

Swedish Life Cycle Center

Annual report 2015

Swedish Life Cycle Center report no. 2016:1

Welcome to the 2015 annual report

2015 was the last year of stage 7, a year characterized by networking activities among Swedish Life Cycle Center partner organizations and by international impact. This 2015 annual report will give an overview of Swedish Life Cycle Center and its contribution to the vision of credible and applied life cycle thinking globally.

The Board and the Technical Secretariat would like to thank all partners and participants who have been actively involved in the Swedish Life Cycle Center during 2015 and the formation of stage 8 (2016-2018). We look forward to continued cooperation in 2016.

Best regards
Sara Palander, Director Swedish Life Cycle Center

About Swedish Life Cycle Center

Swedish Life Cycle Center is a center of excellence for the advance of applied life cycle thinking in industry, policy and other parts of society. The center was founded in 1996 and is a joint collaboration platform for universities, industries, research institutes and government agencies for competence building and exchange of experience to move the life cycle field forward.

Partners in 2015: ABB, AkzoNobel, Chalmers University of Technology (host of the Center), IVL Swedish Environmental Research Institute, KTH Royal Institute of Technology, NCC Construction, SCA, SKF, SLU Swedish University of Agricultural Sciences – Department of Energy and Technology and Department of Biosystems and Technology, SP Technical Research Institute of Sweden, Swedish Environmental Protection Agency, Vattenfall, Volvo Car Group and Volvo Group.

Our values and principles, on which we build our work on, are:
Transparency, openness, credibility, science and cross-sectorial solutions.



Swedish Life Cycle Center

2015 in numbers

- 14 partners
- 330 professionals in network
- 3 research projects
- 2 administration projects
- 5 workings groups: LCA Data & Methodology, Economic valuation, LCA Biodiversity & Land use, Social LCA, LCA certifications
- 2 expert groups: Environmental footprint, Data strategy
- 158 people involved in working groups and expert groups
- 24 working and expert group meetings
- 13 seminars, workshops and webinars
- 2 network conferences
- 7 center publications
- 11 newsletters

Become a partner?

If your organization or you are interested to take part in the center or contribute in our activities, you are welcome to contact the Swedish Life Cycle Center Technical secretariat.

Contact and more information

lifecyclecenter@chalmers.se | www.lifecyclecenter.se

OUR CONTRIBUTION TO SUSTAINABLE DEVELOPMENT - some examples

Open and accessible life cycle data

The Global LCA Data Access Network (GLAD), earlier communicated as Global LCAccess, has the overall aim to build up an international system to make LCA data accessible. In 2015, Swedish Life Cycle Center was asked by United Nations Environment Programme (UNEP) to start up a partnership with UNEP to coordinate a startup process to see in which direction this initiative should continue. This work will be managed mainly in 2016 through Johan Tivander (Chalmers University of Technology), Christoffer Krewer (SP Technical Research Institute of Sweden), Raul Carlson (earlier involved in the center) and Sara Palander (Swedish Life Cycle Center) together with the international working groups. Llorenç Mila I Canals is project manager for the overall process and Sven-Olof Ryding (Swedish EPA) represents Sweden in the Steering Committee.

Contribution to the European Environmental Footprint process

The Environmental Footprint process aims to develop a harmonized methodology for the calculation of the environmental footprint of products, services and organizations based on transparent methodologies.

Swedish Life Cycle Center has since 2014 hosted a national expert group supporting the European process through the Swedish representatives in the Environmental Footprint Steering Committee (Cecilia Mattsson, Swedish EPA) and Technical Advisory Board (Elin Eriksson, IVL

Swedish Environmental Research Institute). During fall 2015, Elin Eriksson (IVL) and Bengt Steen (Chalmers University of Technology) gave a presentation during a European workshop in Brussels regarding Swedish positions on weighting in Environmental Footprints.

Monetization of greenhouse gases - considerable variations

In the research project “Development of method and application for monetarisation”, managed by Göran Finnveden at KTH Royal Institute of Technology and funded by the Swedish Energy Agency, the variation of environmental and social costs were shown. Case studies were performed by ABB and Volvo Group, where the environmental costs of their emissions contributing to climate change were calculated and compared to their financial results. The monetary value of the carbon dioxide emissions was compared with the earnings i.e. EBITDA (Earnings before interest, taxes, depreciation and amortization). The results from the case studies show that depending on the methodology and estimate used, the cost for emissions spans from non-significant to highly significant. The results indicate that monetarization of carbon dioxide emissions may have significant impacts on the long-term performance of the company.

