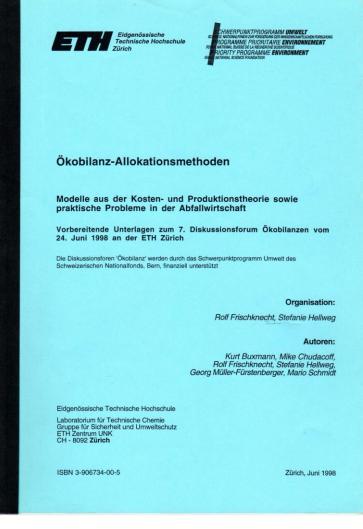


Life Cycle Thinking = Lower Environmental Footprint?

Rolf Frischknecht treeze Ltd.

78th Jubilee LCA forum ETH, Zurich, 13 September 2021





"Humanity should switch from using the solar capital (such as coal) to using the natural movements caused by solar radiation"





Prof. Rudolf Clausius (1822-1888)
Restated the two laws of thermodynamics

Professor at ETH Zürich

Clausius Talks @ ETHZ 1990 to 1994





Exponential growth in the past:

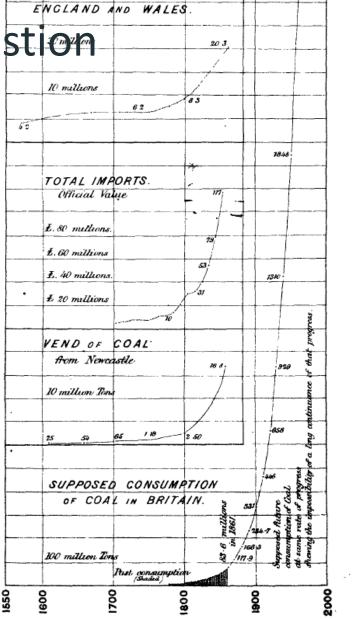
The Coal question

The Coal question

The coal question**

**The Coal questio



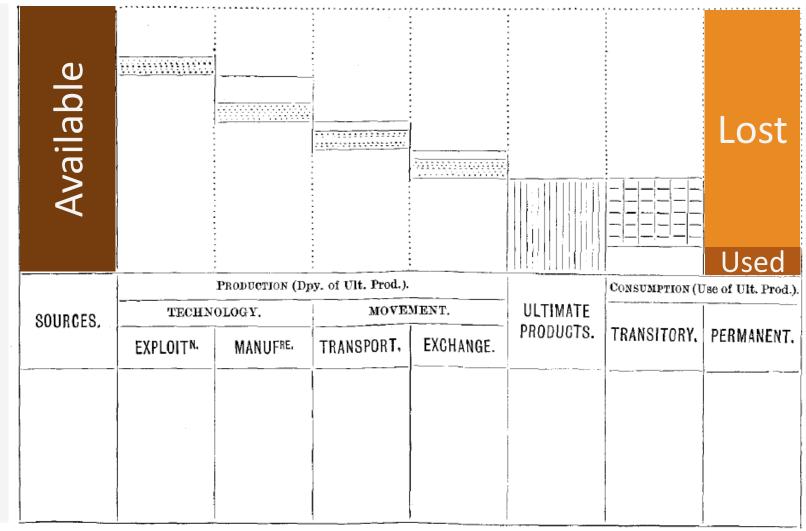


Chy Son & Topler Belle Broad 5 Bill

Source: Jevons (1865)

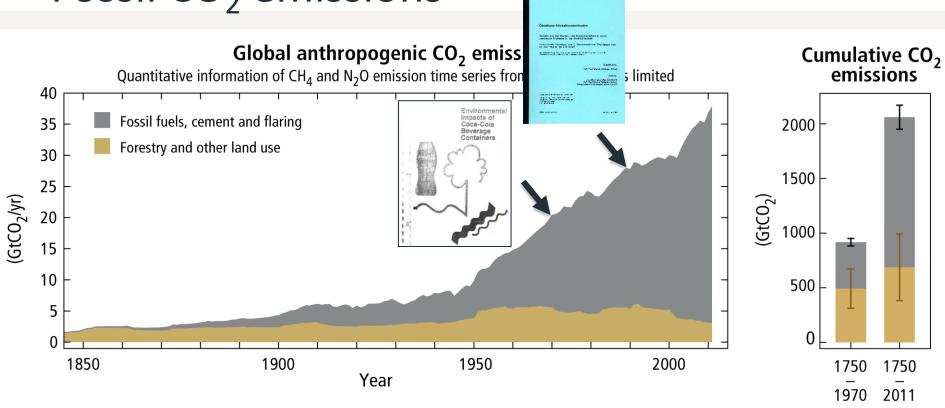
First life cycle considerations Poor efficiency in coal supply chain





