

# 2022

SWEDISH LIFE CYCLE CENTER ANNUAL REPORT

# Swedish Life Cycle Center Annual report 2022

No 2023:01

#### Networking and drive the life cycle field forward

It is all about creating the best conditions for people to collaborate within. Swedish Life Cycle Center provides an environment for our partners and others to network and drive the life cycle field forward. Our ways of working generate new knowledge, impact and influence the life cycle field and create awareness about the life cycle perspective needed in business, policy and other parts of society. This year has given rise to new collaborations and projects.

In our first year of stage 10 we introduced Life Cycle Talks, a series of talks presenting the research front to keep you up to date with the science and application of the life cycle perspective. Since the first talk was recorded live on 16th of June 2022, four Life Cycle Talks have been given and gained a global reach.

New collaboration partners have joined the Swedish Life Cycle Center during the year. CEVT and Höganäs are new partners, and two new SMEs signed our collaboration letter. These companies all have experience of applying life cycle approaches in their organizations and are now joining the Center to learn from each other and contribute to drive the life cycle field forward.

Our Scientific director, Greg Peters, has been working together with our academic partners and research institutes towards a Center research strategy. This strategy highlights the importance of collaboration for higher education, increased visibility of Swedish life cycle research and a willingness to host a scientific conference in the life cycle field in Sweden.

Two new working groups have been initiated, one about LCA and standardization and one about Biodiversity and LCA. We have arranged four training occasions for the popular two-day course Applied Life Cycle Thinking and in the end of the year we have also launched a webinar series about the life cycle perspective in the public sector.

The project "Innovation cluster for the life cycle perspective" provides a meeting place where industry, academia, authorities and other parts of society meet to create opportunities for an increased understanding and use of the life cycle perspective. The innovation cluster has been important for the Swedish Life Cycle Centre, our partners and for many of our activities. For example, to promote our working groups, the network conference, to be able to develop Life Cycle Talks and our webinar series for example. The project is financed by the



Sara Palander, Director, Swedish Life Cycle Center Photo by Daniel Karlsson

Swedish Energy Agency and Swedish Life Cycle Center's partners and will run until May 2025.

One of the highlights of the year was meeting everyone at the annual network conference and exploring this year's theme "Life Cycle Thinking in Policy and Legislation". The conference was held in Stockholm at the Swedish Environmental Protection Agency and during the network conference we also took the opportunity to thank our chairman of the Life Cycle Center Board Lars Mårtensson, Director Environment and Innovation at Volvo Trucks, for six successful years! In January, we look forward to welcoming our new chairman Susan Iliefski Janols, Vice President Sustainability Products & Services at Essity.

Together with our partners, government agencies and SMEs in collaboration with the Center we will continue to pool our efforts to collaborate towards our vision "Credible and Applied Life Cycle Thinking Globally". Hope you will join us on this journey!

Best Regards Sara Palander Director, Swedish Life Cycle Center

## The network in numbers

Applied life cycle thinking has always remained in focus and this has gathered experts from our partners, building a critical mass of researchers, practitioners and decision makers who use the Center as their common arena upon which further activities and perspectives are developed over time. Below is a summary of 2022 in numbers:







# Joint collaboration to drive the life cycle field forward

#### The Swedish Life Cycle Center has historically participated in a great amount of research projects and contributed to many successful research results within the field of life cycle management and life cycle assessment.

In 2022 the Center was involved in the following projects: "Impacts on producers and customers of conflicting rules for LCA", "ASSIST – Relay industrial supply chain sustainability data", "Environmental Footprint in Sweden - increased competence and communication", "Coordination of LCAdata for increased traceability and recycling of plastics and Incentives for energy recovery in LCA for plastics".

The Center's competence and resource base are its partners a network of life cycle professionals. A significant part of the research in the life cycle field is conducted through partners, which is not highlighted in this report.

