SUSTAINABLE CONSTRUCTION IN BUILDINGS & CITIES

LOCATION: Salle 3.1

CHAIR: *Adelaide Feraille, Ecole des Ponts ParisTech, France*
Maxime Trocmé, VINCI, France

02.00 pm Introduction

02.05 pm Life cycle assessment-based industrialized building retrofiting
Andreas Ciroth, Claudia Di Noi
GreenDelta, Germany

02.20 pm Plant-based Insulation as Carbon Sink? Life Cycle Assessment of Biochar-Based Building Insulation Materials
Matthias Stucki, Hanna Kröhnert
Zurich University of Applied Sciences, Switzerland

02.35 pm Comparative LCA of single houses rehabilitation : contribution to the Perf In Mind project
Gregory Herfray¹, Marion SIE²
¹ *RECto, France*; ² *VERSo, France*

02.50 pm Resource efficiency of urban districts – A toolbox for planning of ur-ban material flow management systems
Bianca Siedlecki, Steffi Weyand, Liselotte Schebek
Institute IWAR, Material Flow Management and Resource Economy, Technical University of Darmstadt, Germany

03.05 pm Digital solution for intelligent material sourcing and road infrastructure LCA – a case study in Germany
Koji Negishi, Hugo Pley-Leclercq, Léa Fischer, Renaud De Montaignac, Nicolas Miravalls
ORIS, France

03.20 pm Conclusion

LIFE CYCLE SUSTAINABILITY IN TEXTILES

LOCATION: Salle 3.2

CHAIRS: Anne Perwuelz, *ENSAIT, France*
Caroline Bottin, *BUNSHA (BRAND KIABI), France*

02.00 pm Introduction

02.04 pm Environmental assessment of the European apparel market – domestic production, imports and resale

Marie De Saxce¹, Anne Perwuelz²

¹ 2.-0 LCA consultants, France; ² Université Lille, ENSAIT, GEMTEX, France

02.18 pm Repairability of textiles and clothing

Anna Schytte Sigaard, Kirsi Laitala, Charlotte Emilie Tobiassen, Ingun Grimstad Klepp
Consumption Research Norway (SIFO), Norway

02.32 pm Life Cycle Sustainability Assessment of Textile Recycling Efficiencies in Future Waste Market Scenarios

Heather Margaret Logan^{1,2}, Anders Damgaard¹

¹ Technical University of Denmark, Denmark; ² Ghent University, Belgium

02.46 pm Life cycle assessment of a novel fibre-to-fibre solution

Torun Hammar, Anne-Charlotte Hanning
RISE Research Institutes of Sweden, Sweden

03.00 pm Integrating Traceability in Apparel and Footwear Green Claims at the Product Level

Aurelie Perrin¹, Mélissa Monterrat¹, Julien Larrenduche¹, Rachel Gelin¹, Léa Wiederspiel¹,
Léonore Garnier²

¹ EVEA, France; ² FHCM, France

03.14 pm Eco-design of a multifunctional worsted wool men's suit jacket using comparative LCA

Amira Belhaj Rhouma^{1,2,3}, Anne Perwuelz^{1,2}, Charles Lanceron³, Sebastien Francois³, Salma Sahtel⁴

¹ Université Lille, ENSAIT, GEMTEX, France; ² Université Lille, Centrale Lille, France;

³INDUO, France; ⁴ Université Monastir, École nationale d'ingénieurs de Monastir, Tunisie

03.28 pm Conclusion

DIGITIZATION OF PRODUCT ENVIRONMENTAL INFORMATION

LOCATION: Salle 2.3 & 2.4

CHAIRS: William Lepercq, *Schneider Electric, France*
Enrico Benetto, *Luxembourg Institute of Science and Technology, Luxembourg*

02.00 pm Introduction

02.02 pm **A new approach to automate LCA impacts results at commercial reference level**
Manel Sansa, William Lepercq, Benjamin Canaguier, Nicolas Viet, Vanessa Miler-Fels
Schneider Electric, France

02.12 pm **Lessons learned applying topic modelling to improve data processing efficiency when building automatic life-cycle inventories for LCM**
Tomás Navarrete Gutiérrez¹, Antonino Marvuglia¹, Grégor Wernet²
¹ *Luxembourg Institute of Science and Technology, Luxembourg*; ² *PRé Sustainability, The Netherlands*

02.22 pm **Automating PCF calculations in a multi-sectorial chemical industry - Solvay example**
Cécile Querleu, Hubert Sizaret, Charlotte Serre, Matthieu Guirardel
SOLVAY, France

02.32 pm **How to get to a trustful LCA result in complex supply chains using digital tools? – Key challenges and requirements**
Max Rehberger
TÜV SÜD Product Service GmbH, Germany

02.42 pm **Streamlining Life Cycle Management with AI and Machine Learning**
Alexander Forell, Sophia Kieselbach, Fabian Hassel
Makersite, Germany

02.52 pm **Analysis of Primary Data Share as a rising indicator for supply chain specificity**
Florian Ansgar Jaeger¹, Peter Karl Rüdiger Holzapfel², Johanna Tesch², Matthias Finkbeiner²
¹ *Siemens AG, ID FA MF Product Carbon Footprint, Germany*; ² *Technische Universität Berlin, Institute of Environmental Technology, Germany*

03.02 pm Panel discussion



- 03.20 pm** **Poster spotlights**
- 03.20 pm** **Life cycle information available at scale: integrating environmental footprinting on the NutriNet**
Ellie Williams, Laura Schumacher
PRé Sustainability
- 03.23 pm** **Development of a comprehensive climate change model for Castrol’s global product portfolio**
James Tipper, Peter Shonfield
ERM, United Kingdom
- 03.26 pm** **Integration of LCA data and EPDs in BIM using the Belgian LCA tool TOTEM**
Lisa Damen^{1,2}, Damien Trigaux^{1,2,3}, Joren Mijndonckx^{1,2}, Steven Claes^{1,2}
¹ VITO, Belgium; ² EnergyVille, Belgium; ³ KU Leuven, Belgium
- 03.29 pm** **Conclusion**

Schedule

THURSDAY SEPTEMBER 7: PARALLEL SESSIONS

04.30 pm – 06.00 pm

CHALLENGES & METHODS FOR QUANTIFYING THE BENEFITS OF RECYCLING IN LCM

LOCATION: Théâtre Pasteur

CHAIR: Steven De Meester, *Ghent University, Belgium*
Milad Golkaram, *Scientist, TNO, The Netherlands*

04.30 pm Introduction

04.33 pm Assessing the net benefits and loads occurring outside of the boundaries (module D) for an electrical equipment

Benjamin Canaguier¹, Manel Sansa², Julien Mulot³, Hervé Davail⁴, Emmanuelle Brière⁵,
Violine OHL-Gasteau⁶, David Dupuis⁷, Marlène Demicheli⁸