Life cycle thinking is a way of working for value chains beyond the act of single companies

“Effects vary greatly with value chain, context and type of measure, but the potential for energy efficiency is big. As

an example, energy savings may tenfold with measures in value chains compared to in-house ones, while measures having an impact on energy in the use phase can lead to savings of a factor 100 or more.” This short text illustrates the potential of working with life cycle thinking and also the importance of cross-actor arenas to discuss and develop governance of value chains beyond the act of single companies. The research project “Energy efficiency along the value chain” resulted in new recommendations of strategies for companies to overcome barriers and find new strategic ways to manage actions for life cycle energy efficiency.

The project is a collaboration project between SP Technical Research Institute of Sweden, Chalmers University of Technology, Volvo Real Estate, AkzoNobel, ABB. KTH Royal Institute of Technology and IVL Swedish Environmental Research Institute have been involved in a reference group. The project has been funded by the Swedish Energy Agency and managed by Emma Rex, SP Technical Research Institute of Sweden.



Swedish Life Cycle Center exhibition booth at the 7th International Conference on Life Cycle Management (LCM 2017) in Bordeaux.

Board members and deputy board members

Chair:	Elisabet Olofsson	SCA:	Susan Iliefski Janols, Ellen Rise
Secretary:	Lars-Gunnar Lindfors (adjunct)	SKF:	Stefano Marzola, Matilda Spöln
Director:	Sara Palander (adjunct)	SLU:	Serina Ahlgren, Johanna Spångberg
ABB:	Lennart Swanström, Linnea Petersson	Swedish EPA:	Emelie Aurell, Eva Ahner
AkzoNobel:	Klas Hallberg, Karin Sanne	SP:	Katarina Lorentzon, Johanna Berlin
Chalmers:	Henrikke Bauman, Rickard Söderberg	Vattenfall:	Mikael Eldhagen, Sara Nilsson
ML:	Elin Eriksson, Lars-Gunnar Lindfors	Volvo Cars:	Axel Edh, Birgitta Kinton Kåmark
KTH:	Anna Björklund, Björn Frostell	Volvo Group:	Carin Ström, Lisbeth Dahlöf
NCC:	Larissa Strömberg, Amanda Harlen		

New version of the Environmental Priority Strategy system (EPS)

The new version of the Environmental Priority Strategy system (EPS) was released in 2015 and has been developed within the research project "Integration of environment and economy in product development - opportunity for innovation", financed by VINNOVA Sweden's innovation agency. Environmental Priority Strategies (EPS) index will from 2016 be available in the LCA softwares SimaPro and GaBi. EPS is a system for decision support which determines the environmental damage costs for processes and materials.

The project is a collaboration between AkzoNobel, Chalmers University of Technology, IVL Swedish Environmental Research Institute, SCA and Volvo Group. The project is managed by Bengt Steen, Chalmers, and Maria Lindblad, IVL, and will continue in 2016. EPS will from 2016 be managed and supported by IVL Swedish Environmental Research Institute.

New work item proposal on Monetary valuation

With a long history and extensive expertises, researchers and professionals active in Swedish Life Cycle Center and SIS Environment Management Project have initiated a working process to develop a new ISO standard on monetary valuation of environmental impacts from specific emissions and natural resources. The overall aim is to together develop a common language and an international guideline in this field. Preparatory meeting

have been arranged by Swedish Life Cycle Center and SIS to investigate the interest for an ISO standard. This work resulted in a New Work Item Proposal and later an international working group where SIS is running the Technical secretariat.

A kickoff meeting for the international working group will be organized in February 2016 in Gothenburg and the process towards the new ISO 14008 standard will then start. A Swedish working group is coordinated by SIS and Swedish Life Cycle Center has a mirror group to follow and influence this process.

Life cycle thinking - on the national programme on sustainable consumption and production

United Nations decided on a ten year framework program to achieve goals for sustainable consumption and production patterns (10YFP-SCP). The 10YFP-SCP is an international cooperation to accelerate the shift towards sustainable production and consumption in both developed and developing countries. The Swedish Environmental Protection Agency (Swedish EPA) was commissioned by the Ministry of Environment as a national focal point for 10YFP and will lead the work to inspire to action by emphasizing and highlighting good examples that encourage greater exchange of knowledge.

Swedish Life Cycle Center was involved in the National workshop for sustainable lifestyles in 2015, organized by Swedish EPA, through a work station with the topic "How

life cycle thinking can make the decision easier for a consumer". The workshop highlighted life cycle thinking as a natural part to reach sustainable lifestyles.

A meeting place to share and create best practice

Swedish Life Cycle Center has during 2015 arranged two network conferences.

In February, Swedish Life Cycle Center held a conference in Gothenburg focused on economic valuation. Results were presented by Stefan Åström (IVL Swedish Environmental Research Institute) and Lina Isacs (KTH Royal Institute of Technology) from the two research projects within this topic, "Integration of environment and economy in product development - opportunity for innovation" and "Development of method and application for monetarisation". Mark Goedkoop, CEO at PRé Sustainability, was invited to report from a business led conversation on Natural Capital.