Impacts on producers and customers of conflicting rules for LCA

The project "Impacts on producers and customers of conflicting rules for LCA" (ICON) started in June 2020 with the aim of increased understanding of the multitude of LCA frameworks used for fuels and the consequences of conflicting rules

During the project eight different fuels were assessed using three different frameworks. The frameworks that were used was the EU Renewable Energy Directive (RED), the EU framework for Product Environmental Footprints (PEF), and the frameworks of Environmental Product Declarations (EPD).

#### "

The project "Impacts on producers and customers of conflicting rules for LCA" gave us new knowledge and insight in different frameworks and how it affects our company."

- Partner, 2022

The study shows that using different frameworks can result in conflicting results and that there is a need for product specific guidelines for biofuels. The project served as a meeting place for LCA researchers and practitioner to discuss methodological issues and the project group's active and fruitful collaboration was important for the outcome and project progress.

#### Environmental footprint – on the agenda

Two projects that will investigate the Product Environmental Footprint (PEF) method were launched during 2022. The PEF is a method launched by the European Commission to measure and communicate the environmental performance of products (both goods and services) across their life cycle, from raw material extraction or cultivation to the end-of-life management, via production, distribution, and use. PEF is also being referred to in EU legislation.



Environmental footprint on the agenda. Photo by Eldar Nazarov, Unsplash.

"Modelling of electricity in Product Environmental Footprints" aimed to investigate the need for revised texts regarding the modelling of electricity production in the EU Ecodesign Regulation for photovoltaics and in the general PEF rules. Furthermore, to propose suggestions for such revisions. These revisions will have an impact on the Battery Regulation since this also refers to the PEF method.

"The Environmental footprint in Swedish industry - increased understanding and implementation" will give businesses, authorities and the public sector in Sweden increased awareness of product-related policy development based on Environmental Footprints at the EU level. Furthermore, the project will make visible and clarify the consequences of proposed method choices within Environmental Footprints in order to better understand the effects an implementation can have in the industry.

#### "

This project is important for understanding how the methods can be developed and improved based on the own implementation. In addition, it will also give us better capacity to handle future regulations based on Environmental Footprints."

- Sara Palander, Project manager, 2022

Increased need for collecting life cycle data from supply chain

The project "ASSIST - Relay industrial supply chain sustainability continue drive the development of technology and methods to data" aimed to better understand companies' current situation ensure the availability of competence and skills in the future. and needs of potential ways forward regarding collecting life cycle data and life cycle inventory data from suppliers. LCA data Meeting place for life cycle professionals collection is currently well-established for LCA, Environmental Product Declarations (EPD), Science Based Target Initiative The project "Innovation cluster for the life cycle perspective" goal is to increase the Swedish collaboration within the life (SBTI) and CDP - Disclosure Insight Action and Traceability cycle-field and contribute to knowledge exchange, competence and recycled content. Today, LCA data is collected from a few suppliers and managed manually, but in the future this needs building and increased understanding of the life cycle to be managed with much less effort and increased speed. An perspective. And also contribute to an increased application effective strategy for data collection is also needed to respond of life cycle perspective. One important meeting place to do so to the increased interest in life cycle analysis (LCA) as well is the Swedish Life Cycle Center's yearly network conference. as LCA data, and the following ways forward were identified for an implementation project: 1) Synergies and relationships between organizations and initiatives, 2) Value-creating and cost-effective data management, 3) Harmonization and standards.

#### "

The project has given us insights in how other companies are working with supply chain data (primary vs generic data)."

- Project participant, 2022

#### Great demand for life cycle competence

The project "Life cycle competence needs, current and future, in the Swedish industry sector" aimed to better understand the competences that industry and society will require in order to handle the demand for life cycle information. Furthermore, the objective was to describe the possibilities that life cycle competences provide in order for the companies to handle large complex systemic changes that will be needed to increase the company's competitiveness whilst handling the conversions to a circular economy, energy transition as well as a more sustainable consumption and

production system.

The conclusion from the study is that competence will be required on all levels in the organization, but the level of knowledge required varies depending on function and the role. It could also be beneficial to create new official roles that guard the transition of the strategy in the company and secure compliance. There is also a general need to raise the awareness of the life cycle perspective in society at large, so there should be mandatory life cycle sections in all educations. Academia, being neutral and a hub for knowledge building, is expected to



Photo taken at the network conference "Life Cycle Thinking in Policy and Legislation. Photo by Technical secretariat.