^{1,2} Schneider Electric; ³ Eaton Industries France SAS; ⁴ Legrand; ⁵ Groupe Atlantic; ⁶ PEP
ecopassport; ⁷ Hager Group; ⁸ Bureau Veritas – ^{1 to 8} from PEP Ecopassport, France

04.47 pm A new process cost-based allocation method is needed for integrated smelter-refineries

Gert Van Hoof, Bénédicte Robertz, Thorsten Rieke, Steven Art
Umicore, Belgium

05.01 pm Disassembly: The Key to Unlocking an enhanced Circular Future

Bruce Lim², Torsten Hummen¹, Ann-kathrin Wimmer¹

¹ Robert Bosch GmbH, Corporate Research, Germany; ² Robert Bosch (SEA) Pte Ltd,
Corporate Research, Germany

05.15 pm Recovery of thermoplastics and flame retardants from mixed WEEE and EoL vehicles, an LCA evaluation

Loan Terrien¹, Pierre Fiasse²

¹ Materia Nova, Belgium; ² COMET Traitement SA, Belgium

05.29 pm Life Cycle Sustainability Assessment of a novel recycling process for concrete waste

Carla Scagnetti¹, Rafael Horn¹, Jonas Keller¹, Florian Gehring¹, Volker Thome²,
Thomas Hess³

¹ Fraunhofer IBP, Department of Life Cycle Engineering, Germany; ² Fraunhofer IBP,
Department of Inorganic Materials and Recycling, Germany; ³ Leiblein GmbH, Germany

05.43 pm Poster spotlights



- 05.43 pm **Identification of relevant indicators to assess end of life benefits of a product**
Benjamin Canaguier, Manel Sansa, William Lepercq, Amélie Barahona, Delphine Surun,
Claire Allegret
Schneider Electric, France
- 05.46 pm **Comprehensive model-based environmental impact evaluation of recycling routes**
Abdur-Rahman Ali, Jana Husmann, Juan Felipe Cerdas Marin, Christoph Herrmann
Technische Universität Braunschweig, Germany
- 05.49 pm **Assessing Advantages of Metal Recycling by Process Simulation and LCA: An EV Case Study**
Yvonne Kaye Magallano Perocillo, Gwenaél Dielie, Eric Pirard, Angélique Léonard
University of Liège
- 05.52 pm **Comparing the resource efficiency and environmental performance of life-extension and recycling alternatives for wind turbine blades**
Borja Díez Cañamero¹, Joan Manuel F. Mendoza^{1,2}
¹ *Mondragon Unibertsitatea, Faculty of Engineering, Mechanics and Industrial Production, Spain;* ² *Ikerbasque, Basque Foundation for Science, Spain*
- 05.55 pm **How to account for environmental consequences of plastics recycling in the future?**
Roel Johannes Karel Helmes¹, Willem-Jan van Zeist¹, Iris Vural Gursel², Daan S. van Es²,
Lusine Aramyan¹
¹ *Wageningen Economic Research, The Netherlands;* ² *Wageningen Food & Biobased Research, The Netherlands*
- 05.58 pm **Conclusion**

ADVANCES IN LCM THROUGH AI, DATA SCIENCE & MACHINE LEARNING

LOCATION: Théâtre Marie Curie

CHAIRS: Raoul Meys, *Carbon Minds, Germany*
Artur Schweidtmann, *Delft University of Technology, The Netherlands*

04.30 pm Introduction

04.35 pm Expanding the Reach of Life Cycle Assessment with Artificial Intelligence

David Adiwijaya, Jessica Hanafi, Henry Tan

Life Cycle Indonesia, Indonesia

04.50 pm Stoichiometry-based prediction of life cycle inventories: Benchmarking & best practices

Tim Langhorst¹, Benedikt Winter¹, Dennis Roskosch¹, André Bardow^{1,2}

¹ Energy and Process Systems Engineering, ETH Zurich, Switzerland; ² Institute for Energy and Climate Research - Energy Systems Engineering (IEK-10), Forschungszentrum Jülich GmbH, Germany

05.05 pm Environmental impact prediction of chemical processes using graph neural networks

Lukas Schulze Balhorn¹, Qinghe Gao¹, Alessandro Laera¹, Jana M. Weber², Raoul Meys³, Artur M. Schweidtmann¹

¹ Process Intelligence Research, Department of Chemical Engineering, Delft University of Technology, The Netherlands; ² Pattern Recognition and Bioinformatics, Department of Intelligent Systems, Delft University of Technology, The Netherlands; ³ CarbonMinds GmbH, Germany

05.20 pm A Novel Framework using Artificial Neural Networks to Predict Environmental Impacts of Construction Products

Anish Koyampambath¹, Julian Baehr², Eduardo dos Reis³, Carolina Szablewski⁴, Liselotte Schebek², Guido Sonneman¹, Naeem Adibi⁴

¹ Institute of Molecular Sciences, University of Bordeaux, Centre National de la Recherche Scientifique, France; ² Institute IWAR Material Flow Management and Resource Economy, Technical University Darmstadt, Germany; ³ Data and AI Systems, Department of Computer Science, Technical University Darmstadt, Germany; ⁴ WeLOOP, France





THURSDAY

04.30 pm – 06.00 pm

- 05.35 pm** **Exploring the Potential of Word Vectorization for Automatic Prediction of Green house Gas Emission Factor: Supervised Learning in Inventory Database for Environmental Analysis (IDEA) using word2vec**
Riku Ishioka, Dami Moon, Yoshihiro Kawahara
The University of Tokyo, Japan
- 05.50 pm** **Panel discussion & conclusion**

LIFE CYCLE MANAGEMENT IN THE BIO-ECONOMY

LOCATION: Salle 3.1

CHAIRS: Tomas Rydberg, *IVL Swedish Environmental Research Institute, Sweden*
Alberto Bezama, *Helmholtz Centre for Environmental Research - UFZ, Germany*

04.30 pm Introduction

04.35 pm **Between Climate Resilience and Sustainability: An LCA-based Stochastic Linear Programming Approach for Second-Generation Bioethanol Production in the EU**
Martin Bruckler, Lars Wietschel, Lukas Messmann, Andrea Thorenz, Axel Tuma
Resource Lab, University of Augsburg, Germany

04.50 pm **Challenges in carrying out comparative LCA of biobased products with their fossil based counterparts**
Iris Vural Gursel
Wageningen University & Research, The Netherlands

05.05 pm **Integrated LCA of decarbonisation scenarios for an industrial bioeconomy network**
Alberto Bezama¹, Jakob Hildebrandt², Daniela Thrän¹
¹ *Helmholtz Centre for Environmental Research - UFZ, Germany;* ² *ZIRKON - Zittauer Institut für Verfahrensentwicklung, Kreislaufwirtschaft, Oberflächentechnik, Naturstoffforschung. Hochschule Zittau/Görlitz*

