

Schedule

MONDAY, 06 SEPTEMBER

08:30 – 18:15 CEST

KEYNOTE SPEECH

09:00 – 9:45 CEST

HOST-SESSION FROM FRAUNHOFER IBP

11:30 – 12:15 CEST

LUNCH BREAK

12:15 – 13:15 CEST

Building a Sustainable Future Based on Innovation and Digitalization
Moderators: **Rebecca Freitag and Dr. Hannes Krieg**

08:30 – 09:00 CEST **Beginning of the conference day || Getting in the mood for the day**

09:00 – 09:45 CEST **Keynote Speech by [Eric Mieras](#)**, Managing Director at PRé Sustainability.
Is it the perfect wave for LCA?

09:45 – 11:15 CEST **Parallel-Session Slot 1 || MO.1.A – MO.1.E**

11:15 – 11:30 CEST **Coffee Break**

11:30 – 12:15 CEST **Host-Session from Fraunhofer IBP**
Rethinking LCA for Product Stewardship and Corporate Sustainability

Efficient, scalable and flexible LCA capacity has become a major success factor for today's businesses. Based on the experience from various applied research projects, the session will provide practical insights into operationalizing sustainability data science in industry.

Speakers || Presenters:

[Dr.-Ing. Daniel Wehner](#), Head of Data-Science powered Product Stewardship at Department Life Cycle Engineering

[Dr.-Ing. Robert Ilg](#), Head of Business Development at Department Life Cycle Engineering

[Ann-Kathrin Briem](#), [Sun Hea Hong](#), [Tobias Prenzel](#), Experts in the field of Data-Science powered Product Stewardship, Department Life Cycle Engineering

12:15 – 13:15 CEST **Lunch Break**

Schedule

MONDAY, 06 SEPTEMBER

08:30 – 18:15 CEST

BASF NETWORKING-SESSION

12:15 – 13:15 CEST

KEYNOTE SPEECH

13:30 – 14:15 CEST

GaBi LIFETIME AWARD

16:00 – 16:30 CEST

12:15 – 13:15 CEST

BASF Networking-Session

Sustainability assessments, LCA – methodology, strategy and practice

We at BASF want to create value for the environment, society and business with our products, solutions and technologies. To do so, we are increasing the relevance of sustainability in our steering processes, business models and customer interaction. This establishes us as a key partner supporting our customers, opens up new growth areas and secures the long-term success of our company. To advance our sustainable business strategy, we leverage digital technologies and data management systems to create value for us and our customers. To effectively manage sustainability and to support our strategy, we measure our sustainability performance in each of the three pillars of sustainability on different levels and with different scopes. Moreover, we also actively share our sustainability methodologies both in academia and the market. Get in contact in this network session with experts and executives of BASF to discuss challenges and opportunities to improve the sustainability of business and societies on our planet.

Speakers || Presenters:

[Dr. Christoph Jäkel](#), Head of Corporate Sustainability at BASF

[Alessandro Pistillo](#), Director Digital Strategic Projects at BASF

[Birgit Hellmann](#), Global Sustainability Communications at BASF

[Klara Truong](#), Global Sustainability Communications at BASF

[Prof. Dr. Peter Saling](#), Director Sustainability Methods at BASF

[Andreas Kleinke](#), Head of Sustainability Strategy at BASF

[Andreas Horn](#), Carbon Steering at BASF

[Max Silva](#), Applied Sustainability at BASF Fundação Espaço ECO

[Rafael Selvaggio Vinas](#), Applied Sustainability at BASF Fundação Espaço ECO

[Michelle Scachetti](#), Applied Sustainability at BASF Fundação Espaço ECO

13:15 – 13:30 CEST

Refresh after Lunch

13:30 – 14:15 CEST

Keynote Speech by [Dr. Janin Schaffer](#), Physical Oceanographer at the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research
The MOSAiC expedition. A year-long drift across the Central Arctic to study climate processes

14:15 – 15:45 CEST

Parallel-Session Slot 2 || MO.2.A – MO.2.E

15:45 – 16:00 CEST

Coffee Break

16:00 – 16:30 CEST

GaBi Lifetime Award

Honoring the life work of Prof. Dr. Peter Eyerer

16:30 – 18:00 CEST

Parallel-Session Slot 3 || MO.3.A – MO.3.E

18:00 – 18:15 CEST

Take Home-Message || End of the conference day

Schedule

MONDAY, 06 SEPTEMBER

09:45 – 18:00 CEST

SESSION SLOT 1 || MO.1.A – MO.1.E

09:45 – 11:15 CEST

SESSION SLOT 2 || MO.2.A – MO.2.E

14:15 – 15:45 CEST

SESSION SLOT 3 || MO.3.A – MO.3.E

16:30 – 18:00 CEST

MO.1.A

LIFE CYCLE APPROACHES IN THE RAW MATERIALS SECTOR

Sessions Chairs: **Xara, Susana** || European Commission – Health and Digital Executive Agency (HaDEA)
Pehlken, Alexandra || OFFIS – Institute for Information Technology

A short deep dive into calculating the ADP characterisation factors – understanding, challenging and improving the current approach
[Reuter, Benjamin](#)

Limitations and recommendations of LCA databases of mining activities for some raw materials

Fiorletta, Mathilde; Lai, Frédéric; Bonnemaïson, Michel; [Garcia, Jade](#)¹; Osset, Philippe _____ ¹SCORE LCA

What we really know about critical raw material impact?

[Penaherrera, Fernando](#)¹; [Pehlken, Alexandra](#)¹; Koch, Bjoern _____ ¹OFFIS e. V. – Institute for Information Technology

ISO-adjusted allocation of mineral commodities in ecoinvent

[Sonderegger, Thomas](#)¹; Bourgault, Guillaume; Moreno Ruiz, Emilia; Wernet, Gregor _____ ¹ecoinvent

Identification of dissipative emissions for improved assessment of metal resource use in LCA

[Owsianiak, Mikolaj](#)¹; Hauschild, Michael _____ ¹Technical University of Denmark

MO.1.B

TRANSFORMATION TOWARDS FUTURE MOBILITY

Sessions Chairs: **Forell, Alexander** || Makersite GmbH
Björklund, Anna || Royal Institute of Technology KTH

Aviation energy transformation in Sweden – a case study of environmental assessment of the future transition pathways in socio-technical systems

Lai, Celeste Yat-Yin¹; Björklund, Anna; Karakaya, Emrah _____ ¹KTH – Royal Institute of Technology

New Life Cycle Inventories from Clean Sky Airframe technologies

Salles, Ana¹; Lätsch, Corinna; Das, Totaram; Prado, Luis; Coskun, Selim; _____ ¹Fraunhofer ICT
Pfeuffer, Simon; Geß, Andreas

Future Mobility in the year 2040

Lozanovski, Aleksandar¹; Geß, Andreas; Held, Michael _____ ¹University of Stuttgart

Integrating design for environment to achieve carbon neutral mobility

Forell, Alexander¹; Danzer, Christoph _____ ¹Makersite GmbH

MO.1.C

ACHIEVING SUSTAINABILITY GOALS ON THE REGIONAL, NATIONAL AND INTERNATIONAL LEVEL

Sessions Chairs: **Kellenberger, Daniel** II Intep
Rydborg, Tomas II IVL Swedish Environmental Research Institute

**Integrating Life Cycle Assessment into the electric model Stella:
A case for Germany.**

Benitez, Alicia¹; Wulf, Christina; Geldermann, Jutta _____ ¹Forschungszentrum Jülich GmbH

**Decarbonizing regions to meet the Paris Agreement 2 °C target:
The Luxembourg Greater Region as a case study**

Gibon, Thomas; **Hitaj, Claudia**¹; Igos, Elorri; Babi Almenar, Javier _____ ¹Luxembourg Institute of Science and Technology (LIST)

**Structured Integration of Social Sustainability in Strategic Network Design:
The Case of Bioethanol Production in the EU**

Messmann, Lukas¹; **Wietschel, Lars**¹; Thorenz, Andrea; Tuma, Axel _____ ¹University of Augsburg

Regional sustainability through life cycle management

Rydborg, Tomas¹; Adibi, Naeem; Balkau, Fritz; Bezama, Alberto; Massari, Stefania; _____ ¹IVL Swedish Environmental Research Institute
Modak, Prasad; Sonnemann, Guido; Strothmann, Philip; Wiche, Pia

The vision of the «2000-Watt Society» and its instruments

Kellenberger, Daniel¹; Lucio, Susanna _____ ¹Intep – Integrale Planung GmbH

Life cycle methodologies for regional sustainable development

Dvarioniene, Jolanta¹; Balkau, Fritz; Hurtado, Sandra Elia; Lembo, Francesco _____ ¹Kaunas University of Technology

MO.1.D

LAND USE AND BIODIVERSITY IN LIFE CYCLE MANAGEMENT

Sessions Chairs: **Lindner, Jan Paul** II Bochum University of Applied Sciences
Bos, Ulrike II Sphera Solutions GmbH

Development of an impact assessment method for desertification in LCA

Liu, Runya¹; Ohashi, Haruka; Matsui, Tetsuya; Hirata, Akiko; Itsubo, Norihiro _____ ¹Tokyo City University

Biodiversity impact assessment of land using processes in the supply chain of passenger cars

Quandt, Julian¹; Lindner, Jan Paul; Schüler, Maximilian _____ ¹Hochschule Bochum,
 Fraunhofer Institut für Angewandte Informationstechnik

Flow property-based assessment of land use impacts on biodiversity using GIS in Life Cycle Assessments

Maier, Stephanie¹; **Horn, Rafael**¹; Bos, Ulrike; Uusitalo, Ville _____ ¹University of Stuttgart – IABP

Life Cycle biodiversity impact assessment of beef production in the United States

Rottmann, Désirée¹; **Jüde, Franziska**¹; Lindner, Jan Paul; Zimmermann, John; _____ ¹Bochum University of Applied
 Johnson, Joardan; Thoma, Greg Sciences

Development of crop specific ecoregion factors for countries for biodiversity impact assessment

Mumm, Nico¹; Eberle, Ulrike _____ ¹corvus – corporate sustainability GmbH

MO.1.E

WHAT GETS MEASURED, GETS IMPROVED – IMPACT ASSESSMENT AND ENVIRONMENTAL LABELING ALONG THE PRODUCTION CHAIN

Sessions Chairs: **Schöner, Georg** || Carlsberg Breweries A/S
Ristic, Dusan || German Institute of Food Technologies (DIL e.V.)

