



sinum
DF77: Quality challenges in LCA tools
– a practical perspective

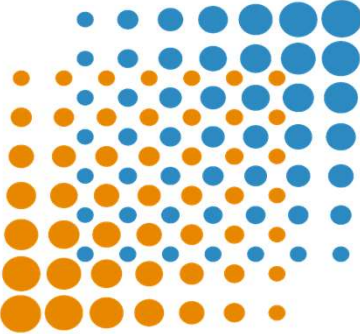
21st April 2021

- ➔ Introduction
 - sinum - Corporate Ecoperformance

- ➔ Challenges “Behind the scenes” – REGIS
 - Features
 - LCI data
 - LCIA methods

- ➔ Challenges “Foreground” – User view
 - Modelling
 - Data collection
 - Results

- ➔ “Learnings”



softwareunterstützte **I**nstrumente für ein **u**mweltbewusstes **M**anagement
(software-supported tools for environmentally conscious management)



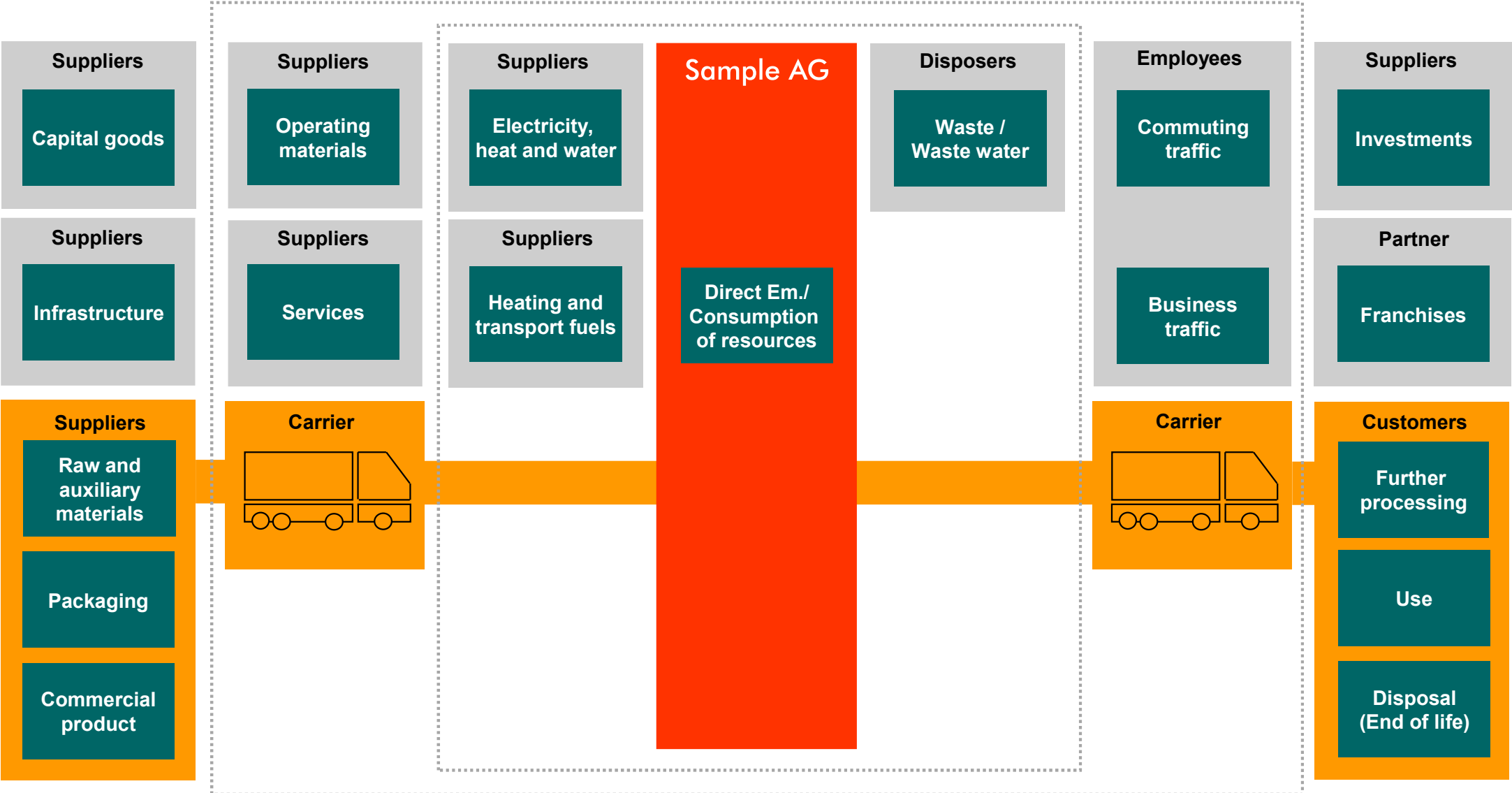
Since its launch in 1993, REGIS has enabled companies to analyse and control their Corporate EcoPerformance. With the REGIS version includingecoinvent 3, users can perform LCAs - with a special focus on company LCAs - with regionalised LCI/LCIA. The GHG protocol and the ECOPRO methodology are of course supported in REGIS.