05.20 pm **Dynamic Carbon Accounting on bio-based feedstocks for bio-plastics production**
Deepa Govindarajan, Ananda Sekar
SABIC, India

05.35 pm **Poster spotlights**



- 05.35 pm** Identifying gaps for a comprehensive Life Cycle Sustainability Assessment of bio-based sectors in Europe: state-of-the-art and results from a preliminary hotspot analysis
Alexandre Charpentier Poncelet¹, Ricardo Mendez², Thomas Schaubroeck³, Benedetto Rugani³, Emma Moberg⁴, Tomas Rydberg⁴, Milena Amaral⁵, Sam Herlicq¹, Carolina Szablewski¹, Naeem Adibi¹
¹ WeLOOP, France; ² Contactica, Spain; ³ LIST, Luxembourg; ⁴ IVL, Sweden; ⁵ Neovili, France
- 05.40 pm** The role of biofuels in the future of heavy-duty road transport
Ief Jaspers¹, Stefanie Van Damme¹, Victor Blancart², Steven Van Hemelryck¹, Naeem Adibi², Jan Robberecht¹
¹ Colruyt Group, Belgium; ² WeLoop, France
- 05.45 pm** Life cycle management of a willow plantation in a global biorefinery context
Laura Yonge, Olivier Talon
Materia Nova, Belgium
- 05.50 pm** Applying the S-LCA approach to a new fertilizer obtained by biowaste: preliminary results
Enrica Imbert, Annarita Colasante
UnitelmaSapienza, University of Rome, Italy
- 05.55 pm** Conclusion

DEVELOPING THE FUTURE LIFE CYCLE NETWORK

LOCATION: Salle 3.2

CHAIRS: Anna Charlotte Wikström, *Chalmers University of Technology, Sweden*
Debbie Steckel, *ACLCA, The United States of America*

04.30 pm Introduction

04.35 pm Learnings, success stories and views from Swedish Life Cycle Center
Anna Charlotte Wikström, Maria Rydberg
Swedish Life Cycle Center/Chalmers University of Technology, Sweden

04.43 pm FSLCI - A community approach to accelerate Life Cycle Innovation globally
Philip Strothmann, Guido Sonnemann, Martina Prox, Sanjeevan Bajaj
Forum for Sustainability through Life Cycle Innovation e.V., Germany

04.51 pm Becoming mainstream after three decades; what are the consequences?
Mark Goedkoop, Eric Mieras
PRé Sustainability, The Netherlands

04.59 pm Life cycle management in industry – supporting business with life cycle-based assessments along value chains
Ulla Létinois¹, Peter Saling², Nikolaj Otte³, Florian Ansgar Jäger⁴, Sara Bello⁵, Alexander Cremer⁴, Ivana Dencic⁶, Thomas Fugger⁷, Jan Bollen⁸
¹ DSM Nutritional Products Ltd., The Netherlands; ² BASF SE, Germany; ³ Henkel AG & Co. KGaA, Germany; ⁴ Siemens AG, Germany; ⁵ Syngenta AG, Switzerland; ⁶ Corbion, The Netherlands; ⁷ Volkswagen AG, Germany; ⁸ ArcelorMittal Europe

05.07 pm ESTAINIUM Association – developing mutual solutions to drive industrial decarbonization
Johannes Wunderlich¹, Nina Rauh¹, Florian Ansgar Jaeger¹, Max Rehberger², Eberhard Niggemann³, Ulrich Grauvogel⁴, Sven Kurrle⁵, Jonathan Fuchs⁶
¹ Siemens AG (SiGREEN), Germany; ² TÜV SÜD Product Service GmbH, Germany; ³ Weidmüller GmbH & Co KG, Germany; ⁴ BISON FOREST GmbH, Germany; ⁵ Ferdinand Steinbeis Institut, Germany; ⁶ Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

05.15 pm Panel discussion with questions & conclusion

ENVIRONMENTAL IMPACTS & BENEFITS OF DIGITAL SERVICES

LOCATION: Salle 2.3 & 2.4

CHAIRS: Margaux Escande, *IT's on us, France*
Agnes Comte, *BANQUE DE FRANCE, France*

04.30 pm Introduction

04.35 pm Looking up into the sky – dependency of digital services on outer space and related environmental impacts

Karin Treyer¹, Mathieu Udriot²

¹ *Laboratory for Energy Systems Analysis, Paul Scherrer Institute, Switzerland;* ² *EPFL Space Center (eSpace), Switzerland*

04.50 pm Assessing the environmental impacts of digital tools in agriculture and food supply chain: a state-of-the-art

Clémence Huck^{1,2}, Thibault Salou^{1,2}, Alexia Gobrecht¹, Eleonore Loiseau^{1,2}, Véronique Bellon-Maurel¹

¹ *ITAP, Univ Montpellier, INRAE, Institut Agro, Montpellier, France;* ² *Elsa, Research Group for Environmental Lifecycle & Sustainability Assessment, Montpellier, France*

05.05 pm LCA of a showcase website, a typical digital service use case

Adrien Berthelot^{1,2,3}, Eddy Carron¹, Laurent Lefèvre², Alexis Nicolas³

¹ *ENS de Lyon, France;* ² *Inria, France;* ³ *OCTO Technology, France*

05.20 pm CEDaCI – an overview of outputs, achievements, and inspiring change in the data centre industry

Deborah Andrews¹, Naeem Adibi², Beth Whitehead³, Kristina Kerwin¹, Victor Blancart², Dominika Ptach¹, Bahatin Bademci¹, Rich Kenny⁴, Astrid Wynne⁴, Paul Suski⁵, Justus Geibler⁵

¹ *London South Bank University, United Kingdom;* ² *WeLOOP, France;* ³ *Operational Intelligence, United Kingdom;* ⁴ *Techbuyer, United Kingdom;* ⁵ *Wuppertal Institute for Climate, Environment, Energy, Germany*

05.35 pm Conclusion

Schedule

FRIDAY, SEPTEMBER 8: PARALLEL SESSIONS

09.00 am – 10.30 am

COFFEE BREAK & POSTER SESSION

10.30 am – 11.00 am

PRODUCT DESIGN FOR SUSTAINABLE LCM (1)

LOCATION: Théâtre Pasteur

CHAIRS: Nicolas Perry, *Arts et Métiers, France*
Yaw Sasu-Boakye, *IKEA, Sweden*

09.00 am Introduction

09.04 am Next Level Lightweight Production (NeLiPro)

Eva Sophie Jurgeleit, Stefanie Meilinger, Simon Heinz Michael Dahmen
University of Applied Sciences Bonn-Rhein-Sieg; International Center for Sustainable Development (IZNE), Germany

09.14 am The future generation of lightweight materials? A Life Cycle Assessment for innovative lightweight structures