On November 24, the network conference "Life Cycle Thinking in Policy and Legislation" brought together over 60 participants at the Swedish Environmental Protection Agency in Stockholm

Björn Risinger, Director General of the Swedish EPA opened the conference. Serenella Sala, from the European Commission's Joint Research Centre, gave a keynote speech about the development of LCA and life cycle thinking in European policies, followed by speeches from our newest partners Polestar (by Frida Røyne), Höganäs (by Hilmar Vidarsson), and CEVT (by Lionel Belzons), who talked about how they work with life cycle thinking and life cycle assessment in their organizations and how they face lifecycle-based requirements today and how well prepared they are for future legislation.

Björn Spak, Swedish EPA and Eva-Lotta Lindholm, Swedish Energy Agency then gave presentations about the current development of environmental policy based on life cycle thinking. Our final presenter Susan Iliefski Janols, Essity, talked about trends, goals and external life-cycle requirements. A group discussion was held to reflect on the conference theme.

#### Five working groups this year

During the year, five working groups have been coordinated within the Innovation cluster: "Academy group", "Biodiversity & LCA", "Dialogue forum for government agencies", "Environmental footprint", "Recent and current standardization in LCA". These have been developed and chaired by partners with support from the Technical secretariat. The academy group has been active in the development of the Research strategy for stage 10 and the group for government agencies has discussed Cooperation around EU initiatives. The environmental footprint group has been the foundation to the newly started project "Environmental footprint in Swedish industry".

#### "

The working group has been an important way to strengthen our internal coordination within our field of knowledge."

#### - Board member, 2022

Two new working groups have also been initiated: "Recent and current standardization in LCA" about LCA standardization for researchers, practitioners and decision-makers within academia, research institutes, industry and government agencies aimed to disseminating and discussing recent and current standardization in LCA. The other group "Biodiversity & LCA" has been introduced to give professionals in Biodiversity and LCA a meeting place to share knowledge in this field. Their aim is also to identify common challenges and needs in order to build new knowledge and new collaboration projects.

#### Training for professionals

During the year 64 people took a course given by the Center. Half of them took the open two day course and half of them were Electrolux employees from all over the world who participated in a shorter version of the Applied Life Cycle Thinking course.

The common goal of the courses was to get a deeper understanding on how to apply life cycle thinking within their respective organization, through real cases and proven methods. Electrolux had an additional aim to create more engagement for the life cycle perspective among their staff.



Screenshot from the Applied Life Cycle Thinking Course, 14-15 November 2022. Photo by Technical secretariat.

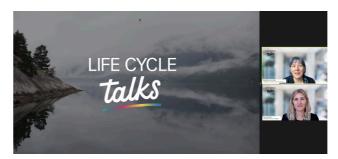
All courses were given in English and held online using digital tools for both lectures and group work. The participants in the open courses all came from different backgrounds and worked, for example, as sustainability managers, sustainability consultants, design engineers, regulatory affairs managers and chief designers. The course consisted of presentations, guest lecturers, many practical examples, several group exercises and a lot of dialogue between course participants and teachers. It also provided opportunity for networking between the participants. All courses were highly appreciated by the participants and received over nine out of ten in the final evaluation score.

#### Joint research strategy

In May the Board approved our Research strategy for 2022-2024, developed by the Center's Scientific Director Greg Peters. This strategy aims to increase the scientific profile of the Center and increase the scientific collaboration among partners. It will also guide the Technical secretariat on how to support the researchers among the partners.

# Life Cycle Talks - Knowledge towards a sustainable future

In June, we launched the Life Cycle Talks – a series of talks presenting the research front to keep you up to date with the science and application of the life cycle perspective. Four Life Cycle Talks have since been given with over 1000 views worldwide. The following Life Cycle Talks were arranged, and are available on our YouTube-channel here: <u>"How green is</u> <u>your business?</u>" with Henrikke Baumann; <u>"How can we reach</u> <u>a sustainable consumption?</u>" with Göran Finnveden; <u>"How</u> <u>can social life cycle assessment address social sustainability?</u>" with Mathias Lindkvist and <u>"How to assess the environmental</u> <u>performance of emerging technology?</u>" with Matty Janssen.