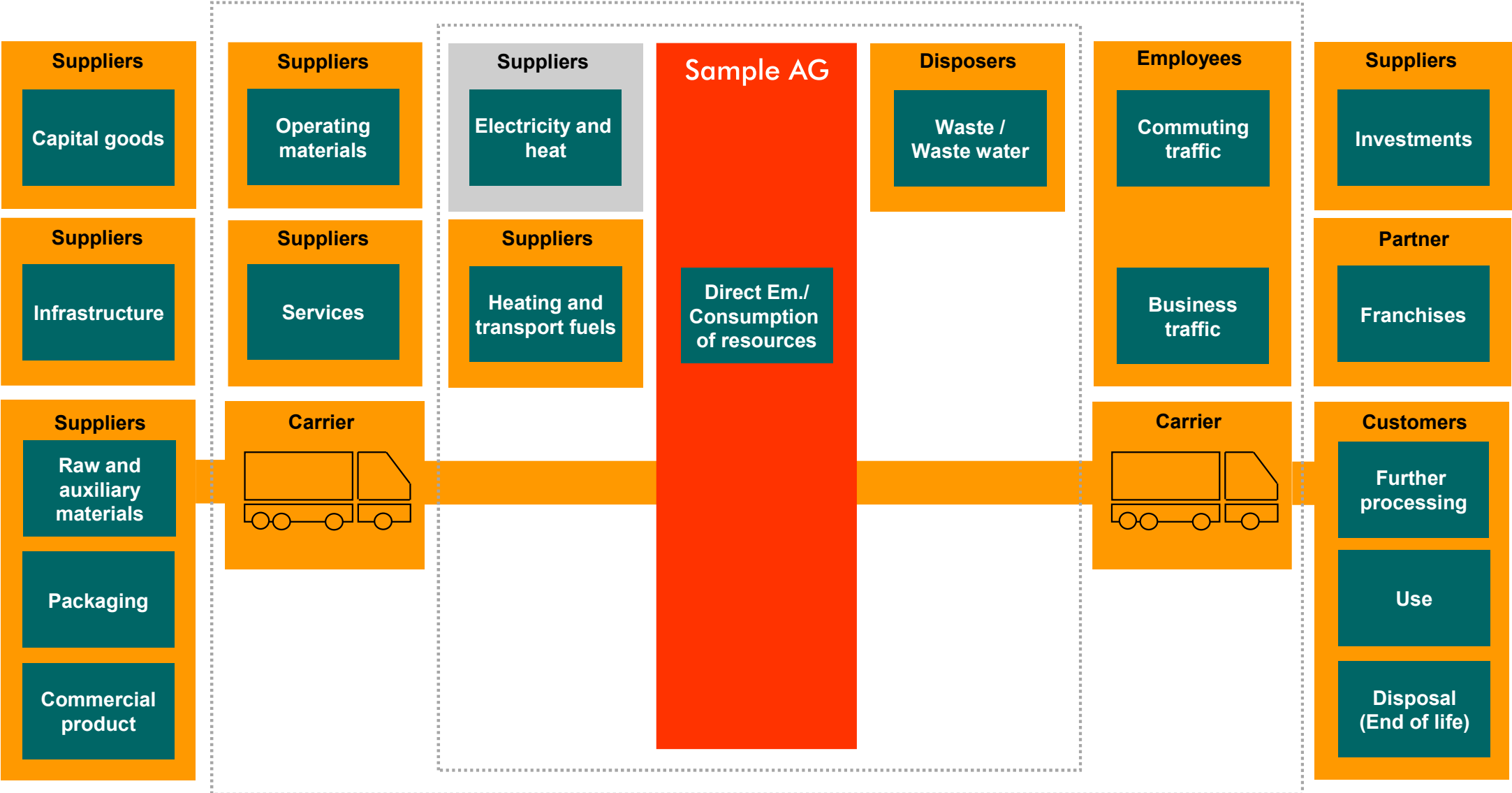
Introduction - Quality challenges in LCA tools