Suzana Ostojsic¹, Patrick Haun², Marzia Traverso¹, Philipp Müller², Levin Schilling³, Robert Kupfer³

¹ Institute of Sustainability in Civil Engineering (INaB), RWTH Aachen University, Germany;

² Porsche AG, Germany; ³ Institut für Leichtbau und Kunststofftechnik (ILK), TU Dresden, Germany

09.24 am Assessing the Sustainability of Steel Products in the Context of Emerging Frameworks and Targets

Nick Coleman, Marta Cruz Fernandez, Peter Hodgson, Simon Ryalls, Chris Phillips
Tata Steel UK Limited, United Kingdom

09.34 am Round table

09.46 am A methodological approach for implementing screening LCA into the early phases of product development

Paul Hoffeins¹, Fabian Folprecht¹, Maik Gude¹, Michelle Funk², Christian Weidemann³

¹ TU Dresden, Germany; ² iPoint-systems gmbh, Germany; ³ Siemens AG, Germany

09.56 am Ecodesign approach for complex systems - How to design attractive and sustainable vehicles

Nicolas Tchertchian¹, Thomas Richard De Latour², Dominique Millet¹, Raphael Chenouard²

¹ Université de toulon, France; ² Nantes Université, École Centrale Nantes, CNRS, LS2N, UMR 6004, France





FRIDAY

09.00 am – 10.30 am

- 10.06 am** **Going completely new ways for sustainability: Methods to develop and implement radical sustainable innovations in companies**
Claus Lang-Koetz, Celine Böhringer, Sven Schimpf
Pforzheim University, Germany
- 10.16 am** **Round table**
- 10.28 am** **Conclusion**



FRIDAY

09.00 am – 10.30 am

TRANSITIONING TOWARDS SUSTAINABLE VALUE CHAINS FOR CHEMICALS & MATERIALS (1)

LOCATION: Théâtre Marie Curie

CHAIRS: Guido Sonnemann, *Université de Bordeaux, France*
Ananda Kumaran Sekar, *SABIC, India*

09.00 am Introduction

09.04 am Market based chain of custody models in LCAs & implications for the chemical industry
Betül Kilic Tezcan, Lydia Pforte, Luisa Kühn, Massimo Collotta, Leonard Müller, Nikolaj Otte
Henkel AG & Co. KGaA, Germany

09.18 am Comparative life cycle sustainability assessment of chemical and enzymatic production:
the case of isopropyl palmitate
Pieter Nachtergaele, Maíra Caetano de Andrade, Jordy Motte, Jo Dewulf
Ghent University, Belgium

09.32 am The importance of hazardous substance tracking during the life cycle of circular
products.
Marco Mense, Max Sonnen
Ecomatters, The Netherlands

09.46 am A case study on the implementation of LCA in the Safe and Sustainable by Design.
Challenges and way forward
Davide Tosches^{1,2}, Carla Caldeira¹, Francesca Demichelis², Debora Fino², Serenella Sala¹
¹ Joint Research Center, Italy; ² Politecnico di Torino, Italy

10.00 am Decarbonization of the chemical industry by Circular Economy concepts
Christian Krüger, Peter Saling
BASF, Germany

10.14 am Green chemistry vs. life cycle impact metrics: Does green necessarily mean
sustainable?
Elysia Lucas, Gonzalo Guillén-Gosálbez
Department of Chemistry and Applied Biosciences, ETH Zürich, Switzerland

10.28 am Conclusion

INFORMING & STIMULATING GREEN LIFESTYLE CHOICES**LOCATION:** Salle 3.1**CHAIRS:** Michiel De Bauw, *Sciensano, Belgium*
Yolan Gielen, *Happonomy, Belgium***09.00 am** Introduction**09.04 am** A detailed analysis of the carbon footprint linked to consumption in Canada and its provinces.Maxime Agez, Laure Patouillard, Anne de Bortoli, Cécile Bulle
*CIRAIG, Canada***09.14 am** The role of consumer's practices in Life Cycle Management: combining Life Cycle Assessment with Practice TheoryMonia Niero^{1,2}, Yannick Kofoed Drejer², Lasse Langstrup Hågerstrand², Félix Elkær Nicot², Nina Helle Thulstrup², Phuongdan Hoai Truong², Charlotte Louise Jensen²
¹ Sant'Anna School of Advanced Studies Pisa, Italy; ² Aalborg University, Department of Planning, Denmark**09.24 am** Climate duel - The climate wins: A gamification approach to Education for Sustainable Development (ESD) at university levelSabine Frej, Matthias Stucki
*ZHAW IUNR Wädenswil, Switzerland***09.46 am** Digital Receipt Based Monitoring of Carbon and Biodiversity Footprints of Individual Food BasketsSilvan Wanner¹, Matthias Stucki¹, Kevin O'Sullivan²
¹ Zurich University of applied sciences, Switzerland; ² Department of Management, Technology and Economics, ETH Zürich, Switzerland**09.56 am** Informing and individual behavioural change in perspectiveErik Mathijs
*KU Leuven, Belgium***10.04 am** Panel discussion & conclusion

NEW METHODOLOGICAL DEVELOPMENTS FOR LCM

LOCATION: Salle 3.2

CHAIRS: Jo Dewulf, *Ghent University, Belgium*
Shaniq Ursula Pillay, *PRé Sustainability, The Netherlands*

09.00 am Introduction

09.04 am Marine biodiversity impacts of offshore wind farms decommissioning

Liv Kristensen Stranddorf¹, Liv Kristensen Stranddorf²

¹ Vattenfall A/S, Denmark; ² Section for Quantitative Sustainability Assessment, Department of Environmental and Resource Engineering, Technical University of Denmark, Produktionstorvet, Denmark

09.18 am Integration of the new biodiversity indicator (BioMAPS) into Sphera's Managed LCA Content

Erik Pauer, Daniel Thylmann, Ulrike Bos

Sphera Solutions GmbH, Germany

09.32 am Life Cycle Management of systems with heterogeneous life cycles of system elements

Vivien Langer, Kristina Höse, Annika Tampe, Uwe Götze

Chemnitz University of Technology, Germany

09.46 am Development of Life Cycle Inventory Analysis Methodology of Structural Materials Considering Properties

Yuichiro Hara, Kentaro Takeyama, Takeo Hoshino

University of Tokyo, Japan

10.00 am Contribution of products and technologies to the achievement of the sustainable development goals – A quantitative calculation approach

Alexander Barke^{1,3}, Christian Thies², Thomas S. Spengler^{1,3}

¹ Technische Universität Braunschweig, Germany; ² Hamburg University of Technology;

³ Cluster of Excellence "SE²A – Sustainable and Energy-Efficient Aviation"





FRIDAY

09.00 am – 10.30 am

- 10.14 am** **Reconciling regional production with sustainability: a novel methodological framework to assess the sustainability of PDO agro-food products**
Barbara Madeleine Mejía, Martin Stüssi, Gérard Gaillard, Mélanie Douziech
Research group LCA, Agroscope, Switzerland
- 10.28 am** **Conclusion**