Screenshot from the first ever Life Cycle Talks: How green is your business? with Henrikke Baumann 16 June 2022. Photo by Technical secretariat.

#### Global network of life cycle communities

Many life cycle networks and communities are active worldwide. We all face an increasing demand of life cycle knowledge from many societal levels. In August the Forum for Sustainability through Life Cycle Innovation (FSLCI) visited us in Gothenburg and we decided to initiate a series of meetings to share information, knowledge, challenges and success stories with an overall aim to learn from each other.

At the 11th International conference on Life Cycle Management (LCM 2023), we will arrange a round table session together and explore the future life cycle network. The session will be chaired by Swedish Life Cycle Center together with the American Center for Life Cycle Assessment (ACLCA).

#### "

The partnership gives a unique network and lots of knowledge exchange. "

- Board member, 2022

# Research projects

Impacts on producers and customers of conflicting rules for LCA (ICON)

**Project manager:** Sofia Poulikidou and Tomas Rydberg / IVL Swedish Environmental Research Institute & coordinated by Anna Wikström, Technical secretariat, Swedish Life Cycle Center.

Time period: 2020-06-15 - 2021-12-31.

**Funded by:** Swedish Energy Agency (within the collaborative research program Renewable transportation fuels and systems).

Participating organizations: IVL Swedish Environmental Research Institute, Chalmers University of Technology, KTH, Royal Institute of Technology, RISE Research Institutes of Sweden AB, Scania CV AB, Volvo Technology, BASF AB, CIT Industriell Energi AB, FordonsGas Sverige AB, Lantmännen Aspen AB, Nätverket För Transporter & Miljön, Preem AB, Scandinavian Enviro Systems AB, SEKAB Biofuel Industries AB, SPBI Service AB, St1 Sverige AB, TERRA AB. Project outcomes: Eight case studies, a recorded result webinar that has been made available here, poster presentation at the online conference LCM 2021 (5-8 September 2021), oral presentation at f3 Swedish Knowledge Centre for Renewable Transportation Fuels program

conference 2021 and oral presentation at Transportforum 2022, and a published journal article in Frontiers in Climate 12 October 2022 and a published project report available. **Read more <u>here</u>**.

# ASSIST – Relay industrial supply chain sustainability data

**Project manager:** Raul Carlsson, RISE Research Institutes of Sweden.

Time period: 2021-11-01 - 2022-07-31.

Funded by: Vinnova, Sweden's innovation agency.

**Participating organizations:** Chalmers University of Technology, IVL Swedish Environmental Research Institute, KTH Royal Institute of Technology, Scania, SKF, Vattenfall, Volvo Buses, Volvo Cars.

**Project outcomes:** The project report summarizes the current situation of the need for an efficient strategy for LCA data collection and suggests a way forward through 1) Synergies and relationships, 2) Value-creating and cost-effective data management, and 3) Harmonization and standards. Next step is to apply for an implementation project. **Read more here.** 

Life cycle competence needs, current and future, in the Swedish industry sector

Project managers: Marie-Louise Lagerstedt Eidrup & Sara
Palander, Swedish Life Cycle Center.
Time period: 2021-12-01 - 2022-03-30.
Funded by: Adlerbertska Foundations.

Participating organizations: Chalmers University of Technology and partners in Swedish Life Cycle Center.
Project outcomes: Increased understanding and dialogue about life cycle competences requested by industry to respond to an increased need for life cycle assessment, thinking and information. Project report and presentation at Life Cycle Innovation Conference 2022 in Berlin.
Read more here.

Environmental footprint in Swedish industry – increased understanding and implementation Project manager: Sara Palander, Swedish Life Cycle Center. Time period: 2022-12-01 – 2023-11-29. Funded by: Vinnova, Sweden's innovation agency. Participating organizations: Partners in the Center and Government agencies and SMEs in collaboration with the Center. Jernkontoret and Swedish Forest Industries. Project outcomes: The project will be evaluated and presented after the project is being finalized in November 2023. Read more here.