ECOPRO – Corporate Ecoperformance

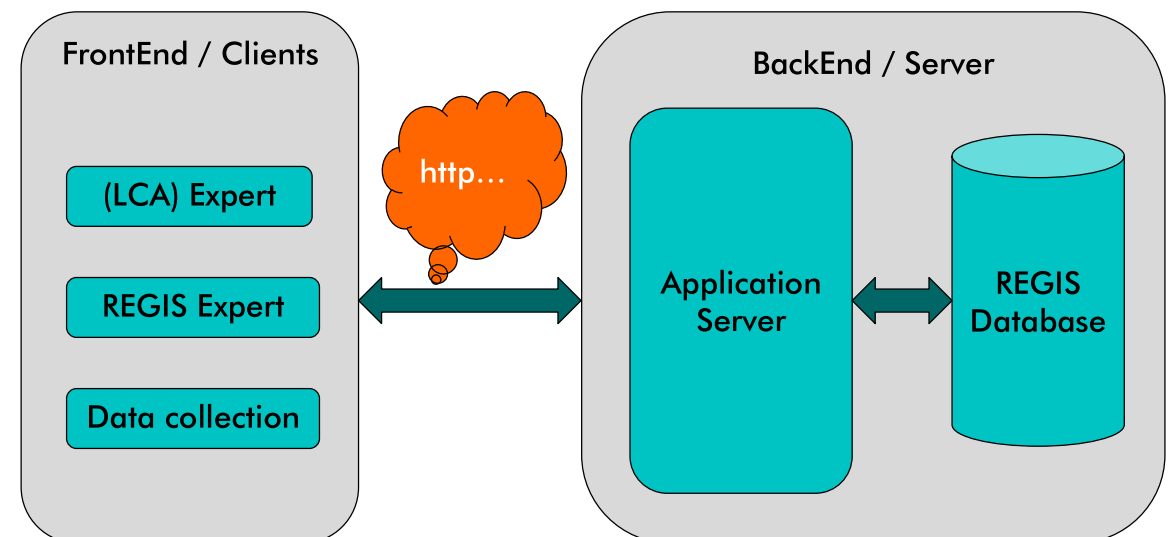


GHG Protocol – Scope 1, 2 and 3



REGIS – Features

- ➔ Standardised reporting according to ECOPRO or GHG protocol
- ➔ Regionalised LCI/LCIA calculation
- ➔ Electricity calculator
- ➔ Timeline e.g. track year-on-year changes
- ➔ Parameterised data collection
- ➔ Client specific master data





REGIS – Update/new Version

➔ Master data

- New, deleted or duplicate entries of EEX
- New geographies (see also LCIA)
- Client specific master data affected

➔ LCI data

- REGIS specific adjustments (e.g. EEX noise on all transport UPRs)
- Relevant for existing corporate models?