WBCSD Value Chain Carbon Transparency Pathfinder: Creating an ecosystem for Scope 3 emissions transparency

Stanley, Anna; [Safaei, Amir](#)¹ _____ ¹World Business Council for Sustainable Development (WBCSD)

Solving the Trilemma – Climate-Friendly, Healthy, and Popular Meals for Retirement Homes and Canteens

[Bradford, Sebastian](#)¹; Stucki, Matthias; Berger, Verena _____ ¹Zurich University of Applied Sciences (ZHAW)

Voluntary Sustainability Standards and Blockchain Technology – Interactions and Outcomes

Köhler, Susanne; Bager, Simon; [Pizzol, Massimo](#)¹ _____ ¹Aalborg University

M-Check: Using existing data for the implementation of a product sustainability rating

[Alig, Martina](#)¹; Kunz, Jenny _____ ¹Intep GmbH

Learnings of national application of Environmental Footprint in Companies and Organizations

Palander, Sara; [Spak, Björn](#)¹; Sanne, Karin; Lorentzon, Katarina; Rydberg, Maria; _____ ¹Swedish Environmental Protection Agency
 Wikström, Anna

MO.2.A

LIFE CYCLE APPROACHES IN THE RAW MATERIALS SECTOR II

Sessions Chairs: **Xara, Susana** || European Commission – Health and Digital Executive Agency (HaDEA)
Pehlken, Alexandra || OFFIS – Institute for Information Technology

Analyzing feasibility of a new nickel slag valorization sector with prospective life cycle assessment

Quéheille, Eva¹; Dauvergne, Michel; Ventura, Anne _____ ¹Gustave Eiffel University

The paradox of the circular economy in the raw materials industry

Regueiro, Manuel¹; Alonso Jimenez, Antonio _____ ¹Geological Survey of Spain

How to generate more reliable data for the LCA of the raw material sector: the importance of interdisciplinarity

Muller, Stephanie¹; Beylot, Antoine; Lai, Frédéric; Villeneuve, Jacques; _____ ¹BRGM
 Moore, Kathryn; Sanchidrián, José A.; Kinnunen, Päivi

Mitigation Potential of Greenhouse Gas Emissions from Circular Economy Strategies on Quebec Steel Industry and its Value Chain

Binet, Flavien¹; Margni, Manuele; Saunier, François _____ ¹CIRAIG, Polytechnique Montréal

Stochastic approach based on the Monte Carlo (MC) simulation used for Life Cycle Inventory (LCI) uncertainty analysis in the Rare Earth Elements (REEs) recovery

SALA, Dariusz¹; Bieda, Bogusław¹ _____ ¹AGH University of Science and Technology

MO.2.B

DECARBONIZED MOBILITY ALONG THE VALUE CHAIN

Sessions Chairs: **Krinke, Stephan** || Volkswagen AG
Koch, Nicolas || Mercator Research Institute on Global Commons and Climate Change gGmbH

Life Cycle Assessment of Power-to-Liquid for Aviation:**A Case Study of a Passenger Aircraft**

Papantoni, Veatriki¹; Linke, Florian; Dahlmann, Katrin; Kühlen, Markus; _____ ¹DLR Institut für Vernetzte
 Silberhorn, Daniel; Brand, Urte; Vogt, Thomas **Energiesysteme**

Environmental performance of mass balanced polycarbonate

Schenk, Karolin¹; Bechtle, Miriam; Himmelreich, Birgit _____ ¹Covestro

**Environmental evaluation of future generations of batteries,
implementation of eco-design in a R&D context**

Rodríguez Buitrón¹; **Betsabé Elizabeth**¹; Cor, Emmanuelle; Monnier, Elise; _____ ¹CEA/GRENOBLE
 Perdu, Fabien; Reynier, Yvan; Martinet, Sébastien

LCAs of different powertrains as basis for decarbonisation

Schüler, Maximilian; Gernuks, Marko; Plaga, Benjamin; **Hentschel, Jan**¹ _____ ¹Volkswagen AG

**SALCOS® – Salzgitter Low CO₂ Steelmaking, the pathway to
carbon neutral steel for value chains**

Traupe, Jens¹; Gintaut, Thorsten _____ ¹Salzgitter AG

MO.2.C

TRANSFER TOWARDS CLIMATE NEUTRALITY – SCENARIOS, OPTIONS AND VALUATION

Sessions Chairs: **Garvens, Hans J.** II Umweltbundesamt (German Environment Agency)
Baitz, Martin II Sphera Solutions GmbH

Sustainable transition of the primary steel production

Suer, Julian¹; Traverso, Marzia; Ahrenhold, Frank

¹RWTH Aachen & thyssenkrupp
Steel Europe AG

Transfer towards climate neutrality – from LCA to a business case

Garvens, Hans J.¹

¹Umweltbundesamt (German
Environment Agency) and
Hochschule für Technik und
Wirtschaft HTW Berlin

**Life cycle based assessment of decarbonisation options –
towards scientifically robust carbon neutrality**

Bach, Vanessa¹; Finkbeiner, Matthias

¹Technische Universität Berlin

**The need for more “dynamics” in Life Cycle Assessments for
improved building-related decision making processes**

Kreißig, Johannes¹; Fischer, Matthias; Braune, Anna

¹German Sustainable Building
Council – DGNB e.V.

Future air mobility scenarios and its environmental impact

Behtke, Maurice¹; Rödger, Jan-Markus; Gauß, Philipp; Zierleyn, Fabian

¹umlaut consulting GmbH

MO.2.D

CARBON INVENTORY AND MANAGEMENT OF BIO-BASED MATERIALS
FOR A POST-FOSSIL BIOECONOMY

Sessions Chairs: **Rumberg, Michael** II University of Applied Forest Sciences Rottenburg
Stucki, Matthias II Zurich University of Applied Sciences

**Storing or utilizing biological CO₂ from a Norwegian paper mill,
 or no capture at all. Which is the best solution?**

Modahl, Ingunn Saur; [Raadal, Hanne Lerche](#)¹ _____ ¹NORSUS

**Life cycle assessment and dynamic material flow analysis of biochar
 applications in urban environments: case study in Uppsala, Sweden**

[Azzi, Elias](#)¹; Karlton, Erik; Sundberg, Cecilia _____ ¹KTH, Royal Institute
 of Technology

**Environmental and economic assessment of using wood to meet
 Paris Agreement greenhouse gas emission reductions in Slovenia**

[Schau, Erwin M.](#)¹; Tavzes, Črtomir; Gavri, Igor; Šušteršič, Iztok; _____ ¹InnoRenew CoE
 Prelovšek Niemelä, Eva; Dávid, Balázs; Pečnik, Jaka; DeVallance, David

Prospective life cycle assessment of innovative hardwood products

[Sander-Titgemeyer, Anna](#)¹; Weber-Blaschke, Gabriele _____ ¹Holzforschung, Technische
 Universität München

**Making ends meet: review of applied LCA methodology in the
 bio-based industrial sectors and recommendations**

[Løkke, Søren](#)¹ _____ ¹AAU

MO.2.E

WHAT GETS MEASURED, GETS IMPROVED – IMPACT ASSESSMENT AND ENVIRONMENTAL LABELING ALONG THE PRODUCTION CHAIN II

Sessions Chairs: **Schöner, Georg** II Carlsberg Breweries A/S
Ristic, Dusan II German Institute of Food Technologies (DIL e.V.)

Evaluating the compliance of existing building Life cycle assessment (LCA) benchmarks in Europe with respect to the Paris climate agreement goals

Iyer, Vignesh¹; Ebert, Samuel; Wagner, Anna; Hollberg, Alexander _____ ¹Technische Universität München

Towards Embodied Carbon Benchmarks for the European Building Industry

Röck, Martin¹; Hvid Horup Sørensen, Lise; Lyng, Kirsten; Tozan, Buket; Shcack, Rikke; _____ ¹KU Leuven
 Fields, Maya; Collin, Christine; Le Den, Xavier; Birgisdóttir, Harpa

Assessing Environmental Impacts of Construction Products: The Role of Embedded and Operational Impacts in the Environmental Performance of Wooden Windows

Del Rosario, Pamela¹; Palumbo, Elisabetta; Traverso, Marzia _____ ¹RWTH Aachen University – Institut für Nachhaltigkeit im Bauwesen

Development of new LCA based benchmarks for certification of buildings

Braune, Anna; Quante, Kathrin¹ _____ ¹DGNB e.V. – German Sustainable Building Council

Verification of environmental product declarations – how strict should it be?