Modelling of electricity in Product Environmental Footprints

**Project manager:** Tomas Ekvall, Chalmers University of Technology & TERRA.

**Time period:** 2022-10-16 - 2023-01-31.

Funded by: Swedish Energy Agency.

Participating organizations: Chalmers University of Technology, RISE Research Institutes of Sweden, TERRA.
Project outcomes: The project will be evaluated and presented after the project is being finalized in January 2023.
Read more here.

Innovation cluster for the life cycle perspective **Project managers:** Anna Wikström, Maria Rydberg & Sara Palander.

Time period: 2020-06-01 - 2025-05-31.

Funded by: Swedish Energy Agency.

**Participating organizations:** Partners in the Center and Government agencies and SMEs in collaboration with the Center.

**Project outcomes:** The project will be evaluated and presented after the project is being finalized in May 2025. Some outcomes are webinar series about the life cycle perspective for the public sector, working groups, dialogue group for government agencies, Life Cycle Talks, global network for life cycle networks & communities, network conferences, etc. **Read more here.** 

# Publications

Brandão, M., Ekvall, T., Poulikidou, S., Johansson, K., Nilsson, J., Nojpanya, P., Wikström, A., Rydberg, T. (2022). <u>RED, PEF, and EPD: Conflicting rules for determining the carbon footprint of biofuels give unclear signals to fuel producers and customers.</u> Frontiers in Climate. Ekvall, T. (2022). Recycling approaches in LCA-related international standards. SETAC Annual meeting 2022. Poster presentation.

Ekvall, T., Poulikidou, S., Brandao, M. & Rydberg, T. (2022). Impact on fuel producers and customers of conflicting rules for LCA. SETAC Annual meeting 2022. Oral presentation.

Ekvall, T. and Rydberg, T. (2022). <u>Effekter av motstridiga sys-</u> <u>tem för livscykelanalys (Executive summary)</u>. Project report: 2022:5b. Swedish Life Cycle Center.

Hedlund Åström, A., Carlsson, R., Palander, S., Rydberg, T. (2022). <u>Relay industrial supply chain sustainability data (AS-SIST)</u> Project report: 2022:8. Swedish Life Cycle Center. Lagerstedt Eidrup, M-L., Palander, S. & Peters, G. (2022). <u>Life cycle competence needs, current and future, in the Swedish industry sector.</u> Project report: 2022:6. Swedish Life Cycle Center.

Palander, S., Lorentzon, K., Hammar, T., Sanne, K., Nilsson, J., Hallberg, L., & Spak, B. (2022). <u>Lessons learned of working</u><u>with Product Environmental Footprint</u>. Project report: 2022:3. Swedish Life Cycle Center.

Palander, S., Spak B., Sanne, K., Lorentzon, K., & Hammar, T. (2022). <u>Ppt presentation: Environmental Footprint – An intro-</u> <u>duction to the initiative of the European Commission</u>. Project report: 2022:4. Swedish Life Cycle Center.

Palander, S., Rydberg, M. & Lagerstedt Eidrup, M-L. (2022) Life cycle competences to drive life cycle innovations. Life Cycle Innovation Conference 2022. Oral presentation.

Palander S., Wikström A. & Rydberg M. (2022). <u>Making an</u> <u>impact through joint efforts - values, outcomes and lessons</u> <u>learned from 25 years of collaboration.</u> Conference paper. 10th International Conference on Life Cycle Management.

Peters, G. Swedish Life Cycle Center Research Strategy – stage 10. Project report 2022:9. Swedish Life Cycle Center.

Poulikidou, S., Johansson, K., Lassesson, H., Nilsson, J., Nojpanya P., Rydberg, T., Brandão, M., Ekvall, T., Lorentzon, K., Ekman N. A., Davis, J., Nyström, I., Wikström, A. & Rydberg, M. (2022). <u>Impacts on producers and customers of conflicting rules for LCA.</u> Project report: 2022:5a. Swedish Life Cycle Center.