➔ LCIA data

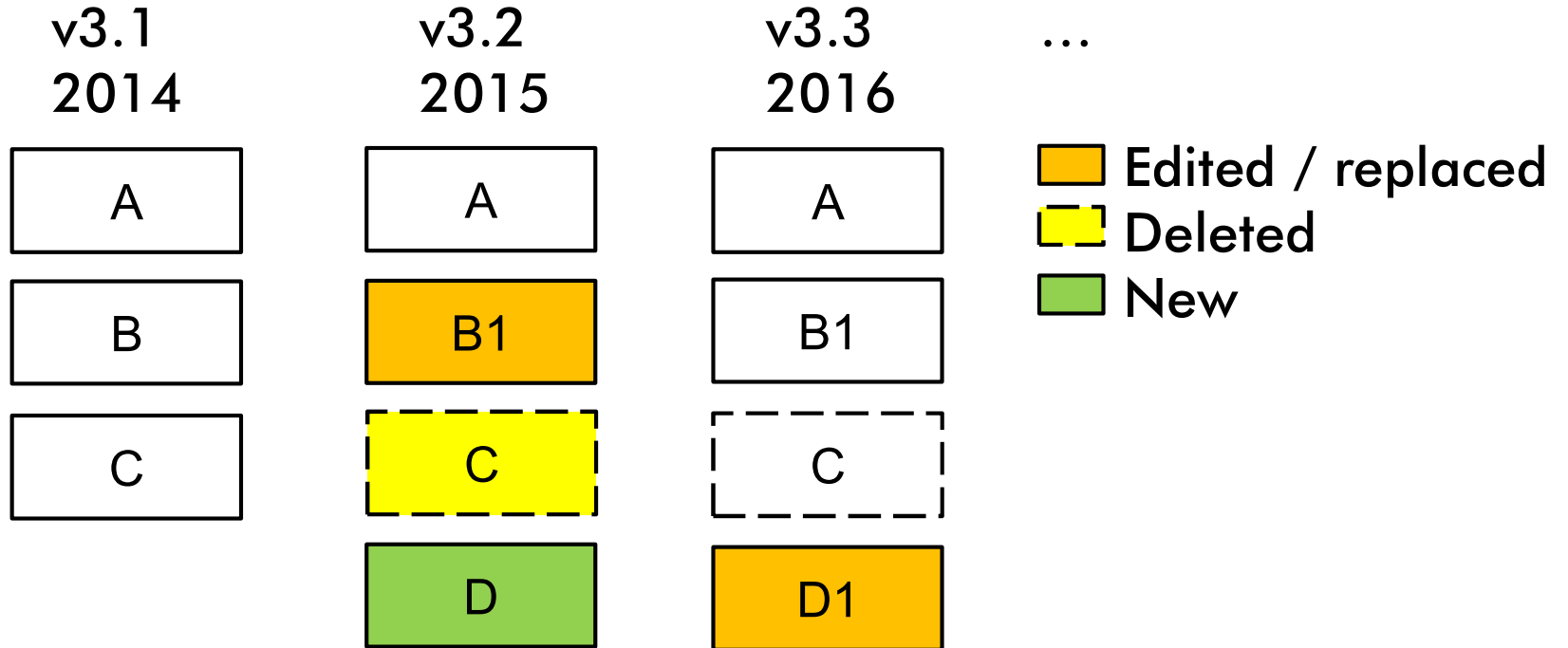
- New master data?

➔ Overall quality checks

- LCI/LCIA result new vs. previous version (REGIS, Client)

LCI data – Update/new Version

ecoinvent
Company



- Version control on UPR-level
- Status of datasets over time
- Dataset with changed status: Is it used in a corporate model or not?

The International Journal of Life Cycle Assessment (2019) 24:364–369
<https://doi.org/10.1007/s11367-018-1559-0>

CONFERENCE REPORT: 69TH DISCUSSION FORUM ON LCA



Regionalization in LCA: current status in concepts, software and databases—69th LCA forum, Swiss Federal Institute of Technology, Zurich, 13 September, 2018

Rolf Frischknecht¹ • Stephan Pfister² • Jonas Bunsen³ • Adrian Haas² • Josef Känzig⁴ • Martin Kilga⁵ • Jens Lansche⁶ • Manuele Margni⁷ • Christopher Mutel⁸ • Jürgen Reinhard⁹ • Philippe Stolz¹ • Rosalie van Zelm¹⁰ • Marisa Vieira¹¹ • Gregor Wernet¹²

