

85th LCA Discussion Forum

Electricity in buildings LCA: State of the art, challenges and ways ahead

Thursday 9 November 2023, ETH Zentrum campus, Alumni Pavillon and online

We cordially invite you to the **85th Discussion Forum on Life Cycle Assessment**
The official language of this event is English

With buildings, electricity consumption in construction, product manufacture and in the use phase is an important contributor to their environmental impacts. The forum will address electricity mix modelling issues in LCAs of buildings.

Several different models to represent the electricity consumed during the use phase of buildings are applied in European countries: (1) the current national electricity consumer mix according to national statistics; (2) the electricity mix of the supplier, based on guarantees of origin (GO), (3) a (quasi dynamic) future electricity mix based on a national official energy scenario, (4) an individual electricity mix which covers the use profile of the building under assessment.

Companies in the supply chain of construction products purchase “green” electricity products to lower the environmental footprint of their products. These green electricity products are often based on GO or similar certification schemes. Physical production of electricity and electricity quality (GO) are then traded independently on different markets. This feature is a challenge for process based LCA.

The forum will discuss the following questions:

- What is the current state of electricity mix modelling for construction products and buildings’ use phases?
- How do different modelling approaches reflect and/or influence the transition of the electricity sector of a country to renewables?
- Which electricity mix modelling approach(es) should be offered in LCA databases?

Breakout groups will allow for in depth discussions and identifying areas of consensus.

We look forward to meeting you in Zürich



Rolf Frischknecht
treeze Ltd.

Programme (as of 5 October 2023)

	Time	Thursday, 9 November 2023	Speaker [Chair]
	8:30	Registration, Coffee, Tea and Croissants	
A		Setting the scene	[Rolf Frischknecht, treeze]
01	09:00	Welcome and introduction	Rolf Frischknecht, treeze
02	09:10	The Swiss energy perspectives 2050+ and their correspondence in national and cantonal laws	Andreas Eckmanns, BFE, Bern
03	09:30	The market of Guarantees of Origin in Switzerland and Europe: strengths and weaknesses	Lukas Groebke, Pronovo
04	09:50	Electricity procurement and its consumption in buildings – a utility's perspective	Gerhard Emch, ewz
	10:10	Discussion	
	10:30	Coffee & Tea break	
B		Electricity mix modelling in European buildings LCA	
05	11:00	The French electricity model for buildings LCA: characteristics and effects	Bruno Peuportier, Armines, France
06 *	11:20	The Danish electricity model for buildings LCA: characteristics and effects	Maria Balouktsi, Aalborg University, Denmark
07 (*)	11:40	The Norwegian electricity model for buildings LCA: characteristics and effects	Rolf André Bohne, NTNU, Norway
08	12:00	Discussion	
	12:15	Lunch	
C		Short presentations	
09-1	13:25	Methodological aspects of calculating a national grid emission factor	Malte Schäfer TU Braunschweig
09-2 * (§)	13:35	Marginal emissions factors for grid electricity use in consequential LCA studies for building energy systems	Matt Roberts, Berkeley University
D		Electricity mix modelling in Swiss buildings LCA	
10	13:45	The KBOB electricity model for buildings LCA: characteristics and effects	Rolf Frischknecht, treeze Ltd.
11	14:00	The University of Geneva electricity model for buildings LCA: characteristics and effects	Elliot Romano, Geneva University
12	14:15	The "EcoDynElec" electricity model for buildings LCA: characteristics and effects?	Sébastien Lasvaux, HEIG-VD
13	14:30	Harmonising the electricity model for buildings in Switzerland: results from the Swiss "Net zero whole life carbon buildings" project	Martin Jakob, TEP Energy, Switzerland
	14:50	Discussion	
	15:15	Coffee & Tea break	
E		Electricity mixes suitable for buildings LCA	
14	15:45	Discussion in breakout groups: 1. Modelling of electricity mixes based on physical production or quality (Rolf Frischknecht) 2. Static or dynamic modelling of use phase electricity consumption of buildings (NN) 3. Attributional or consequential modelling of electricity mixes or: Modelling in situ PV production and self-consumption (Martin Jakob)	
15	16:30	Reporting back to plenary and discussion	
16	17:00	Synthesis, Announcements and Farewell	Rolf Frischknecht
	17:15	End of 85th LCA Forum	

* online presentation; § pre-recorded presentation