FRIDAY

09.00 am – 10.30 am

STRATEGY FOR COLLECTION OF LCA DATA FROM SUPPLIERS

LOCATION: Salle 2.3 & 2.4

CHAIRS: Rupert J. Baumgartner, *University of Graz, Austria*
Bálint Simon, *Mitsubishi Chemical Europe, Germany*

09.00 am Introduction

09.04 am Perspectives and challenges of supplier-specific data collection – ArcelorMittal experience

Diana Indrade

ArcelorMittal Maizières Research, France

09.18 am Analysis of Secondary Raw Materials for Steel and Copper

Gozde Kaya Avsar, Luca Marcolongo

ABB, Italy

09.32 am Connecting the Internet of Things to a Digital Ecosystem for Streamlined Environmental Assessments

Didier Beloin-Saint-Pierre

Empa, Switzerland

09.46 am How to automatise life cycle analysis in the context of electrical and electronic equipments

Axelle Noémie Bertrand^{1,2}, Tom Bauer³, Carole Charbuillet³, Martin Bonte², Marie Voyer²,
Nicolas Perry¹

^{1,3} Arts et Métiers, CNRS, Université de Bordeaux, France; ² Qweeko, France;

10.00 am How can CO2 emissions data be requested and offered within the supply chain to provide a transparent basis for achieving decarbonization targets in the automotive industry?

Ann-Carina Tietze

Volkswagen AG, Germany



10.14 am The TfS solution for a PCF sharing platform

Lydia Pforte¹, Petra Lehmann², Yvonne Heischkel³, Matthias Wagenbreth³, Julia Spiekermann⁴
Jens Plambeck⁴, Anne Troost⁵, Rainer Fischer⁶, Natalie Cueni⁶, Timm Grünebaum⁷, Julia
Martius⁷, Philipp Gaulke⁸, Rohit Megaraj⁹, Björn Ebeling¹⁰, Tess Colijn¹¹, Michele Schuler¹¹,
Charlotte Serre¹², Gaëlle Guyonnaud¹², Dominic Newbury¹³, Mohamed Abdel Magied¹⁴, Anne
Lamy¹⁴, Piet Guiellaume¹⁴, Yves Matter¹⁵, Jakob Smets¹⁶, Vidale Derika¹⁷, Matthias Habermann¹⁸,
Ralph Lange¹⁹

¹ Henkel AG & Co. KGaA, Germany; ² Akzo Nobel GmbH, Germany; ³ BASF SE, Germany;
⁴ BAYER AG, Germany; ⁵ Brenntag SE, Germany; ⁶ Clariant AG, Switzerland; ⁷ Evonik Industries
AG, Germany; ⁸ LANXESS AG, Germany; ⁹ Lyondellbasell Industries, The Netherlands; ¹⁰ Merck
KGaA, Germany; ¹¹ Sika AG, Global; ¹² Solvay, Belgium; ¹³ Syngenta Crop Protection AG,
Switzerland ; ¹⁴ Givaudan SA, Switzerland; ¹⁵ Arkema S.A., France; ¹⁶ Together for
Sustainability AISBL (TfS), Belgium ; ¹⁷ Eastman Chemical Company, The United States of
America; ¹⁸ Wacker Chemie AG, Germany; ¹⁹ Covestro AG, Germany

10.28 am Conclusion

Schedule

FRIDAY, SEPTEMBER 8: PARALLEL SESSIONS

11.00 am – 12.30 pm

LUNCH BREAK & POSTER SESSION

12.30 pm – 01.30 pm

PRODUCT DESIGN FOR SUSTAINABLE LCM (2)**LOCATION:** Théâtre Pasteur**CHAIRS:** Stephane Morel, Quantis & ESCP, France**11.00 am** Introduction**11.04 am** Implementation of Circularity Principles in Industrial Product Design

Annika Pruhs ¹, Anina Kusch ¹, Torsten Hummen ², Ralf Mendgen ², Tobias Viere ¹,
Jörg Woidasky ¹

¹ Institut for Industrial Ecology (INEC) at Pforzheim University, Germany; ² Robert Bosch GmbH Corporate Research and Advance Development, Robert-Bosch-Campus 1, Germany

11.14 am Life cycle thinking as foundation for sustainable business transformations

Till Weidner, Maurice Bethke, Jan-Markus Rödger
Implement Consulting Group, Switzerland

11.24 am The GreenLab4IoT project : development of an IoT measurement testbench for better ecodesign Environmental Assessments

Stéphane Le Pochat ¹, Gwenaëlle Souffran ¹, Olivier Philippot ², Thierry Leboucq ²
¹ EVEA, France; ² GREENSPECTOR, France

11.34 am Round table**11.46 am** Carbon footprint study of Volvo C40 Recharge – use of conclusions in development work and implications for future studies

Rei Palm, Johanna Berlin
Volvo Cars, Sweden

11.56 am Schneider Electric, return of experience of 2 decades of sustainability integration into product design

Benjamin Canaguier, Manel Sansa, Nicolas Ortiou, Meriem Kellou, Djamila Saou, Bruno Lomba
Schneider Electric, France





FRIDAY

11.00 am – 12.30 pm

12.06 pm Ecodesign AFM / metabolism approach for Paris olympic games

Guilhelm Das, Caroline Louis

Paris 2024 - Comité d'organisation des Jeux Olympiques, France

12.16 pm Round table

12.28 pm Conclusion



FRIDAY

11.00 am – 12.30 pm

TRANSITIONING TOWARDS SUSTAINABLE VALUE CHAINS FOR CHEMICALS & MATERIALS (2)

LOCATION: Théâtre Marie Curie

CHAIRS: Gonzalo Guillén-Gosálbez, *ETH, Switzerland*
Peter Saling, *BASF, Germany*

11.00 am Introduction

11.04 am Cleaner Cleaning with CO₂-based Surfactants: A Cradle-to-Grave Life Cycle Assessment

Stefan Eichwald¹, Marc Wollenweber², Jade Tessien², Jake Ouellet², Olga Linker³, Marina Sebastian³, Daniel Brüggemann⁴, Reinhard Schomäcker⁴, Henner Hollert², Niklas von der Aßen^{1,5}

¹ RWTH Aachen University, Germany; ² Goethe University Frankfurt, Germany; ³ Covestro Deutschland AG, Germany; ⁴ Technical University of Berlin, Germany; ⁵ Forschungszentrum Jülich GmbH, Germany

11.18 am Coupling LCA and mass-balance approach for bio-circular products at Solvay

Cécile Querleu, Roméo Puech, Estelle Cohet, Chloé Moreau, Max Chabert
SOLVAY, France

11.32 am Tiered approach for product development based on environmental performance