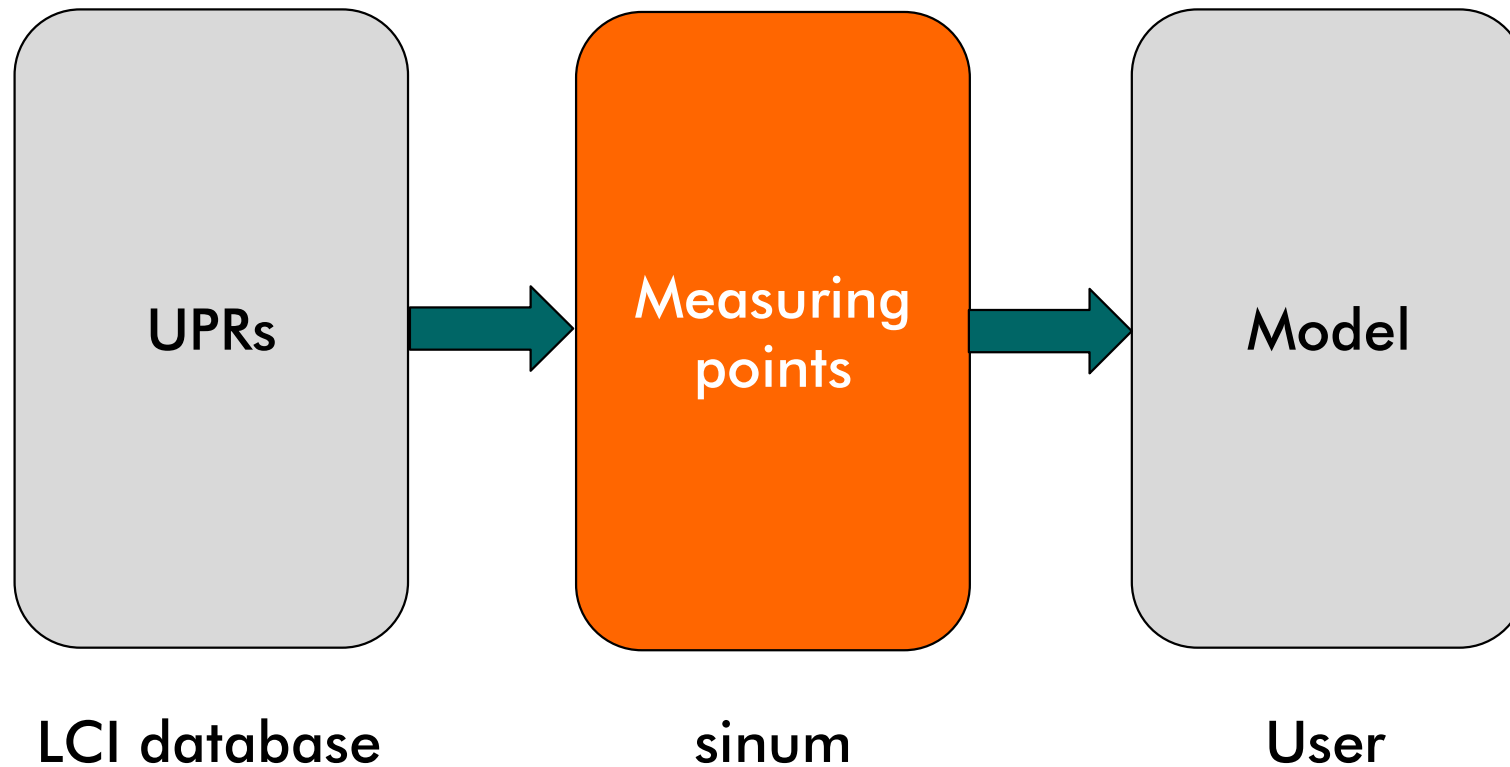
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1 Introduction and overview