Poulikidou, S., Rydberg, T., Wikström, A., Ekvall, T., Nojpanya, P., Jogner, C., Ekman Nilsson, A., Davis, J., Nilsson, J., Brandão, M., Johansson, K. & Lassesson, H. (2022). Konsekvenser av motstridiga LCA-regelverk för producenter och användare av drivmedel. Transportforum 2022. Oral presentation.

Wikström, A., Palander, S. & Rydberg, M. (2022). Summary of Swedish Life Cycle Center self-assessment report stage 9, 2019-2021. Project report: 2022:7. Swedish Life Cycle Center. Wikström, A., Palander, S. & Rydberg, M. (2022). Swedish Life Cycle Center Annual report 2021. Project report: 2022:1. Swedish Life Cycle Center.

2022. Swedish Life Cycle Center Operational plan stage 10, 2022-2024. Project report: 2022:2. Swedish Life Cycle Center.

# Working groups

Academy group

- Biodiversity & LCA
- Dialogue forum for government agencies
- Environmental footprint
- Recent and current standardization in LCA

# Board 2022

Anna Hedlund Åström, Associate professor, KTH Royal Institute of Technology Cecilia Sundberg, Senior lecturer, SLU Swedish University of Agricultural Sciences Elin Eriksson, Director, Key Accounts and Assignments, IVL Swedish Environmental Research Institute Emma Rex, Researcher, RISE Research Institutes of Sweden Erik Nellström, Senior Engineer, Scania Eva Ahlner, Senior Advisor, Swedish Environmental Protection Agency Frida Røyne, LCA specialist, Polestar Performance Gianluca Brotto, Director Environment, Electrolux Gregory Peters, Professor, Scientific director Swedish Life Cycle Center (adj) Hilmar Vidarsson, Manager Group sustainable products and processes, Höganäs Jenny Köhler, Swedish Energy Agency (adj) Johanna Berlin, Technical Leader Climate Action, Volvo Cars Karin Strömberg, Vice President Strategy & Operational Excellence, Volvo Group Lars-Gunnar Lindfors, Secretary (adj) Lars Mårtensson, Chair of the Swedish Life Cycle Center Board Lena Landström, Senior Advisor Environment, Vattenfall Lionel Belzons, Innovation Product Owner for Sustainable Mobility, CEVT Marcus Linder, Director of Sustainable Business, RISE Mats Berglund, Product and Service Sustainability Performance, SKF (Vice chair) Rickard Arvidsson, Associate professor, Environmental Systems Analysis, Chalmers University of Technology Sara Palander, Director, Swedish Life Cycle Center (adj) Susan Iliefski Janols, Vice President Sustainability Products & Services, Essity Hygiene and Health

Preparatory board; Anna Björklund, KTH, Elin Einarsson Lindvall, RISE, Lars Mårtensson, Chair of the Swedish Life Cycle Center board, Lionel Belzons, CEVT, Mats Berglund, SKF and Sara Palander, Director Swedish Life Cycle Center.

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Participating in Swedish Life Cycle Center has been important for us to ensure our own relevance."

- Board member, 2022

# Activities 2022

Many of the events are arranged within the project Innovation<br/>cluster for the life cycle perspective (funded by the Swedish Energy<br/>Agency) and Swedish Life Cycle Center. A selection of events are<br/>presented below.SEPTEMBER 14: Information meeting "Become a partner in<br/>Swedish Life Cycle Center".SEPTEMBER 12: Working group meeting with Academy group.

JANUARY 31: Working group meeting with Academy group.

**MARCH 22:** Working group meeting for government agencies.

**APRIL 5-6:** Two-day course in Applied Life Cycle Thinking, organized by Swedish Life Cycle Center through a close collaboration with IVL and Greendesk.

**APRIL 17:** Participation and oral presentation at SETAC Annual meeting 2022.

**APRIL 21:** Webinar "Life cycle competence needs, current and future, in the Swedish industry sector" with Marie-Louise Lagerstedt Eidrup, Project manager at Swedish Life Cycle Center and Chalmers industriteknik.