Johnsen, Fredrik Moltu¹; Tellnes, Lars G. F. _____ ¹Norwegian Institute for Sustainability Research (NORSUS)

MO.3.A

SUSTAINABLE CHEMICALS AND MATERIALS

Sessions Chairs: **Sonnemann, Guido** || Université de Bordeaux
Schneider, Christine / Otte, Nikolaj || Henkel AG & Co. KGaA

Traceability of chemicals along the supply chains as enabler for more sustainable leather

Schenten, Julian¹; Kaluziak, Eleni¹ _____ ¹Hochschule Darmstadt

Supplier-specific Life Cycle Inventory database for chemicals and plastics

Kätelhön, Arne¹; Meys, Raoul; Stellner, Laura; Bardow, André; Suh, Sangwon _____ ¹Carbon Minds GmbH

A “Sustainable-by-Design” approach in research and technology organizations

Igos, Elorri¹; Zinck, Sébastien; Gibon, Thomas; Schaubroeck, Thomas; Benetto, Enrico _____ ¹Luxembourg Institute of Science and Technology

A global circular economy for plastics: Technical potential for greenhouse gas mitigation

Meys, Raoul¹; Kätelhön, Arne; Bachmann, Marvin; Winter, Benedikt; Zibunas, Christian; _____ ¹RWTH Aachen University
Suh, Sangwon; Bardow, André

Supporting early-design decisions with LCA: comparison of several architectures of electrochromic displays for anticounterfeiting application

Glogic, Edis¹; Futsch, Romain; Rougier, Aline; Sonnemann, Guido _____ ¹Université de Bordeaux

MO.3.B

PROSPECTIVE LIFE CYCLE SUSTAINABILITY ASSESSMENT OF ENERGY TECHNOLOGIES

Sessions Chairs: **Brand, Urte** || DLR Institute of Networked Energy Systems
Iribarren, Diego || IMDEA Energy

Environmental consequences of future bioenergy deployment pathways

Gibon, Thomas¹; Baustert, Paul; Navarrete Gutiérrez, Tomás; Morales, Marjorie; _____ ¹Luxembourg Institute of Science and Technology (LIST)
 Hahn Menacho, Álvaro José; Arvesen, Anders

Energy storage with less metal scarcity? Prospective life cycle assessment of lithium-sulfur batteries with a focus on mineral resources

Wickerts, Sanna¹; Arvidsson, Rickard; Chordia, Mudit; Nordelöf, Anders; _____ ¹Chalmers University of Technology
 Svanström, Magdalena; Johansson, Patrik

Prospective life cycle assessment of hydrogen produced through solid oxide electrolysis

Puig-Samper, Gonzalo; **Iribarren, Diego**¹; Dufour, Javier _____ ¹Fundación IMDEA Energía

Prospective LCA and LCC applied on different Power-to-Gas technologies

Koj, Jan Christian¹; Harzendorf, Freia; Zapp, Petra _____ ¹Forschungszentrum Jülich

Sustainability and Future Trajectories: How is Prospectivity Integrated into Life Cycle Sustainability Assessment of Energy Technologies in Practice?

Brand, Urte¹; Gomez Trillos, Juan Camilo; Lütkehaus, Hauke; Papantoni, Veatriki; _____ ¹DLR – Institute of Networked Energy Systems
 Tippe, Mareike; Pade, Christian; Oswald, Matthias; Vogt, Thomas

MO.3.C

CIRCULARITY AND LIFE CYCLE ASPECTS OF RECYCLING TECHNOLOGIES

Sessions Chairs: **Horlacher, Maïke** || Sphera Solutions GmbH
Krüger, Christian || BASF SE

Enabling a circular economy for plastics: Life Cycle Assessment for Eastman's commercial-scale advanced recycling solution – Methanolysis

Pierce, Jason¹; Granados, Patricia² _____¹Eastman
²Quantis

Recirculation of battery raw materials – the effects of allocation within a Life Cycle Sustainability Assessment approach

Popien, Jan-Linus¹; Thies, Christian; Spengler, Thomas S. _____¹Technische Universität
 Braunschweig

Recycling of plastics and LCA: Demonstrating the key technical aspects of the recycling chain, providing meth-odological guidance

Palluau, Magali; Hurgel, Charlotte; Osset, Philippe¹; Garcia, Jade _____¹SCORE LCA

Optimized life cycle for plastics, the role of chemical recycling

Smuk, Lena¹; Berlin, Johanna¹; Evangelopoulos, Panagiotis _____¹RISE Research Institutes
 of Sweden AB

Plastic recycling in a circular economy; determining environmental performance through an LCA matrix model approach.

Schwarz, Anna¹; Ligthart, Tom; van Harmelen, Toon _____¹TNO

MO.3.D

ADDRESSING MARINE LITTER WITHIN LIFE CYCLE ASSESSMENT AND MANAGEMENT

Sessions Chairs: **Boulay, Anne-Marie** II CIRAIG / Université de Montréal
Vazquez-Rowe, Ian II Pontificia Universidad Católica del Perú

The plastics that got away: Country and sector specific losses to various environments.

[Langeveld, Eline¹](#); Schwarz, Anna; van Harmelen, Toon _____ ¹TNO

Proposal for a new impact assessment pathway to assess marine debris in Life Cycle Assessment

[Szablewski, Carolina¹](#); Lemaire, Honorine; Bâtis, Antoine; Yogarajah Croos, Amrutha; _____ ¹WeLOOP
 Torche, Maissae; Leclercq, Clémence; Bolle, Clément; Schrijvers, Dieuwertje; Adibi, Naeem

Bio-degradable plastics in a circular Economy

[Mense, Marco¹](#) _____ ¹Ecomatters

Accounting for marine plastics in abiotic resource depletion

[Vázquez-Rowe, Ian¹](#); Ita-Nagy, Diana; Kahhat, Ramzy _____ ¹Pontificia Universidad Católica del Perú

Plastic leakage of packaging in LCA – a theoretical framework

[Scagnetti, Carla¹](#); Lorenz, Manuel _____ ¹University of Stuttgart, Institute for Acoustics and Building Physics (IABP)

MO.3.E

LIFE CYCLE METRICS IN SUSTAINABLE FINANCE AND BUSINESS

Sessions Chairs: **Mellquist, Ann-Charlotte** || RISE Research Institutes of Sweden AB
Benetto, Enrico || Luxembourg Institute of Science and Technology

Circular Economic assessment, barriers and opportunities

Andersen, Birgitte Holt¹; Komkova, Anastasija _____ ¹CWare ApS.

The reliability of input-output and lifecycle-based data for estimation of corporate carbon emissions: a comparative study of carbon footprints in the automotive sector

Popescu, Ioana-Stefania¹; Chion, Laurent; Gibon, Thomas; Hitaj, Claudia; Benetto, Enrico _____ ¹Luxembourg Institute of Science and Technology (LIST)

Contributions of RenovaBio for Sustainable Finance: Evolution and perspectives

Scachetti, Michelle¹; Machado Fernandes Costa, Paulo Roberto _____ ¹BASF – Fundação Espaço ECO

Use cases for life cycle assessment and life cycle costing in circular design

Hanski, Jyri; Uusitalo, Teuvo¹; Barni, Andrea; Rääkkönen, Minna; Vatanen, Saija; _____ ¹VTT Technical Research Centre of Finland Ltd.
 Fontana, Alessandro; Capuzzimati, Claudio

Rating, Credit Decision and Pricing – How Sustainability and Life Cycle Assessments are Changing Credit Practice

Ender, Manuela¹; Ilg, Robert; Albrecht, Stefan; Fischer, Matthias; Wimmer, Konrad _____ ¹msg GillardonBSM AG

Schedule

TUESDAY, 07 SEPTEMBER

08:45 – 18:15 CEST

KEYNOTE SPEECH

09:00 – 9:45 CEST

PARALLEL-SESSION SLOT 1 || WORKSHOP BY SPHERA

09:45 – 11:15 CEST

HOST-SESSION FROM DGNB

11:30 – 12:15 CEST

KEYNOTE SPEECH

13:30 – 14:15 CEST

Building a Sustainable Future Based on Innovation and Digitalization
Moderators: Rebecca Freitag and Dr. Hannes Krieg

08:45 – 09:00 CEST **Beginning of the conference day || Getting in the mood for the day**

09:00 – 09:45 CEST **Keynote Speech by Hannah Helmke**, Co-founder and CEO of right. based on science
Effective decarbonisation: the significance of measuring climate impact in °C

09:45 – 11:15 CEST **Parallel-Session Slot 1 || TU.1.A – TU.1.E**

Workshop by Sphera

Connecting the Dots – Simplifying Complexity Through Integrated Technologies

11:15 – 11:30 CEST **Coffee Break**

11:30 – 12:15 CEST **Host-Session from DGNB**

Carbon lifecycle management of buildings: How to design and build with a focus on embodied carbon?

The session shows, using the example of the wood hybrid project EDGE-Suedkreuz in Berlin, why and how embodied carbon plays an essential role to meet future requirements.