The 69th LCA forum was opened with a welcome address

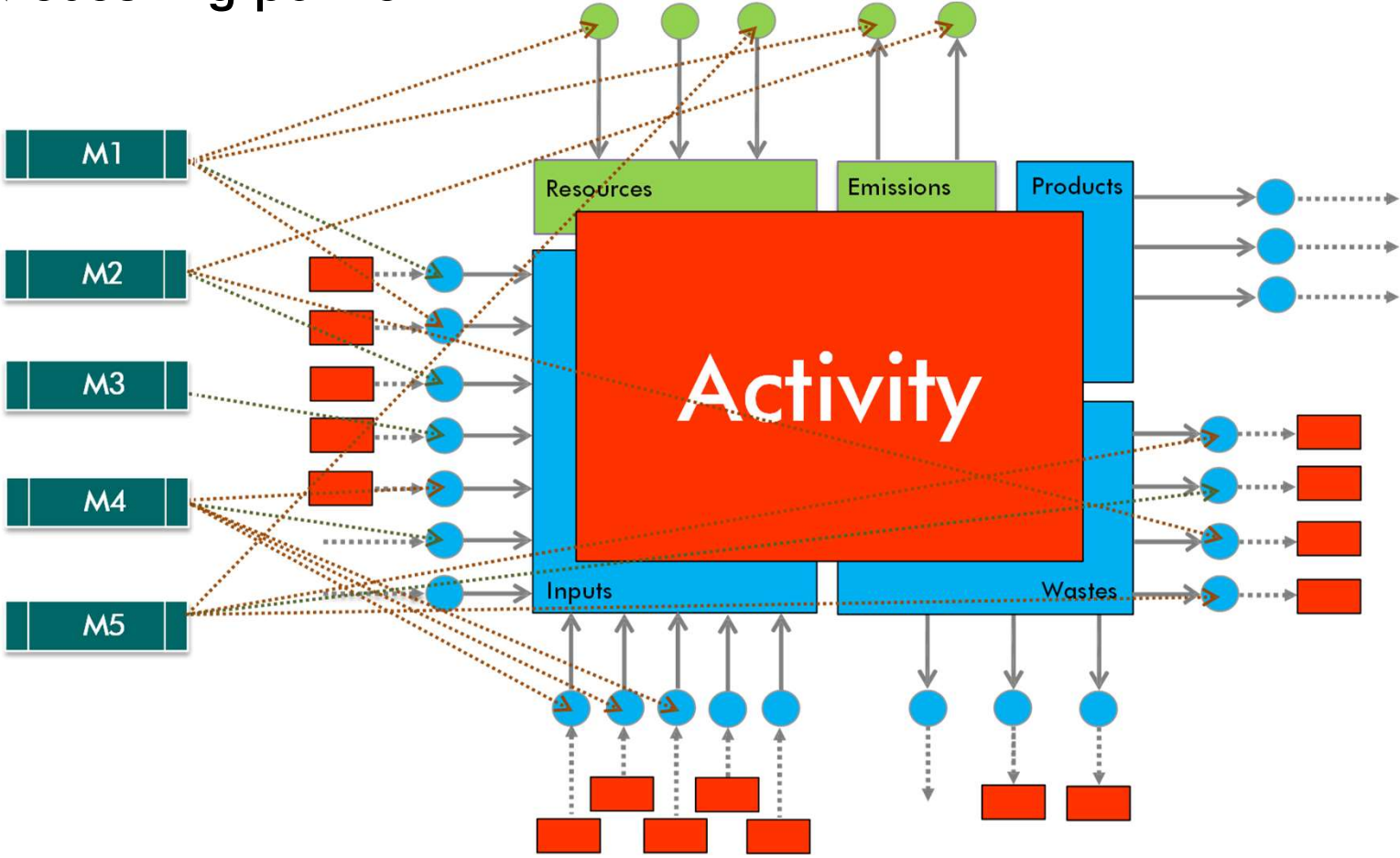
2 Challenges and opportunities of regionalized LCIA

- Different regionalisation approaches
- Comparable results, same conclusions
- Discussion about the regionalisation approach initialised



«Measuring points transform inventories into the corporate world»

Measuring points



LCA expert

Unit Process View

Stoff	FlowType	Eingabe-Wert	Eingabe-Einheit	Link
diesel, low-sulfur	Energiebeschaffung/Scope3	0.0579092934300315	l	market for diesel, low-sulfur
brake wear emissions, passenger car	Direkte Emissionen	-1.0542665329867107E-5	kg	treatment of brake wear em
passenger car maintenance	Betriebsstoffe	1.2130764343956123E-5	unit	maintenance, passenger car
passenger car, diesel	Kapitalgüter (langlebig)	0.015042147786505592	kg	market for passenger car, di
refrigerant R134a	Betriebsstoffe	7.036904761374647E-6	kg	refrigerant R134a productio
road	Infrastruktur	0.0012722272544131768	m*year	road construction@CH/eco
road maintenance	Infrastruktur	3.7430568404171337E-4	m*year	road maintenance@CH/eco
road wear emissions, passenger car	Direkte Emissionen	-2.3193863725707638E-5	kg	treatment of road wear emi