In September, the conference was held in Stockholm with a focus on Social life cycle assessment. This conference opened up for group discussions around questions prepared by members in the Swedish Life Cycle Center working group on Social LCA. Bernard Mazijn, invited speaker from Social Life Cycle Alliance (Global LC Alliance), gave an introduction to Social LCA and the Guidelines for Social Life Cycle Assessment of Products.

Partners



Networking activities

Network conference: Economic valuation of social and environmental impact. Gothenburg, February 5.

Seminar: Resurseffektivitet – vägen till ett konkurrenskraftigt företag. Presentations by Mats Rosenquist, Volvo Group Trucks Technology, Susan Iliefski-Janols, SCA and Caroline Ankarcrona, IVA. Gothenburg, February 18.

Webinar: LCA & Electrification of vehicles. Presentations by Anders Nordelöf, Chalmers University of Technology, Sofia Poulidikou, KTH Royal Institute of Technology, Jessica Andreasson and Andreas Andersson, Volvo Car Group. March 5.

Seminar: Monetary valuation of carbon dioxide and resources at Swedish Energy Agency. Speakers were Lina Isacs, KTH Royal Institute of Technology, and Linnea Petersson, ABB. Eskilstuna, March 11.

Webinar: LCA including chemicals – methods and practice. Given by Sandra Roos, Chalmers University of Technology. April 14.

Webinar: The Biotope Method. Given by Thomas Olsson, Vattenfall. June 16.

Webinar: Future Proofing Business & Finance – Valuing Natural Capital. Guest speaker Dorothy Maxwell, Founder and Director at the Sustainable Business Group. June 24.

Network conference: Social Life Cycle Assessment. Stockholm, September 14.

Webinar: ABB Group Sustainability Objectives – development and implementation. Given by Lennart Swanström, ABB. September 21.

Webinar: Developing the Social Capital Protocol. Guest speaker Kitrhona Cerri, WBCSD. October 12.

Workshop: Enablers of life cycle energy approaches in large companies. October 21.

Webinar: Shaping the circle. Given by Juana Camacho Otero, Chalmers University of Technology. November 11.

Webinar: OpenLCA. Guest speaker Andreas Ciroth, GreenDelta. November 23.

Research projects

Development of method and application within monetisation. Project manager Göran Finnveden, KTH Royal Institute of Technology. Funded by the Swedish Energy Agency.

Integration of environment and economy in product development - opportunity for innovation. Project managers Bengt Steen, Chalmers University of Technology, and Maria Lindblad, IVL Swedish Environmental Research Institute. Funded by VINNOVA Sweden's innovation agency.

Adapted decision support for increased energy efficiency in value chains. Project manager Emma Rex, SP Technical Research Institute of Sweden. Funded by the Swedish Energy Agency.

Good examples – inspiration to energy efficiency through the entire value chain. Project manager Anna Wikström, Swedish Life Cycle Center. Funded by the Swedish Energy Agency.

National strategy for development of energy production related environmental data for sustainable innovation – A national research and innovation agenda. Project managers Sara Palander and Carl Karheiding, Swedish Life Cycle Center. Funded by the Swedish Energy Agency.

List of center publications

2015:1 Identifying the total costs and benefits of products - Should business monetize environmental and social impacts? (Stefan Åström and Haben Tekie, ML Swedish Environmental Research Institute)

2015:2 Swedish Life Cycle Center Annual report 2014 (Sara Palander and Anna Wikström, Swedish Life Cycle Center Technical secretariat)

2015:3 Monetisation of emissions of greenhouse gases emissions and use of abiotic resources - A summary of the research project and Q&A (Lina Isacs, Cecilia Håkansson, Göran Finnveden, KTH Royal Institute of Technology, Bengt Steen, Chalmers University of Technology, Tomas Rydberg, Haben Tekie, ML Swedish Environmental Research Institute, Anna Widerberg, SP Technical Research Institute of Technology, Sara Palander, Anna Wikström, Swedish Life Cycle Center Technical secretariat, Lisbeth Dahlöf, Volvo Group, Lennart Swanström, ABB)

2015:4a EPS 2015d:1 including climate impacts from secondary particles.xls (Bengt Steen, Chalmers University of Technology)

2015:4b EPS 2015d:1 excluding climate impacts from secondary particles.xls (Bengt Steen, Chalmers University of Technology)

2015:5 The EPS 2015d impact assessment method – an overview (Bengt Steen, Chalmers University of Technology)

2015:6 Energy efficiency along the value chain (Emma Rex, Birgit Brunklaus, Katarina Lorentzon, SP Technical Research Institute of Technology)