Speakers || Presenters:

Johannes Kreißig, Chief Executive Officer DGNB e.V. || DGNB GmbH

Thomas Kraubitz, Director Buro Happold

12:15 – 13:15 CEST **Lunch Break**

13:15 – 13:30 CEST **Refresh after Lunch**

13:30 – 14:15 CEST **Keynote Speech by Dr. Auma Obama**, Founder and Executive Director of the Sauti Kuu Foundation
Valuing the sum total of all of us to guarantee a better and more sustainable future

14:15 – 15:45 CEST **Parallel-Session Slot 2 || TU.2.A – TU.2.E**

15:45 – 16:00 CEST **Coffee Break**

16:00 – 16:30 CEST **Inter-Action**

16:30 – 18:00 CEST **Parallel-Session Slot 3 || TU.3.A – TU.3.E**

18:00 – 18:15 CEST **Take Home-Message || End of the conference day**

Schedule

TUESDAY, 07 SEPTEMBER

09:45 – 18:00 CEST

SESSION SLOT 1 || TU.1.A – TU.1.E

09:45 – 11:15 CEST

SESSION SLOT 2 || TU.2.A – TU.2.E

14:15 – 15:45 CEST

SESSION SLOT 3 || TU.3.A – TU.3.E

16:30 – 18:00 CEST

TU.1.A

CIRCULAR ECONOMY BUILDINGS – FROM RESEARCH TO PRACTICE

Sessions Chairs: **Hafner, Annette** || Ruhr University Bochum
Glöggler, Jens || ATP sustain GmbH

Illustrating Circularity of Building Components

Hartmann, Max¹; **Ebert, Samuel**¹ _____ ¹Technical University Munich

LCA supporting the design of circular biobased wall panels

Delem, Laetitia¹; Douguet, Étienne; Wastiels, Lisa _____ ¹Belgian Building Research Institute (BBRI)

Promoting climate neutral urban areas – FutureBuilt zero method to measure compliance in pilot projects

Resch, Eirik¹; Andresen, Inger; Selvig, Eivind; Wiik, Marianne k.; Tellnes, Lars G. F.; _____ ¹Norwegian University of Science and Technology (NTNU)
 Stoknes, Stein

Integrated Decision Support for Circular, Industrialised and Bio-based Construction Works

Kayaçetin, Cihan¹; Verdoodt, Stijn; Leferve, Lode; Versele, Alexis _____ ¹KU Leuven – University of Leuven

Environmental and socio-economic benefits of circularity in real estate management

Rydberg, Tomas¹; Andersson, Johanna; Gerhardsson, Hanna; Kultje, Eva; _____ ¹IVL Swedish Environmental Research Institute
 Lewrén, Adam; Loh Lindholm, Carina; Löfving, Joel

TU.1.B

FUTURE SUSTAINABLE LIFESTYLES – INDIVIDUAL CHOICES

Sessions Chairs: **Brunklaus, Birgit** || RISE Reserach Institutes of Sweden AB
Kreißig, Johannes || DGNB e.V. – German Sustainable Building Council

Life-LCA: The first case study of the life cycle impacts of a human being

Bossek, David¹; Görmer, Marcel; Bach, Vanessa; Finkbeiner, Matthias

¹Technische Universität Berlin –
 Institute of Environmental
 Technology

Diets within planetary boundaries: What can be achieved through dietary change alone

Ridoutt, Bradley¹; Baird, Danielle; Hendrie, Gilly

¹CSIRO Australia

Increasing the sustainability of breakfast buffets with the use of digital waste-tracking tools

Goossens, Yanne¹; Leverenz, Dominik; Kuntscher, Manuela

¹Thünen Institute of Market
 Analysis

New ways for sustainable living & working – a potential study from Switzerland

Kakkos, Efstathios¹; Vollrath, Fabian; Hirschier, Roland

¹EMPA

Environmental sustainability of the work from home lifestyle, opportunities and pitfalls

Beloin-Saint-Pierre, Didier¹; Lasvaux, Sébastien

¹EMPA

TU.1.C

CONNECTING THE DOTS – SIMPLIFYING COMPLEXITY THROUGH INTEGRATED TECHNOLOGIES

Moderation: **Dr. Ulrike Bos**, Senior Manager GaBi Content at Sphera

Learn how an integrated technology approach can help your organization address and manage present and future sustainability and ESG challenges. Engage with Sphera's experts and learn about the business benefits of integrated sustainability and ESG solutions. Share your key challenges and requirements to better tailor technologies to your needs.

Speakers || Presenters:**Sebastian Schulz**

Team Lead Product Management PS at Sphera

Harald Florin

Vice President Product Sustainability Solutions at Sphera

Emanuela Scimia

Managing Director Italy and Director Consulting at Sphera

TU.1.D

LIFE CYCLE THINKING IN COMPANIES AND ORGANIZATIONS

Sessions Chairs: **Rydberg, Maria** || Swedish Life Cycle Center
Reinsch, Bernd || Robert Bosch GmbH

Assessing the Economic Dimension of the Circular Economy in Companies and Guidance for Implementation

Wege, Elena¹; Salvasohn, Lara _____ ¹Robert Bosch GmbH

The product-market system approach to adopt life-cycle thinking in organisation management

Mancinelli, Raimondo¹; Wehrmeyer, Walter; Lee, Jacquetta; Arena, Noemi; _____ ¹University of Surrey / Costain
 Reeves, Kevin; Embley, Tim

Steps to mainstream sustainability assessment in the decision-making process of Colruyt Group

Van Hemelryck, Steven¹; Adibi, Naeem; McHardy, Cara; Voorend, Wannes _____ ¹Colruyt Group Services

Government collaboration for increased application of life cycle thinking in society

Wikström, Anna¹; Toller, Susanna; Einarsson, Kristina; Spak, Björn; Thornéus, Joakim; _____ ¹Chalmers University of Technology/Swedish Life Cycle Center
 Palander, Sara; Rydberg, Maria

Leaving instrumental explanations in the toolbox – towards a more nuanced understanding of LCA in sustainable product development

Beemsterboer, Sjouke¹ _____ ¹Chalmers Institute of Technology

TU.1.E

DIGITAL TECHNOLOGIES FOR A CIRCULAR ECONOMY

Sessions Chairs: **Baumgartner, Rupert J.** || University of Graz
Nebel, Barbara || Thinkstep ANZ

Digital battery passports as supporting tool for sustainable battery life cycle management

Berger, Katharina¹; Baumgartner, Rupert J.; Weinzerl, Martin; Bachler, Johann; _____¹University of Graz
 Schöggel, Josef Peter

The potential of digital technologies for sustainable product management

Rusch, Magdalena¹; Schöggel, Josef Peter; Baumgartner, Rupert J. _____¹University of Graz

Automated LCA for Complex Products (e.g. Consumer Electronics, Vehicle)

Schiffleitner, Andreas¹; Prox, Martina; Wahl, Anne _____¹iPoint-Austria gmbh

Building a Sustainable Future Based on Innovation and Digitalization

Walden, Gunther¹; **Adam, Kathrin**¹; **Prox, Martina**¹ _____¹CircularTree

Drivers and limitations of a blockchain-based information exchange system for LCA – Insights from the aerospace sector

Galindo Schaly, Sebastian¹; Strehle, Elías; Pukies, Gaston _____¹iPoint-systems GmbH

TU.2.A

MAINSTREAMING CONSTRUCTION LCA – BASED ON AN OPEN DATA NETWORK

Sessions Chairs: **Donath, Christian** || ECO Platform AISBL
Röder, Alexander || Institut Bauen und Umwelt e.V.
Kusche, Oliver || ok*worx

Levels, supporting assessment and reporting of life cycle performance of buildings

Lindblom, Josefin¹ _____ ¹European Commission – DG Environment

Mainstreaming Construction LCA – Based on an Open Data Network

Donath, Christian¹ _____ ¹ECO Platform AISBL

Mainstreaming production of digital EPDs in Holcim

Vlasopoulos, Nikolaos¹; Brun, Sandrine; Kessler, Benoit; Vogl, Christopher; McEwen, Laurel _____ ¹Holcim Innovation Center

An open data network for environmental information on construction products

Kusche, Oliver¹ _____ ¹Oliver Kusche Research & Consulting

Handling of digital data in building LCA tools exemplified by Generis®

Horn, Rafael¹; Borschewski, David; Ebertshäuser, Sebastian; Jäger, Michael; _____ ¹Fraunhofer Institute for Building Physics IBP
Mahler, Boris

TU.2.B

FUTURE SUSTAINABLE LIFESTYLES – URBAN STRUCTURE

Sessions Chairs: **Brunklaus, Birgit** || RISE Reserach Institutes of Sweden AB
Kreißig, Johannes || DGNB e.V. – German Sustainable Building Council

**Environmental co-benefits and trade-offs of climate mitigation strategies
 applied to net-zero-emission neighbourhoods**

Lausselet, Carine¹ _____ ¹NTNU

**Environmental and land use consequences of replacing milk and beef with
 plant-based alternatives in Germany**

Porto Costa, Marcela; Saget, Sophie; Zimmermann, Beate; Petig, Eckart; Angenendt, Elisabeth;
 Rees, Robert; Chadwick, David; Gibbons, James; Shrestha, Shailesh; **Styles, David**¹ _____ ¹University of Limerick

**The environmental impacts of urban transportation alternatives in Brazil:
 A LCA to promote conscious consumption in urban mobility**