System-Value	0.0579092934300315 kg	Math. Relation	$((gross_vehicle_weight - vehicle_weight) * fc_constant) + fc_basis_vehicle$
Prod. Volumen	0.0 l	Link	market for diesel, low-sulfur@CH/ecoinvent 3.7 (01.01.2000 - 31.12.2020)
Input Value	0.06977023304823073 l	Comment	HBEFA 4.1: PKW Diesel Euro-6ab
Umrechnung	Density BAFU		
FlowType	Energiebeschaffung/Scope3		
Name	Diesel		
VarName	diesel_use		

Intermediates | Elementaries | Parameters

Close

User – Measuring point view

Data collector

Messstelle: Eingabe

Diesel (cars)

Also: Diesel (cars)

< keine Auswahl >

30576.0 l Density BAFU

0.0 < keine Auswahl >

A (Unsicherheit <20%) Berechnung

< keine Auswahl >

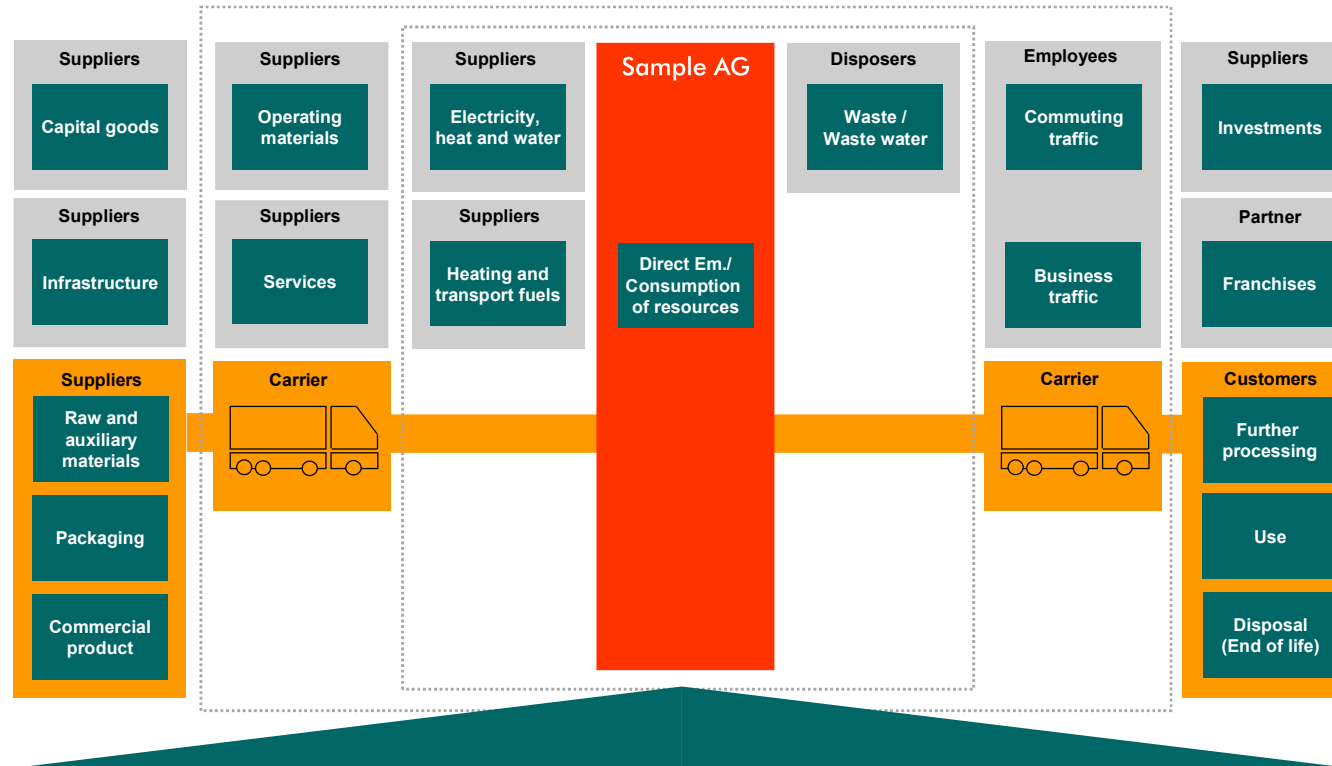
car, diesel, EURO6

Modelling information:
 - Basis: transport, passenger car, medium size, diesel, EURO 5
 - Emissions: HBEFA 4.1

Variable	Menge	Einheit	Comment
Driving performance	556000.0	km	
passengers	1.0	person	
weight of the vehicle	1600.0	kg	