Tom Ligthart¹, Lia de Simon¹, Martijn Zebregs², Richard Bouma²

¹ TNO, Energy & Materials Transition; ² TNO, Defence, Safety & Security

11.46 am Predicting the environmental impacts of novel electrochromic displays architectures using prospective life cycle assessment

A. Kamal Kamali, Daye Lee, Guido Sonnemann
University of Bordeaux, France

12.00 pm Development of a site-specific LCA model to assess pathways towards a net-zero chemical industry

Ronja Hermanns¹, Laura Stellner¹, Arne Kätelhön¹, Raoul Meys^{1,2}

¹ Carbon Minds, Germany; ² Institute for Technical Thermodynamics, Germany





FRIDAY

11.00 am – 12.30 pm

12.14 pm **Where can we find the best data for the LCA of chemicals?**

Christopher Oberschelp ^{1,2}, **Stefanie Hellweg** ^{1,2}, **Eric Bradford** ^{1,2}, **Stephan Pfister** ^{1,2}, **Jing Huo** ^{1,2}, **Zhanyun Wang** ^{1,2,3}

¹ *ETH Zurich, Switzerland*; ² *National Centre of Competence in Research (NCCR) Catalysis, Switzerland*; ³ *empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland*

12.28 pm **Conclusion**

LCM APPLIED TO FOOD, AGRICULTURE & BEVERAGES (1)**LOCATION:** Salle 3.1**CHAIRS:** **Sergiy Smetana**, *DIL German Institute of Food Technologies (DIL e.V.), Germany*
Viktor Klochko, *AB InBev, Czech Republic***11.00 am** Introduction**11.04 am** **Urbanisation of food production: Can indoor vertical farming reduce the footprint of kitchen herbs?****Silvan Wanner**, **Matthias Stucki**, **Michael Götz**
*Zurich University of applied sciences, Switzerland***11.18 am** **Environmental impacts of agricultural robots and possible improvements: example of weeding robots used in vineyards****Marilys Pradel**¹, **Cédric Segueineau**²
¹ *INRAE, UR TSCF, France*; ² *Naïo Technologies, France***11.32 am** **Making the business case for a more resource-efficient food sector: case study on artificial intelligence in bakeries****Yanne Goossens**, **Thomas Schmidt**
*Thünen Institute of Market Analysis, Germany***11.46 am** **SustainIT: sector-driven platform for alignment and scalability of sustainability metrics between suppliers and buyers****Marcela Porto Costa**¹, **Felix Holdorf**², **Claudia Sulowska**², **Thomas L Oldfield**¹
¹ *Olam Group, United Kingdom*; ² *Olam Group, Netherlands*;**12.00 pm** **An environmental sustainability assessment of several packed food products: some key lessons****Lieselot Boone**¹, **Trang T. Nhu**¹, **An Vermeulen**^{1,2}, **Jo Dewulf**¹
¹ *Ghent University, Belgium*; ² *Pack4Food, Belgium*;**12.20 pm** Conclusion

EVALUATING THE SUSTAINABLE USE OF RESOURCES**LOCATION:** Salle 3.2**CHAIRS:** **Stephanie Muller**, *BRGM, France*
Frédéric Goettmann, *Extracthiv, France***11.00 am** Introduction**11.04 am** **Abiotic resource metrics in Life Cycle Impact Assessment: A review from a cultural theory point of view and perspectives for the future within the transition to a low carbon economy****Alexandre Charpentier Poncelet**¹, **Guido Sonnemann**², **Anish Koyamparambath**², **Naeem Adibi**¹¹ *WeLOOP, France*; ² *Institute of Molecular Sciences, University of Bordeaux, Centre National de la Recherche Scientifique, Bordeaux INP, ISM, UMR 5255, France***11.18 am** **From extraction to dissipation in life cycle impact assessment of mineral resource use – A review, case study, and outlook****Markus Berger***University of Twente, The Netherlands***11.32 am** **Closing material loops with life cycle resource indicators in waste management**
Georgia Psyrri, **Ana Teresa Macas Lima**, **Michael Zwicky Hauschild**, **Thomas Fruergaard Astrup***DTU, Denmark***11.46 am** **Assessing and improving the resource efficiency of refractories recycling: a comprehensive analysis accounting for resource losses, environmental impacts and economic benefits****Stephanie Muller**¹, **Frédéric Lai**¹, **Antoine Beylot**¹, **Ambroise Lachat**¹, **Tom Huppertz**²,
Elisabeth Van Overbeke², **Quentin Ricoux**³¹ *BRGM, France*; ² *RDC Environment, Belgium*; ³ *Extracthiv Ceramics Recycling, France*



FRIDAY

11.00 am – 12.30 pm

12.00 pm Characterizing Raw Material’s Criticality within LCSA According to Stakeholders’ Requirements

Isadora Hackenhaar¹, Gustavo Moraga¹, Gwenny Thomassen¹, Jo Dewulf¹, Till M. Bachmann², Federica Blasioli², Thomas Sonderegger³

¹Research Group Sustainable Systems Engineering (STEN) – Ghent University, Coupure Links 653, Belgium; ²European Institute for Energy Research (EIFER) EDF-KIT EEIG, Germany; ³ecoinvent, Switzerland

12.14 pm Volvo Cars’ new methodology to rank the sustainability impacts of raw materials

Lisbeth Dahllöf, Linnea Petersson, Martha Amwele, Simon Aglund, Johanna Berlin
Volvo Cars, Sweden

12.28 pm Conclusion

VALORIZATION OF LCA RESULTS IN A LCM PERSPECTIVE (1)**LOCATION:** Salle 2.3 & 2.4**CHAIRS:** Denis Le-Boulch, *EDF, France*
Philippe Osset, *SCORELCA, France***11.00 am** Introduction**11.10 am** The use of LCA in a large industrial group: 15 years of experience at ArcelorMittal
Anne-Laure Hettinger
*ArcelorMittal, France***11.25 am** Multi-criteria evaluation methods of environmental, social and economic impacts
Tom Huppertz¹, José Rafael Dulbecco¹, Bernard De Caemel¹, Alessandra Zamagni²
¹ *RDC Environment, Belgium*; ² *Ecoinnovazione, Italy***11.40 am** Ecotoxicity in LCA: how to guide practitioners towards sound decision making for business?
Aurore Wermeille¹, Céline Gentil-Sergent², Magdalena Czyrnek-Delêtre³, Célia Chamillard³, Eugène Pipraud³, Jade Garcia⁴, Philippe Osset⁴, Anne-Claire Asselin¹
¹ *Sayari, France*; ² *ITAB, French Research Institute of Organic Food and Farming, France*;
³ *I-Care, France*; ⁴ *SCORE LCA, France***11.55 am** Innovative methods for resources use in LCA
Tom Huppertz¹, Antoine Beylot², Bernard De Caemel¹
¹ *RDC Environment, Belgium*; ² *BRGM, France***12.10 pm** Conclusion