Avilan, Felipe; **Iwasaka, Fernanda**¹; **Souza, Amanda**² _____ ¹Akatu Institute
²BASF – Fundação Espaço ECO

**User centred design and energy efficient packaging collection infrastructure
 supporting circular future lifestyles**

Brunklaus, Birgit¹; **Ordoñez, Isabel**²; Svärd, Lotta; Gemfors, Fredrik _____ ¹RISE Research Institute
 of Sweden AB

²Elisava – Barcelona School of
 Design and Engineering

**Spatial configurations of urban waste management systems considering
 local uses of recovered products**

Tanguy, Audrey¹; Laforest, Valérie; Glaus, Mathias _____ ¹Mines Saint-Etienne

TU.2.C

THE ROLE OF INDUSTRY IN SUSTAINABLE SUPPLY CHAINS

Sessions Chair: Knüpffer, Eva || Fraunhofer IBP

Adequate Framework, Process, Method, Data and Communication for consistent and successful Decarbonization over the Supply chain

Baitz, Martin¹; Bos, Ulrike; Kupferschmid, Stefan; Premer, Stefan; Partl, Hannes _____ ¹Sphera Solutions GmbH

Challenges and requirements of exchanging Product Carbon Footprint information in the supply chain

Jaeger, Florian Ansgar¹; Saling, Peter; Dencic, Ivana; Rehl, Torsten; Steidle, Rebecca; _____ ¹Siemens AG – Corporate Technology
Wang, Jing; Létinois, Ulla

TED – transferring environmental data

Tietze, Ann-Carina¹; Schüler, Maximilian _____ ¹Volkswagen AG

Preparing for the new Supply Chain Law – A Conceptual Paper introducing the Opportunities and Boundaries of a Digitalized Supply Chain

Lothar, Hanna¹; Schaefer, Peter¹; Rödger, Jan-Markus¹ _____ ¹umlaut SE

An open ecosystem for the exchange of trusted product footprints along supply chains

Hohlweck, Jonas; Beitinger, Gunter¹; Albrecht, Florian; Kind, Andreas; Dietz, Martin; _____ ¹Siemens AG
Müller, Katrin; Jaeger, Florian Ansgar

TU.2.D

SUSTAINABILITY ASSESSMENTS IN INDUSTRY CREATING MEANINGFUL INFORMATION

Sessions Chairs: **Saling, Peter** || BASF SE
Becker, Beatrix || Evonik Operations GmbH
Schowanek, Diederik || Procter & Gamble
Otte, Nikolaj || Henkel AG & Co. KGaA

Bringing PEF labelling into practice: Lessons from the Decorative Paints Certification Pilot

Chebaeva, Natalia¹; Kumar, Karthik Ashok; Sonnen, Max; Huguet Ferran, Pau _____ ¹Ecomatters B.V.

Classifying indicators to manage the transition to circular business models: A systematic literature review

Johnson, Emma¹; Heldt, Lisa; Brambila, Sergio _____ ¹Lund University

Digital Business Solution – Life Cycle Models to create KPIs for industrial decision-making processes – Example of biopolymer PHA as a sustainable packaging concept for the cosmetic industry

Harsch, Matthias; **Saiger, Maximilian**¹ _____ ¹LCS Life Cycle Simulation GmbH

The carbon footprint and wider life cycle impacts of inhaler devices and asthma exacerbations

Whiting, Andy¹; Aumônier, Simon; Collins, Michael; Calnan, Aoife; _____ ¹ERM
 Brick, Nathan; Aumônier, Riley

How are we performing? Supporting companies in interpreting their Carbon Footprint with industry benchmarks

Tesch, Jasmin¹; Forin, Silvia _____ ¹WifOR Institute

TU.2.E

TOOLS, METRICS AND LABELS FOR A CIRCULAR ECONOMY

Sessions Chairs: **Psarra, Lina** || Rockfon, part of ROCKWOOL Group
Kral, Iris || denkstatt GmbH

Benchmark of circularity indicators and links with life cycle assessment

Saidani, Michael¹; Le Pochat, Stéphane; Monteil, Aude; Yannou, Bernard; Garcia, Jade; _____ ¹CentraleSupélec
Osset, Philippe

The role of MFA and LCA to generate a dashboard of indicators for the creation of a circular plastic industry in South Africa

Goga, Taahira¹; von Blottnitz, Harro; Harding, Kevin _____ ¹University of Cape Town –
PhD Candidate

Comparative assessment of Circularity indicators. The case of Reusable Plastic Crates

Batlle-Bayer, Laura¹; Bala, Alba; Fullana-i-Palmer, Pere _____ ¹Escola Superior de Comerç
Internacional, ESCI-UPF

Incorporating circularity in LCA tools

Schumacher, Laura¹; Valencia Martinez, Elsa _____ ¹PRé Sustainability

A tool to determine the optimal environmental lifetime of circular products

Hummen, Torsten¹; Desing, Harald _____ ¹Robert Bosch GmbH

TU.3.A

BUILDING INFORMATION MODELING (BIM) AND LIFE CYCLE ASSESSMENT

Sessions Chairs: **Osset, Philippe** II Solinnen
Hollberg, Alexander II Chalmers University of Technology

Semantic BIM models as inputs for semantic LCI models

Navarrete Gutiérrez, Tomás¹; Hahn Menacho, Álvaro José; Boje, Calin; Benetto, Enrico _____ ¹Luxembourg Institute of Science and Technology

Parametric LCA as a Decision-Making Support Tool in Pre-Design Phases

Ebert, Samuel¹; Hollberg, Alexander; Hollberg, Philipp _____ ¹Technical University Munich

Analysis of current practice and future potentials of LCA in a BIM-based design process in Germany

Schumacher, Rebecca¹; Theißen, Sebastian; Höper, Jannick; Drzymalla, Jan; _____ ¹LIST Digital GmbH & Co. KG
Hollberg, Alexander; Forth, Kasimir; Schneider-Marin, Patricia; Wimmer, Reinhard;
Bahlaui, Sascha; Meins-Becker, Anica; Lambertz, Michaela;

Using standards to maximise the benefit of digitisation of construction product Environmental Product Declaration (EPD) to reduce Building Life Cycle Impacts

Anderson, Jane¹; Rønning, Anne _____ ¹The Open University

Renovation of Existing Buildings in Different Climate Zones of France Based on Life Cycle Assessment as a Response to Climate Change

Ma, Fujing¹; Vogt Wu, Tingting; Laratte, Bertrand; Perry, Nicolas _____ ¹Arts et Métiers ParisTech

TU.3.B

LIFE CYCLE DATA SUPPORTING SUPPLY CHAIN MANAGEMENT

Sessions Chairs: **Rydberg, Tomas** || IVL Swedish Environmental Research Institute
Berlin, Johanna || RISE Reserach Institutes of Sweden AB

Using Blockchain to Change the Way We Manage Life Cycle Data for Coffee Supply Chains

Jattke, Marleen¹; Itten, René; Stucki, Matthias; Ortiz, Carlos; Kanyange, Nadine _____ ¹Zurich University of Applied Sciences

Footprint data certified stepwise and communicated by blockchain through value chain

Carlsson, Raul¹; Lindahl, Lars-Åke; Lindblom, Erik; Rissanen, Erik; Dahllöf, Lisbeth; _____ ¹RISE Reserach Institutes of Sweden AB
 Wohlén, Mattias; Wanemark, Joel

Digital Lifecycle Record for the Circular Economy

Hagedorn, Tabea¹; Plociennik, Christiane; Schebek, Liselotte; Vogelgesang, Malte; _____ ¹TU Darmstadt
 Pourjafarian, Monireh; Rickert, Julian; Ciroth, Andreas; Benner, Wladislaw

Building System Carbon Framework – reporting whole life carbon to reach net zero built environment

De Giovanetti, Luca¹; Hunziker, Roland _____ ¹WBCSD

Digital & verified sustainability information – Are we really there yet?

Rehberger, Max¹; Duque Ciceri, Natalia _____ ¹TÜV SÜD Product Service GmbH

TU.3.C

OPERATIONALISING LIFE CYCLE SUSTAINABILITY ASSESSMENT

Sessions Chairs: **Cordella, Mauro** || TECNALIA
Masoni, Paolo || Ecoinnovazione srl

**Life Cycle Sustainability Assessment for a RoPax Ferry: Hydrogen and Fuel Cells
 Compared with Established Ship Energy Supply Technologies and Fossil Fuels**

Gomez Trillos, Juan Camilo¹; Brand, Urte; Vogt, Thomas _____ ¹DLR – Institute of Networked Energy Systems

How to define supply chains for practical LCSA: application to an energy system

Martin-Gamboa, Mario¹; Dufour, Javier; Iribarren, Diego _____ ¹Universidad Rey Juan Carlos, Spain

**Demarchi + Ecoefficient: the importance of engagement in ecoefficient
 management of industrial operations**

de Moraes, Adriana Graziela¹; Venâncio, Rebeca; Silva, Max _____ ¹BASF – Fundação Espaço ECO

**How circular economy strategies could be considered in Life Cycle Sustainability
 Assessment of products – conclusions from a literature review**

Bachmann, Till M.; **Hackenhaar, Isadora**¹; Huysveld, Sophie; Horn, Rafael; Gehring, Florian; _____ ¹Ghent University
 Dewulf, Jo; Charter, Martin

Six (potential) Misunderstandings on Attributional Life Cycle Assessment

Finnveden, Göran¹ _____ ¹KTH Royal Institute of Technology

TU.3.D

LIFE CYCLE INNOVATION TO DRIVE SUSTAINABILITY AND BUSINESS PERFORMANCE

Sessions Chairs: **Alles, Carina** || Swiss Federal Office of Energy
Fava, Jim || Anthesis Group

Driving Uptake and Increasing Value of LCA for Product Evaluation and Innovation Decisions: A Rapid Prototyping Pilot

Fava, James¹; Cowen, Lina; Evers, David; Faludi, Jeremy; Meyer, David; Vigon, Bruce; _____ ¹Anthesis Group
Zeman, Jeff; Nebel, Barbara; Koehler, Stefanie; Heiler, Dustin

Social innovation and workplace development for social entrepreneurship

Valente, Clara¹; Rubach, Synnøve _____ ¹Norwegian Institute for Sustainability Research
NORSUS

**Life Cycle Thinking as an integral part of entering a new business-field:
From PVC windows to sustainable wooden houses**

Ko, Nathanael¹; Bässler, Tilman; Bässler, Benjamin _____ ¹oeko-ko.de

Stay with us for interactive discussions! LCA in innovation processes

Question 1: Where do we want to be?