**APRIL 26:** Webinar "Willingness to pay for Circular Economy Offers" with Agnieszka Hunka and Shiva Habibi, RISE Research Institutes of Sweden.

MAY 3: Webinar "Re-manufacturing and circularity in the automotive industry" with Tom Engblom, Volvo Cars Service Business, Erik Sundin, Linköping University, Mats Zackrisson, RISE, Brenda Nansubuga, Peter Lundin, Swerim and Christian Jonasson, RISE.

**MAY 10:** Expert group meeting with Product Environmental Footprint (PEF) group.

**MAY 17:** Conference participation and oral presentation at SETAC Annual meeting 2022.

MAY 31: Working group meeting with Academy group.

**JUNE 16:** Life Cycle Talks - How green is your business? with Henrikke Baumann, Chalmers.

JUNE 29: Conference participation and oral presentation at LCIC 2022, Berlin, Germany.

**SEPTEMBER 8:** Webinar "Nordic Climate Forum for Construction 2022", online and Oslo, Norway.

**SEPTEMBER 12-13:** Research Strategy outreach presentations at SLU and KTH.

**SEPTEMBER 14:** Life Cycle Talks - How can we reach a sustainable consumption? with Göran Finnveden, KTH.

**SEPTEMBER 27:** Webinar ISO 14040 and 14044, featuring allocation in Amendment 2 of ISO 14044 with Tomas Ekvall, Chalmers.

**OCTOBER 7:** Research Strategy outreach presentations at Chalmers.

**OCTOBER 18:** Life Cycle Talks - How can social life cycle assessment address social sustainability? with Mathias Lindkvist, KTH.

**OCTOBER 25:** Working group meeting for "Recent and current standardization in LCA" about Environmental Normalization, weighting and interpretation & monetary valuation with Bengt Steen, Chalmers.

**NOVEMBER 14-15:** Two-day course in Applied Life Cycle Thinking, organized by Swedish Life Cycle Center through a close collaboration with IVL and Greendesk.

NOVEMBER 22: Working group meeting: Biodiversity & LCA.

**NOVEMBER 23:** Working group meeting for government agencies.

**NOVEMBER 24:** Network conference "Let's meet & talk! About Life Cycle Thinking in policy and legislation", Stockholm.

**NOVEMBER 29:** Seminar "Forum for Life Cycle Networks and Communities".

**NOVEMBER 30:** Webinar "Introduktion till livscykelperspektivet" with Kristian Jelse, Greendesk and Marcus Wendin, Miljögiraff.

**DECEMBER 1:** Working group meeting for "Recent and current standardization in LCA" about Environmental labels and declarations with Ellen Riise, Essity and Sven-Olof Ryding, IVL.

**DECEMBER 2:** Expert group meeting with Product Environmental Footprint (PEF) group.

**DECEMBER 6:** Webinar "Livscykelperspektivet vid upphandling" with Joakim Thornéus, The National Agency for Public Procurement and Björn Magnusson, University of Gothenburg.

**DECEMBER 14:** Life Cycle Talks - How to assess the environmental performance of emerging technologies? with Matty Janssen, Chalmers University of Technology.

#### A neutral platform

The partners of Swedish Life Cycle Center is the foundation. Partners contribute to activities, start cross-sector research projects, hold a seat in the Board and form the agenda of the Center. Contact us if you are curious about partnership!

The Center is financed jointly by partners and Chalmers University of Technology (host for the Center). From June 2020 Swedish Life Cycle Center is managing the project Innovation cluster for the life cycle perspective, funded by the Swedish Energy Agency and Swedish Life Cycle Center partners.

#### Contact



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#### In collaboration with

The Center hosts a dialogue group with nine government agencies in Sweden, engages small and medium sized companies through a letter of collaboration and enters into collaborative partnerships with other life cycle organizations at a global level.

#### Swedish Life Cycle Center

Chalmers University of Technology. Text and layout by Swedish Life Cycle Center's Technical secretariat.

#### Partners 2022