Schedule

FRIDAY, SEPTEMBER 8: PARALLEL SESSIONS

01.30 pm – 03.00 pm

APPLICATION OF LCSA IN THE INDUSTRY**LOCATION:** Théâtre Pasteur**CHAIRS:** Marzia Traverso, *RWTH Aachen University, Germany*
Nils Jäger, *thyssenkrupp Steel Europe AG, Germany***01.30 pm** Introduction**01.34 pm** A case study of sustainability assessment in the mining sectorLucia Rigamonti, Giuseppe Cecere, Hazem Eltohamy
*Politecnico di Milano, Italy***01.48 pm** Life cycle sustainability assessment and raw material criticality assessment as inter-related tools for supply chain risks management: the case of bio-based solventsNoémie Leroy-Parmentier^{1,2}, Philippe Loubet¹, Maïder Saint-Jean², Guido Sonnemann¹
¹ *Université Bordeaux, CNRS, Bordeaux INP, ISM, UMR 5255, France*; ² *Bordeaux Sciences Economiques (BSE) UMR 6060, Bordeaux University, France***02.02 pm** A methodology for Life Cycle Sustainability Assessment in road pavements industriesGabriella Buttitta¹, Ana Jimenez Del Barco Carrion², Elizabeth Keijzer³, Bjorn Kalman⁴, Ahmed Abed², Tony Parry², Davide Lo Presti^{1,2}
¹ *Dipartimento di Ingegneria Università degli Studi di Palermo, Viale Delle Scienze, Italy*;
² *Nottingham Transportation Engineering Centre University of Nottingham, University Park, United Kingdom* ; ³ *TNO Rijksuniversiteit, Princetonlaan 6, The Netherlands*; ⁴ *Statens väg- & transportforskningsinstitut, Sweden***02.16 pm** Indoor paints for concrete walls using biomass balance binders: a chemicals case study applying the ORIENTING LCSA methodologyPeter Saling¹, Julia Carey¹, Alexander Assmann¹, Andreas Engel¹, Markus Lohscheidt¹, Stefan Weiner¹, Carla Scagnetti², Marina Isasa Sarralde³
¹ *BASF SE, Germany*; ² *Fraunhofer Institute for Building Physics IBP, Germany*; ³ *Tecnalia, Spain*

- 02.30 pm** **ORIENTING's LCSA methodology – lessons learnt from industrial testing**
Hanna Pihkola¹, **Marina Isasa**², **Till M. Bachmann**³, **Alessandra Zamagni**⁴, **Isadora Correa**⁵,
Rafael Horn⁶, **Katri Behm**¹, **Carla Scagnetti**⁶, **Peter Saling**⁷, **Marjukka Kujanpää**⁸
¹ VTT Technical Research Centre of Finland, Finland; ² Tecnia, Spain; ³ EIFER, Germany;
⁴ Ecoinnovazione, Italy; ⁵ Ghent University, Belgium; ⁶ Fraunhofer Institute for Building
Physics, Germany; ⁷ BASF, Germany; ⁸ Stora Enso, Finland
- 02.44 pm** **Should I stay or should I go?**
Hanie Zarafshani^{1,2}, **Bo P. Weidema**³, **Bertram F. De Boer**⁴, **Ponnapat Watjanatepin**¹, **Karel
Van Acker**^{1,2,5}
¹ KU Leuven, Belgium; ² Flanders Make, Corelab VCCM, Belgium; ³ Aalborg University,
Denmark; ⁴ 2.-0 LCA consultants, Denmark; ⁵ Center for Economics and Corporate
Sustainability (CEDON), KU Leuven, Belgium
- 02.58 pm** **Conclusion**

CONTRIBUTION OF LCM TO MORE SUSTAINABLE PLASTICS VALUE CHAINS**LOCATION:** Théâtre Marie Curie**CHAIRS:** Christian Krüger, *BASF, Germany*
Tomas Ekvall, *Chalmers University of Technology, Sweden***01.30 pm** Introduction**01.34 pm** Life Cycle Assessment (LCA) of Circular Food and Non-Food Flexible Plastic PackagingAnna-Sophie Haslinger, *Sophie Huysveld, Trang Nhu, Jo Dewulf*
*Ghent University, Belgium***01.48 pm** How sustainability strategies could be considered in Life Cycle Management (LCM) of systems – The South African plastics sector as a case studyTaahira Goga¹, *Harro von Blottnitz*¹, *Kevin Harding*², *Valentina Russo*³
¹ *University of Cape Town (UCT), South Africa;* ² *University of the Witwatersrand (WITS), South Africa;* ³ *Council for Scientific and Industrial Research (CSIR), South Africa***02.02 pm** Integrated environmental, economic and social LCA application in the polymer composites sectorAngela Daniela La Rosa¹, *Clara Valente*²
¹ *Norwegian University of Science and Technology- NTNU, Norway;* ² *NORSUS Norwegian Institute for Sustainability Research, Norway***02.16 pm** Meta analysis of Chemical Recycling LCAs*Carolin Deregowski*¹, *Christoph Koffler*², Maïke Horlacher², *Eskinder Gemechu*²
¹ *BASF SE, Germany;* ² *Sphera Solutions, Inc., The United States of America***02.30 pm** Life Cycle Assessment of Carbios enzymatic recycling technology: towards a closed-loop recycling for PET waste*Victoria Olmos*¹, *Auriane Arnould*¹, *Kiyam Vadoudi*², *Benjamin Rémy*², Radziminski Romain¹, *Delphine Denoizé*²
¹ *Deloitte, France;* ² *Carbios, France*



FRIDAY

01.30 pm – 03.00 pm

02.44 pm Towards a circular economy for plastics through a modelling approach and transition

LCA: PRISM (Plastic Recycling and Impact Scenario Model)

Anna Schwarz, Toon van Harmelen, Sietske Lensen, Sjoerd Herlaar, Paul Schouten, Paul Stegmann