Question 2: What are the barriers to realizing this vision/opportunity?

Alles, Carina¹; **Fava, Jim**² and all Session Participants _____ ¹Swiss Federal Office of Energy
²Anthesis Group

Continuation of interactive discussions on LCA in innovation processes

**Question 3: How do we get there and overcome these barriers? – Path forward
and wrap-up**

Alles, Carina¹; **Fava, Jim**² and all Session Participants _____ ¹Swiss Federal Office of Energy
²Anthesis Group

TU.3.E

CIRCULAR ECONOMY AND CIRCULAR SOCIETY IN LCM

Sessions Chairs: **Briem, Ann-Kathrin** || University of Stuttgart
Jenne, Andreas || REHAU Group

Circularity of consumer electronics within Life Cycle (GAP) Analysis

Dieterle, Michael¹; Lätsch, Corinna¹; Nioac de Salles, Ana Claudia _____ ¹Fraunhofer Institute for Chemical Technology ICT

Direct and indirect environmental effects of service lifetime extension of mobile internet-enabled devices

Itten, René¹; Jattke, Marleen; Bieser, Jan; Stucki, Matthias _____ ¹Zürich University of Applied Sciences

reciChain – Closing the loop in a social and responsible way

Souza, Amanda¹; Viñas, Rafael _____ ¹BASF – Fundação Espaço ECO

Adding Transparency to Circular Flow of Batteries

Fallahi, Sara¹; **Diener, Derek**¹; Kazmierczak, Karolina; Calderon, Pavel _____ ¹RISE – Research Institutes of Sweden AB

Four-eyes principle in circular economy: bringing the necessary trust and transparency to metrics and labels

Duque Ciceri, Natalia¹; Rehberger, Max _____ ¹TÜV SÜD Product Service GmbH

Schedule

WEDNESDAY, 08 SEPTEMBER

08:45 – 17:45 CEST

HOST-SESSION FROM FESTO

09:00 – 09:30 CEST

KEYNOTE SPEECH

09:30 – 10:00 CEST

PANEL DISCUSSION

10:00 – 10:30 CEST

Building a Sustainable Future Based on Innovation and Digitalization
Moderators: **Rebecca Freitag and Dr. Hannes Krieg**

08:45 – 09:00 CEST

Beginning of the conference day II Getting in the mood for the day

09:00 – 10:30 CEST

Host-Session from Festo

Sustainable future paths for industry – bringing together the ecological and digital transformation

Bringing together the ecological and digital transformation opens the room to enable industrial value creation, business models and production processes in a sustainable, resource-efficient and circular way.

Speakers II Presenters:

Dr. Elias Knubben, Vice President Research and Innovation at Festo SE & Co. KG

Dr. Heinrich Frontzek, Vice President Corporate Communication at Festo SE & Co. KG

Keynote Speech by Prof. Dr. Dirk Messner, President of the German Environment Agency (UBA)
The Missing Link: Merging Sustainability Transformations and Digitalization

Panel Discussion

Panel Discussion organized by the Plattform Industrie 4.0

Sustainable production – actively shaping the ecological transformation with industry 4.0

Moderation:

Janina Henning, Community Manager Sustainability, Plattform Industrie 4.0

Speakers II Presenters:

Prof. Dr. Dirk Messner, President of the German Environment Agency (UBA)

Prof. Dr. Frank Piller, Institute for Technology and Innovation Management (TIM),
RWTH Aachen University; Working Group Digital Business Models, Plattform Industrie 4.0

Dr. Carsten Polenz, Vice President, SAP SE; Member of the Steering Committee, Plattform Industrie 4.0

Lisa-Alexandra Unkelhäuser, Senior Partner, Bosch Climate Solutions GmbH

Prof. Dr. rer. nat. Liselotte Schebek, Chair of Material Flow Management and Resource Economy,
TU Darmstadt; Scientific Director at Fraunhofer IWKS

Dr.-Ing. Johannes van der Beek, Group Director R&D / Design & Engineering and Member of
the Executive Board, MOSCA GmbH

10:30 – 10:45 CEST

Coffee Break

Schedule

WEDNESDAY, 08 SEPTEMBER

08:45 – 17:45 CEST

PREVIEW LCM 2023

16:45 – 17:00 CEST

BEST ORAL PRESENTATION || BEST POSTER

17:00 – 17:30 CEST

Building a Sustainable Future Based on Innovation and Digitalization
Moderators: Rebecca Freitag and Dr. Hannes Krieg

10:45 – 12:15 CEST **Parallel-Session Slot 1 || WE.1.A – WE.1.E**

12:15 – 13:15 CEST **Lunch Break**

13:15 – 13:30 CEST **Refresh after Lunch**

13:30 – 15:00 CEST **Parallel-Session Slot 2 || WE.2.A – WE.2.E**

15:00 – 15:15 CEST **Coffee Break**

15:15 – 16:45 CEST **Parallel-Session Slot 3 || WE.3.A – WE.3.E**

16:45 – 17:00 CEST **Preview of the LCM 2023**

17:00 – 17:30 CEST **Announcement of the best oral presentation || best poster**

17:30 – 17:45 CEST **Take Home-Message || End of the conference day**

Schedule

WEDNESDAY, 08 SEPTEMBER

10:45 – 16:45 CEST

SESSION SLOT 1 || WE.1.A – WE.1.E

10:45 – 12:15 CEST

SESSION SLOT 2 || WE.2.A – WE.2.E

13:30 – 15:00 CEST

SESSION SLOT 3 || WE.3.A – WE.3.E

15:15 – 16:45 CEST

WE.1.A

LIFE CYCLE SUSTAINABILITY IN CONSTRUCTION AND RENOVATION OF BUILDINGS

Sessions Chairs: Schau, Erwin M. II InnoRenew CoE
Palumbo, Elisabetta II RWTH Aachen University

Life cycle assessment of smart buildings

Pannier, Marie-Lise¹; Bigaud, David _____ ¹Université d'Angers

Cost-benefit analysis of the means of access used in maintenance actions

Ferreira, Cláudia; Dias, Ilídio; Silva, Ana¹; de Brito, Jorge; Flores-Colen, Inês _____ ¹IST-ID

Greenhouse gas emission and sustainability of green roofs and storm water system on a district level – comparisons with a lifecycle perspective

Schade, Jutta¹; Mukkavaara, Jani; Brunklaus, Birgit _____ ¹RISE – Research Institutes of Sweden AB

Implementing artificial intelligence techniques to predict environmental impacts: case of construction products

Koyamparambath, Anish¹; Adibi, Naeem; Szablewski, Carolina; Adibi, Sierra A; _____ ¹Université de Bordeaux/ISM-CyVi
Sonnemann, Guido

The relevance of the building system boundary to conduct an LCA of a passive house: A comparison of two frameworks for assessing building sustainable performance DGNB and Level(s)

Palumbo, Elisabetta; Soust-Verdaguer, Bernardette¹; Llatas, Carmen; Traverso, Marzia _____ ¹Universidad de Sevilla

WE.1.B

SDG AS A BASIS FOR SUSTAINABILITY ASSESSMENTS OF PRODUCTS AND COMPANIES

Sessions Chairs: **Saling, Peter** || BASF SE
 Morel, Stéphane || Quantis

SDG based Portfolio-Sustainability-Assessment

Zilberfarb, Noël¹ _____ ¹ARKEMA

Three pillars, six capitals, seventeen SDGs, one single score – A unified framework for quantification of progress towards sustainable development

Weidema, Bo¹ _____ ¹Aalborg University

Sustainability evaluation of products – identifying product related SDGs and indicators

Eberle, Ulrike; Wenzig, Julius¹ _____ ¹University of Witten/Herdecke

Social Hotspot Assessment based on SDG within the SEEbalance® approach

Saling, Peter¹ _____ ¹BASF SE

Linking the UN Sustainable Development Goals to life cycle impact frameworks: case study findings

Harmens, Rosan¹ _____ ¹PRé Sustainability B.V.