Rapid growth today Fossil CO₂ emissions





THE PARTY

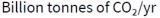
180 years (1750-1970): 5 GtCO₂ per year 40 years (1971-2011): 30 GtCO₂ per year

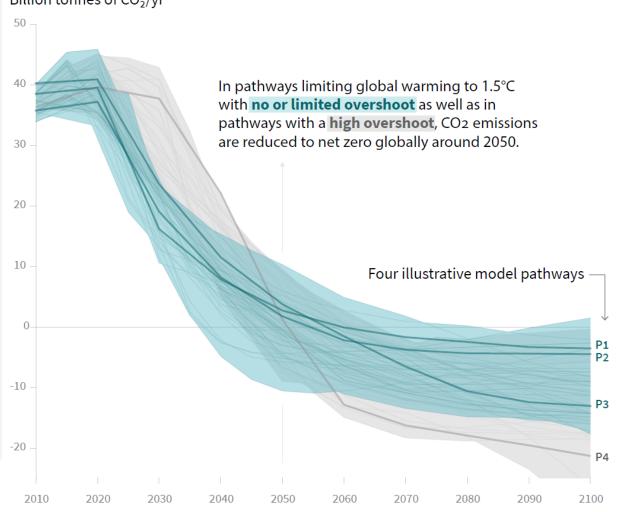
Source: IPCC (2013)

IPCC Global warming of 1.5°C

fair life cycle thinking

Global total net CO2 emissions

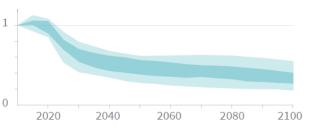




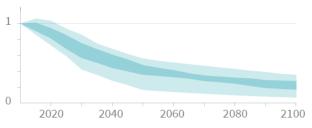
Non-CO₂ emissions relative to 2010

Emissions of non-CO₂ forcers are also reduced or limited in pathways limiting global warming to 1.5°C with no or limited overshoot, but they do not reach zero globally.

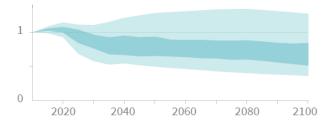
Methane emissions



Black carbon emissions



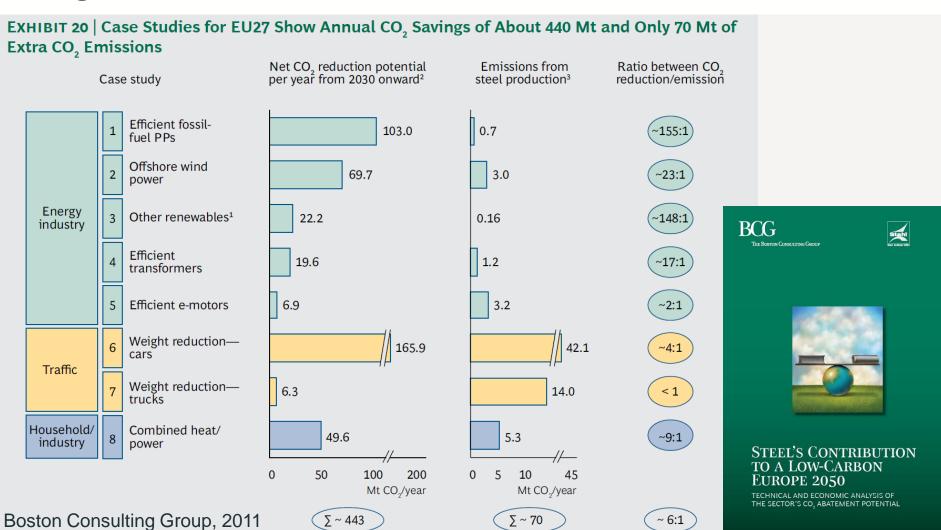
Nitrous oxide emissions



Life cycle thinking study results:



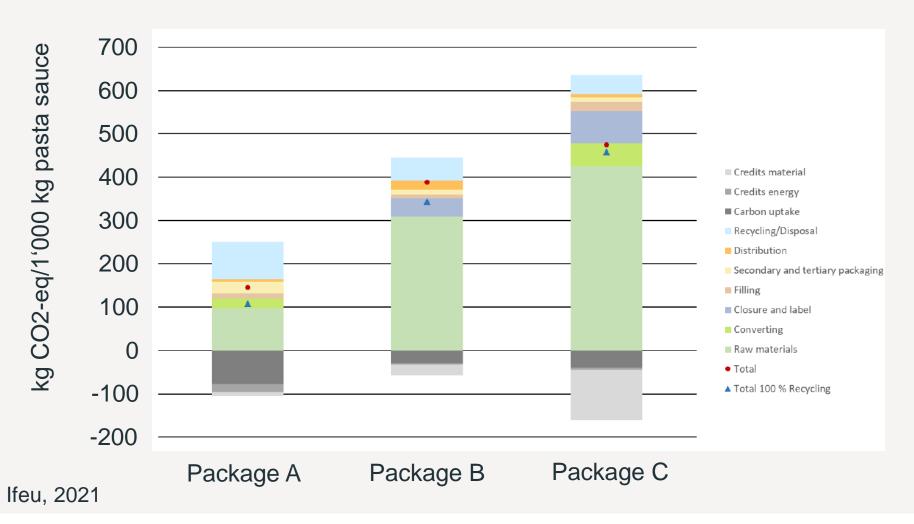
Light towers or Castles in the air?



Life cycle thinking study results:



Light towers or Tealights



The role and effect of LCA



- How much does LCA really help in reducing pressure on the environment?
- Which important decisions were based on life cycle thinking and analysis?
- How can LCA become more effective for big and relevant issues?

 Does society need LCA to guide it towards a life within planetary boundaries?

The Jubilee event Monday 13 September 2021



Morning

Keynote speeches:
 The environmental stage, the economic drama, and the playwrite

Afternoon

- The role of LCA towards lifestyles within planetary boundaries
- Lessons learned from applying LCA in industrial and public policies

Evening (on site only)

- Get together Amboss Rampe
- Guided city tours

The Jubilee event Tuesday 14 September 2021



Morning

- Successful sectorial LCA applications
- A look into the future: LCA in 2030

Afternoon

Workshops and World Café on LCA in 2030

House keeping Covid safety measures @ETHZ



- Wear mask all time including
 - when seated
 - during queuing in coffee breaks and lunch
- Smile

A big "thank you" to ...



- City of Zürich and Canton of Zürich:
 Sponsors of the Apéro
- ETH Zürich:Offering the venue
- Sponsors of the LCA forum series







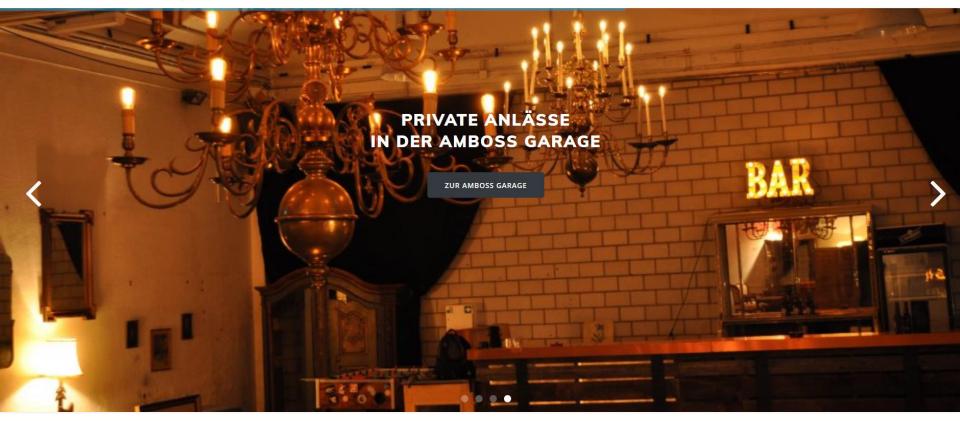


Amboss Rampe



Zollstrasse 80, 8005 Zürich





LCA Forum



Program 2022

- 80: 9 June 2022, ETH Zürich Biogenic carbon and climate change mitigation: silver bullet or flash in the pan?
- 81: 15 September 2022, Wädenswil
 Changing the service economy: How to harmonize and compare LCA in the service industry
- 82: 4 November 2022, ETH Zürich
 Addressing the issue of plastic pollution: status quo and the way forward