TNO Energy and material transition, The Netherlands

02.58 pm Conclusion

LCM APPLIED TO FOOD, AGRICULTURE & BEVERAGES (2)**LOCATION:** Salle 3.1**CHAIRS:** Ulrike Eberle, *corsus-corporate sustainability GmbH, Germany*
Marcela Porto Costa, *Olam Group, United Kingdom***01.30 pm** Introduction**01.34 pm** A framework to guide method advancement in nutrient profiling algorithms for application in holistic life cycle assessmentsAshley Green¹, Thomas Nemecek², Alexander Mathys³¹ ETH Zurich, Switzerland; ² Agroscope, Switzerland; ³ ETH Zurich, Switzerland**01.48 pm** Life Cycle Assessment of the North Sea SYMAPA project: nearshore oyster aquaculture and innovative passive fisheriesSteven Van Hemelryck¹, Clément Bolle², Katrijn Quaghebeur¹, Laura Pilgrim¹, Naeem Adibi², Wannes Voorend¹¹ Colruyt Group, Belgium; ² WeLoop, France**02.02 pm** Internalizing the environmental costs of food products: Effects on price-demand equilibria and environmental impactsCarlo Schmid¹, Lukas Messmann², Amelie Michalke³, Arndt Feuerbacher¹¹ University of Hohenheim, Germany; ² University of Augsburg, Germany; ³ University of Greifswald, Germany**02.16 pm** Levels approach in Life Cycle Sustainability Assessment – The case of processed tomato in ItalyAlessandra Zamagni¹, Laura Zanchi¹, Christian Fontana¹, Alessia Gualla², Carla Scagnetti³¹ Ecoinnovazione; ² Solana spa; ³ Fraunhofer**02.30 pm** Application of a novel practical framework to assess the resilience & sustainability of salad production in the AzoresSophie Saget¹, David Styles², Chiara Flora Bassignana³, Marie-Fleur Brémaud⁴, Yann de Mey⁴, Paola Migliorini³, Michael Williams¹¹ Department of Botany, School of Natural Sciences, Trinity College Dublin, Ireland; ² Ryan Institute, National University of Ireland Galway, Ireland; ³ University of Gastronomic Sciences, Italy; ⁴ Business Economics, Wageningen University, The Netherlands



FRIDAY

01.30 pm – 03.00 pm

02.44 pm **Environmental assessment of wheat grown in rotation with chickpea under Mediterranean conditions**

Sara Lago-Oliveira, Ricardo Rebolledo-Leiva, María Teresa Moreira, Sara González-García

CRETUS Institute, Department of Chemical Engineering, School of Engineering, University of Santiago de Compostela, Spain

02.58 pm **Conclusion**

VALORIZATION OF LCA RESULTS IN A LCM PERSPECTIVE (2)**LOCATION:** Salle 3.2**CHAIRS:** Anse Smeets, *VITO nv, Belgium*
Matthias Fischer, *Fraunhofer Institute for Building Physics IBP, Germany***01.30 pm** Introduction**01.35 pm** Lifecycle sustainability assessment – applications for the bio-based products
Ivana Dencic, Ana Morao, Cristine Kayser, Eleni Moutousidi
*Corbion, The Netherlands***01.50 pm** Use of LCA in Electrolux: strategy, opportunities, and challenges.
Stefano Zuin¹, Andrea Corona¹, Vsevolod Dengin², Monica Celotto¹
¹ *Electrolux Italia, Italy*; ² *Electrolux AB, Sweden***02.05 pm** The environmental impact assessment linked to the deployment of solutions : a way to foster the scale-up of solutions.
Nathalie Martin-Sorvillo¹, Antoine Simon¹, Leo Bonnet², Isabelle Spiegel¹
¹ *VINCI, France*; ² *Inskip, France***02.20 pm** A novel modelling approach to assess the role of product innovation and supply chain programmes to achieve Corporate Net Zero commitments
Clare Josephine Rodseth, P James Joyce, Giles Rigarlsford, Henry King
*Unilever, United Kingdom***02.35 pm** Bringing LCA results into the financial equation: How biodiversity footprinting enables financial players to make new strategic decisions that include nature.
Marina Dumont, Daniël Kan, Mark Goedkoop
*PRe Sustainability, The Netherlands***02.50 pm** Conclusion



FRIDAY

01.30 pm – 03.00 pm

TIME AND SPACE: ACKNOWLEDGING AND INTEGRATING THE VARIABILITY OF SUSTAINABILITY IMPACTS INTO LCM

LOCATION: Salle 2.3 & 2.4

CHAIRS: **Mario Martín-Gamboa**, *Rey Juan Carlos University, Spain*

Thomas Gibon, *Luxembourg Institute of Science and Technology (LIST), Luxembourg*

01.30 pm Introduction

01.34 pm **Methodological advances towards a robust geographical identification of supply chains**

Diego Iribarren¹, **Luisa Berridy**², **Mario Martín-Gamboa**²

¹ *IMDEA Energy, Spain*; ² *Rey Juan Carlos University, Spain*

01.48 pm **Improving time and spatial variability of Consumption Footprint indicators at EU and Member States scale**

Esther Sanyé-Mengual¹, **Jacopo Foschi**², **Piotr Wierzgala**², **Vasco Orza**³, **Tommie Ponsioen**⁴, **Serenella Sala**¹

¹ *European Commission - Joint Research Centre, Italy*; ² *Uni Systems, Luxembourg*; ³ *Piksel SRL, Italy*; ⁴ *FootPrinting, The Netherlands*

02.02 pm **Remote Sensing Based Data Products for Large Scale Life Cycle Inventory Models**

René Itten, **Michael Götz**, **Hanna Kröhner**

LCA Research Group, Institute of Natural Resource Sciences, Zurich University of Applied Sciences, Switzerland

02.16 pm **Temporal Inconsistencies in LCA : A New Tool for Calculating Dynamic Climate Change Characterization Factors**

Guillaume Batot¹, **François-Xavier Dezert**¹, **Sibylle Duval-Dachary**¹, **Sandra Beauchet**¹, **Cyrille François**², **Anne Ventura**²

¹ *IFP Energie nouvelles, France*; ² *Université Gustave Eiffel, France*

02.30 pm **Time positioning for Product Labelling**

Yves BABIAN

Renault Group, France





FRIDAY

01.30 pm – 03.00 pm

02.44 pm The updated water scarcity impact characterization method AWARE2.0

Georg Seifudem¹, Anne-Marie Boulay¹, Markus Berger², Hannes Müller Schmied³

¹ CIRAIG, Polytechnique Montreal, Canada; ² University of Twente, The Netherlands; ³ Goethe University Frankfurt, Germany

02.58 pm Conclusion

Schedule

FRIDAY, SEPTEMBER 8: CLOSING CEREMONY

03.15 pm – 05.00 pm



FRIDAY

03.15 pm – 05.00 pm

CLOSING CEREMONY

LOCATION: Théâtre Pasteur

MODERATOR: Naeem Adibi, *Chair of LCM 2023*

03.15 pm **Key messages to retain from LCM 2023**

03.35 pm **LCM Conference Series – Announcements**

Mattias Finkbeiner, TU Berlin, Germany

Davide Bonaffini, Hitachi Rail, Italy

Marzia Traverso, RWTH Aachen University, Germany

03.55 pm **Awards announcement – Closing of LCM 2023**

Naeem Adibi, Chair of LCM 2023, Invited professor in JUNIA, Founder and head of WeLOOP

Christian Traisnel, Co-chair of LCM 2023 and Head of Hexa Strategie

Steven Van Hemelryck, Co-chair of LCM 2023 and R&D-Engineer (Environment) at Colruyt Group