WE.1.C

METHODOLOGICAL APPROACHES TO ASSESS LIFE CYCLE CONSEQUENCES

Sessions Chairs: **Fröhling, Magnus** || TU Munich (TUM)
Hiete, Michael || Ulm University

Environmental consequences of policies in construction sector: combining economic simulation with consequential LCA

Tavares lima de almeida, Denise¹; CHARBUILLET, Carole; Marotte, Charlotte; _____¹Arts et Métiers ParisTech
Lebert, Alexandra; Perry, Nicolas

How can the End of Life of automotive polymers be considered in Life Cycle Assessment? – A scenario based evaluation of the current End of Life situation

Haun, Patrick¹; Müller, Philipp; Traverso, Marzia _____¹Dr. Ing. h. c. F. Porsche AG

Prediction on the recovery of future timber volumes to strengthen consequential LCA approaches of cascading timber: the PRecTimber model

Szichta, Pia¹; Risse, Michael; Weber-Blaschke, Gabriele; Richter, Klaus _____¹Technische Universität München

A framework for linking the planetary boundaries to organizational LCAs

Oosterhoff, Hendrik¹; Golsteijn, Laura; Ryberg, Morten Walbech; Laurent, Alexis _____¹PRé Sustainability

Application of entropy production to compare the environmental sustainability of industrial processes in Entropy-LCAs

Rapf, Matthias¹; Tang, Longhan; Pekgil, Gizem; Kranert, Martin _____¹University of Stuttgart,
Institute for Sanitary Engineering,
Water Quality and Solid Waste
Management

WE.1.D

SUSTAINABILITY OF BUSINESS MODELS AND INNOVATIONS

Sessions Chairs: **Nilsson-Lindén, Hanna** || RISE Reserach Institutes of Sweden AB
 Lang-Koetz, Claus || Pforzheim University

Industrial Symbiosis – When disposed Machining Knives become Raw Material

Hagedorn, Wiebke¹; Greiff, Kathrin; Bienge, Katrin _____ ¹Wuppertal Institute for Climate,
Environment and Energy

Could battery swapping stations make micromobility more environmentally sustainable? A comparative LCA study with shared electric scooters and electric mopeds.

Finke, Sebastian¹; Schelte, Nora; Severengiz, Semih; Kähler, Ferdinand _____ ¹Bochum University of Applied
Sciences

Switching the focus from product function to business profit: Introducing business model LCA

Baumann, Henrikke¹; Böckin, Daniel; Goffetti, Giulia; Tillman, Anne-Marie; Zobel, Thomas _____ ¹Chalmers University of
Technology

Experimentation, development and systematic integration of an ecodesign process within a large retail company – case of Colruyt Group

McHardy, Cara¹; Van Hemelryck, Steven; Adibi, Naeem; Voorend, Wannes _____ ¹Colruyt Group Services

Water and energy to whisky: What is the eco-efficiency of heat recovery in distilleries?

Schestak, Isabel¹ _____ ¹Bangor University

WE.1.E

GREEN-LEAN-DIGITAL

Sessions Chairs: **Hohmann, Andrea** || Fraunhofer IGCV
Rummel, Silvia || Festo SE & Co. KG

Connecting reliability and sustainability considerations in mechanical & civil engineering design to reduce oversizing without risking disasters

Dazer, Martin¹; Ostertag, Andreas; Herzig, Thomas; Albrecht, Stefan; Bertsche, Bernd _____ ¹Universität Stuttgart

Workflow automation for multi-purpose LCA of large product portfolios

Wehner, Daniel¹; Betten, Thomas; Prenzel, Tobias Manuel; Briem, Ann-Kathrin; _____ ¹Fraunhofer-Institut für Bauphysik IBP
 Hong, Sun Hea; Ilg, Robert

Accelerating sustainable development and production of nano-materials and printed electronics

Prenzel, Tobias Manuel¹; Gehring, Florian; Davis, Zachary J. _____ ¹Fraunhofer IBP

Internet-of-Things Enabled Hotspot Analysis with Dynamic Life Cycle Inventory

Cornago, Simone¹; Tan, Yee Shee; Ramakrishna, Seeram; Low, Jonathan Sze Choong _____ ¹Singapore Institute of Manufacturing Technology, National University of Singapore

An inclusive, sustainable and connected society? IoT implementation in a Swedish municipality

Lindén, Hanna¹; Chiew, Yoon Lin; Centerholt, Victor; Saarikko, Ted; Lundstrom, Anders _____ ¹RISE Reserach Institutes of Sweden AB

WE.2.A

LIFE CYCLE SUSTAINABILITY IN CONSTRUCTION AND RENOVATION OF BUILDINGS II

Sessions Chairs: **Schau, Erwin M.** || InnoRenew CoE
Palumbo, Elisabetta || RWTH Aachen University

Life cycle sustainability assessment of a residential building project in northeast China

Dong, Yahong¹; Liu, Peng _____ ¹Qingdao University of Science and Technology

Analysis of the production of traditional and alternative wall-building materials in Vietnam

Ruf, Lavinia¹; Schwede, Dirk; Nguyen Van, Tuan; Bui, Quoc-Bao; Le Thi, Song; _____ ¹University of Stuttgart, Stuttgart, Germany
 Stergiaropoulos, Konstantinos

Life Cycle Assessment of Advanced Insulation Materials towards NZEBs

Antypa, Despoina; Sieti, Natalia; Vlysidis, Anestis; Gkika, Anastasia; **Petrakli, Foteini**¹; _____ ¹IRES—Innovation in Research & Engineering Solutions
 Kraft, Robert; Böhm, Robert; García, Ignacio; Subrahmanyam, Raman; Smirnova, Irina; Koumoulos, Elias;

Challenges to build a national system for quantifying the Life Cycle carbon footprint of buildings

Wiche, Pia¹; Rodríguez Droguett, Bárbara; Granato, Danilo _____ ¹EcoEd

Potentials for emission reduction and value creation in the rehabilitation of existing building stock using macroeconomic analysis

Perez-Valdes, Gerardo A.¹; Fufa, Selamawit; Fjellheim, Kristin _____ ¹SINTEF Industry

WE.2.B

SOCIAL LIFE CYCLE ASSESSMENT OF PRODUCTS

Sessions Chairs: **Traverso, Marzia** || RWTH Aachen University
Finkbeiner, Matthias || TU Berlin

Social life cycle assessment of free-floating car sharing: a case study in Berlin

Gompf, Katharina¹; Traverso, Marzia; Hetterich, Jörg _____ ¹BMW Group / RWTH Aachen University

UNEP 2020 Guidelines for Social Life Cycle Assessment of products and Organizations and their Pilots

Traverso, Marzia¹; Benoit-Norris, Catherine; Valdivia, Sonia; Finkbeiner, Matthias; _____ ¹Institute of Sustainability in Civil Engineering, RWTH Aachen University
 Schaubroeck, Thomas; Berger, Markus; Neugebauer, Sabrina; Arcese, Gabriella;
 Russo Garrido, Sara; Ekener, Elisabeth; Mankaa, Rose Nangah

Social Life Cycle Impact Assessment of Poultry Production in Indonesia

Saputra, Sharah Yunihar; Yunus, Khaldia; Marcellina; **Hanafi, Jessica**¹; Traverso, Marzia; _____ ¹Life Cycle Indonesia
 Monteiro, Kevin; Djohan, Erwin; Adiwijaya, David

Social LCA application based on the SEEBalance® approach

Saling, Peter¹ _____ ¹BASF SE

Developing socio-economic indicators for overall life cycle sustainability assessment of retail sector – case of Colruyt Group

Adibi, Naeem¹; Van Hemelryck, Steven; McHardy, Cara; Voorend, Wannes _____ ¹WeLOOP

Social Life Cycle Assessment for informal settings: the experience from the recycling system of Cuenca, Ecuador

Cabrera, Fanny; Pacheco, Gustavo; Vanegas, Paúl; **Sucozhafñay, Dolores**¹ _____ ¹Universidad de Cuenca

WE.2.C

BENEFITS OF RETAINING MATERIALS AND THEIR QUALITY IN A CIRCULAR ECONOMY

Sessions Chairs: **Hummen, Torsten** || Robert Bosch GmbH
Dewulf, Jo || Ghent University

Circular economy concepts for a plastic loop – comparing mechanical and chemical recycling regarding material quality

Stallkamp, Christoph¹; Volk, Rebekka; Schultmann, Frank _____ ¹KIT – Karlsruher Institut für Technologie

How pyrolysis as chemical recycling technology contributes to a circular carbon economy as analysed by LCA

Horlacher, Maike¹; Deregowski, Carolin¹ _____ ¹Sphera Solutions GmbH

Applying cascading and substitution principles for a careful resource use in wood based-products

Ott, Stephan¹; Wagner, Anna¹ _____ ¹Technical University Munich

Effectively preserving material quality by design

Hummen, Torsten¹ _____ ¹Robert Bosch GmbH

Statistical entropy analysis to evaluate cascading use of wood and its impact on material circularity

Navare, Kranti¹; Vrancken, Karl C.; Van Acker, Karel _____ ¹KU Leuven

WE.2.D

BUSINESS LIFE CYCLE NETWORKS

Sessions Chairs: **Bajaj, Sanjeevan** || Forum for Sustainability through Life Cycle Innovation e.V.
Chapman, Sonia Karin || Rede Empresarial Brasileira de Avaliação de Ciclo de Vida (Rede ACV)

Streamlining environmental footprinting by utilising corporate footprints

Williams, Ellie¹; Vieira, Marisa _____ ¹PRé Sustainability

Rede ACV, the Brazilian Business Life Cycle Network

Chapman, Sonia Karin¹ _____ ¹Rede ACV

Engaging stakeholders in local and regional Life Cycle Management decision-making for urban planification

Bolle, Clément¹; Szablewski, Carolina; Adibi, Naeem _____ ¹WeLOOP

Making an impact through joint efforts – Values, outcomes and lessons from 25 years of collaboration

Palander, Sara¹; Wikström, Anna; Rydberg, Maria _____ ¹Chalmers University of Technology/Swedish Life Cycle Center

FSLCI – A community approach to driving Life Cycle Innovation globally

Bajaj, Sanjeevan¹; Prox, Martina; Sonnemann, Guido; Strothmann, Philip; Fava, James _____ ¹Forum for Sustainability through Life Cycle Innovation e.V.

WE.2.E

MOBILIZING LCA RESOURCES THROUGH DIGITAL COLLABORATION

Sessions Chairs: **Mieras, Eric** || PRé Sustainability
Wright, Laurie || Solent University

Research institute strengthens its LCA capacity by internal collaboration and data infrastructure

Carlsson, Raul¹; Davis, Jennifer; Edoff, Petra; Karpenja, Tatjana; Lorentzon, Katarina; _____¹RISE Reserach Institutes of Sweden AB
 Rex, Emma

High-quality Recycling through self-learning and resilient Recycling Networks using a Combination of Agent-Based Modelling and Life-Cycle Assessment

Brinkmann, Tobias¹; **Steinfeldt, Michael**¹; Spuziak-Salzenberg, Detlef; Arndt, Carmen; _____¹brands & values GmbH
 Carstens, Anna; Albers, Henning; Stührmann, Torben; Germer, Frauke

Decentralized LCA in innovation and reporting processes of a large enterprise

Otte, Nikolaj¹; Tolls, Johannes; Christine, Schneider; Klemmer, Anna; Kremer, Joachim _____¹Henkel AG & Co. KGaA

How to train artificial intelligence to improve industrial applicability of life cycle assessment

Thore, Andreas; **Carlsson, Raul**¹ _____¹RISE Reserach Institutes of Sweden AB

Equipment and human factor in geographically dispersed simultaneous data gathering: case of The Ultimate Cheeseburger online experiment

Ristic, Dusan¹; Jäger, Henry; Smetana, Sergiy; Heinz, Volker _____¹DIL Technologie GmbH

WE.3.A

BUSINESS MODELS FOR A CIRCULAR ECONOMY

Sessions Chairs: **Mellquist, Ann-Charlotte** || RISE Reserach Institutes of Sweden AB
Rex, Emma || RISE Reserach Institutes of Sweden AB

Circular business model implementation in practice: Learnings from the case of electric vehicle batteries

Schulz-Mönninghoff, Magnus¹; Bey, Niki; Niero, Monia _____ ¹Mercedes Benz AG

Remanufacturing business model cases for a Circular Economy

Oiko, Olívia¹ _____ ¹Universidade Estadual de Maringá

Explorative approach to circular business structures in the magnet industry

van Nielen, Sander¹; Kleijn, René; Miranda Xicotencatl, Brenda _____ ¹Leiden University

The potentials to capture circular economy values in the energy sector through business models

Doumit, Farah¹; Michel, Axel _____ ¹Engie/Polytechnique

Exploring reluctance to circular business models – the case of light as a service

Rex, Emma¹; Kron, Ulrika _____ ¹RISE Reserach institutes of Sweden AB

WE.3.B

SDG CORPORATE RESPONSIBILITY

Sessions Chairs: **Barkmeyer, Mercedes** || Festo SE & Co. KG
Maslo, Andreas || Verso GmbH
Holl, Florian || Verso GmbH

Creating impact by integrating the SDGs in a company strategy

Morao, Ana¹; Visser, Diana _____ ¹Corbion

Assessing the Impact of Electrolytic Hydrogen Production on the Sustainable Development Goals – Early Results and Way Forward

Portner, Benjamin W.¹; Weidema, Bo; Moser, Leonard _____ ¹Bauhaus Luftfahrt e.V.

Life cycle impacts of Electrolux domestic washing machines and proposal for their impact reduction

Zuin, Stefano¹; Saitov, Rustem; Celotto, Monica; Stabon, Elisa; Nori, Michele; _____ ¹Electrolux Italia SpA
Colombera, Giovanni

Approach for assessing environmental handprints

Lakanen, Laura¹; Grönman, Kaisa; Kasurinen, Heli; Vatanen, Saija; Pajula, Tiina; _____ ¹LUT University
Behm, Katri; Soukka, Risto

A tool for the streamlined sustainability assessment of emerging technologies in resource-intensive industries

Buchner, Georg A.¹; Klose, Svenja; Glardon, Oliver; Fröhling, Magnus _____ ¹Technical University of Munich

WE.3.C

BENEFITS OF RETAINING MATERIALS AND THEIR QUALITY IN A CIRCULAR ECONOMY – CASE STUDIES

Sessions Chairs: **Hummen, Torsten** || Robert Bosch GmbH
Dewulf, Jo || Ghent University

Consequential vs. attributional approach to the LCA of zinc recovery from spent pickling acids

Arguillarena, Andrea¹; Margallo, María; Urtiaga, Ane _____ ¹Universidad de Cantabria/
 University of Cantabria

Sustainability of demolition waste management in the framework of circular economy roadmap – a case study in Luxembourg

Guiron, Mélanie¹; Bertrand, Alexandre; Ehlert, Christina _____ ¹Luxembourg Institute of
 Science and Technology (LIST)

Implementation of LCA to support circular process development for extraction of CRMs from seawater brines

Yilmaz, Özge¹; Uysal, Çınar; Papapetrou, Micheal _____ ¹Ekodenge

Life Cycle analysis of a refurbished smartphone in Chile

Pequeño Leclerc, Felipe; Granato, Danilo; Wiche, Pia¹ _____ ¹EcoEd

The role of LCA in eco-innovation. The particular case of the FlashPhos sustainable process

Muñoz Marín, Encarnación¹; Cascajo, Jose Maria; Rapf, Matthias _____ ¹INERCO

WE.3.D

LIFE CYCLE MANAGEMENT IN EDUCATION AND CULTURE

Sessions Chairs: **Lindner, Jan Paul** || Bochum University of Applied Sciences
Viere, Tobias || Pforzheim University

Education for optimized Life Cycle Management: The Project e-CIRP and its insights into embedding circular economy aspects to product design via teaching

Graf, Roberta¹; Grönman, Kaisa; Balkenende, Ruud; Danese, Pamela; Holopainen, Jani; Luukkonen, Matti; Nevgi, Anne; Nuortila-Jokinen, Jutta; Olsen, Stig; Sandström, Niclas; Tegazi, Stefano

¹Fraunhofer Institute for Building Physics IBP

LCA between democratization and expert rule

Koch, Christian¹; Fogh Friedrich, Mathilde; Kjøniksen, Anna-Lena; Tellnes, Lars G. F.

¹Aarhus University

Sociabill, a Serious Game to educate adults about the S-LCA methodology

Schiller Becerra, Maira Christina; **Nangah Mankaa, Rose**¹

¹Institute of Sustainability in Civil Engineering (INaB)
RWTH Aachen

Teaching LCA in higher education– towards global empirical insights

Harding, Kevin; Horta Arduin, Rachel; Miao, Zoe Chunyu; Sonnemann, Guido; Strothmann, Philip; **Viere, Tobias**¹; Wright, Laurie; Zeller, Vanessa

¹Pforzheim University

WE.3.E

APPLIED DIGITAL SOLUTIONS – CONNECTING GREEN AND DIGITAL TRANSFORMATIONS?

Sessions Chairs: **Le Blevennec, Kévin** || VITO
Adibi, Naeem || WeLOOP

Industrial Symbiosis Marketplace Concept for Waste Valorization Pathways

Akrivou, Chrysanthi¹; Łękańska-Andrinopoulou, Lucyna¹; Manousiadis, Charalampos¹; _____¹Institute of Communication and Computer Systems (ICCS)
 Tsimiklis, Georgios; Oikonomopoulou, Vasiliki; Papadaki, Sofia; Krokida, Magdalini;
 Amditis, Angelos

The Circular Data Centre Compass – a digital tool to model and assess data centre sustainability

Andrews, Deborah¹; Bademci, Bahattin; Adibi, Naeem; Whitehead, Beth; _____¹London South Bank University
 Bienge, Katrin; Ye, Zhihui; Szablewski, Carolina; Fryer, Emma; Kerwin, Kristina;
 Schrijvers, Dieuwertje; O'Callaghan, Ellie;

Materials role in pavement design and its impacts in LCA of road construction and use phase

de Montaignac, Renaud; Vlasopoulos, Nikolaos; Negishi, Koji; Queck, Oliver¹ _____¹Holcim Kies und Splitt GmbH

Detecting environmental hotspots in extensive portfolios through LCA and data science

Shevelov, Alexander¹; Prenzel, Tobias Manuel; Lebsack, Carina; Wehner, Daniel; _____¹Adolf Würth GmbH & Co. KG
 Wolpert, Frank

The zero impact factory twin – a case study

Rödger, Jan-Markus¹; Rößling, Oliver¹ _____¹umlaut SE