Noise value	72.0	db(A)	

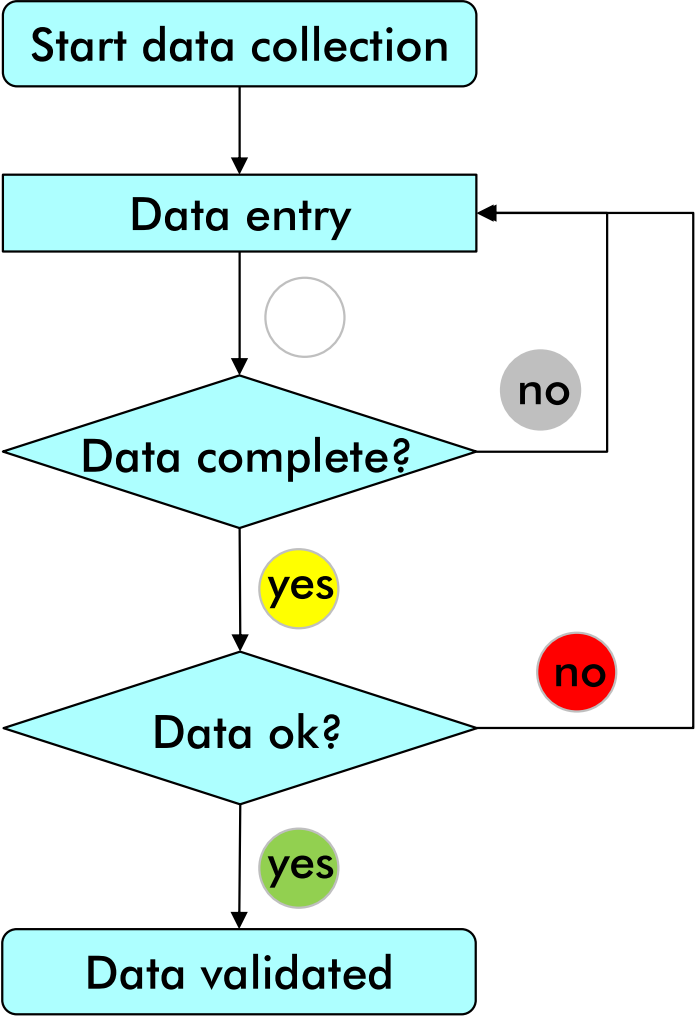
Abbrechen | Speichern

User – Corporate modelling



- ➔ Data quality and availability usually decreases outwards (measurements vs. estimations)
- ➔ Allocation of inventories to measuring points: Existing LCI data sets vs. real materials (e.g. vehicles, chemicals)

Data collection – Procedure REGIS client



Status

- Please enter the data
- The information is not yet complete. Please enter the data.
- The recording is completed by you.
- The recording was rejected. Please check the data.
- The recording is validated.

Category	Amount	Unit	Costs	Current
Electricity	1.0400	kWh		0.0
Renewable electricity (purch)	117517	kWh		
Heating				
Natural gas	410962	m3	0.0	
Heating oil	0.0	kg	0.0	
Fuel				
Vans	5840.0	km	0.0	
Petrol	0.0	l	0.0	
Driving performance	0.0	km		
Diesel	10054.1	l	16793.1	CHF
Driving performance	212046	km		
Water				



Data collection – Procedure site-level

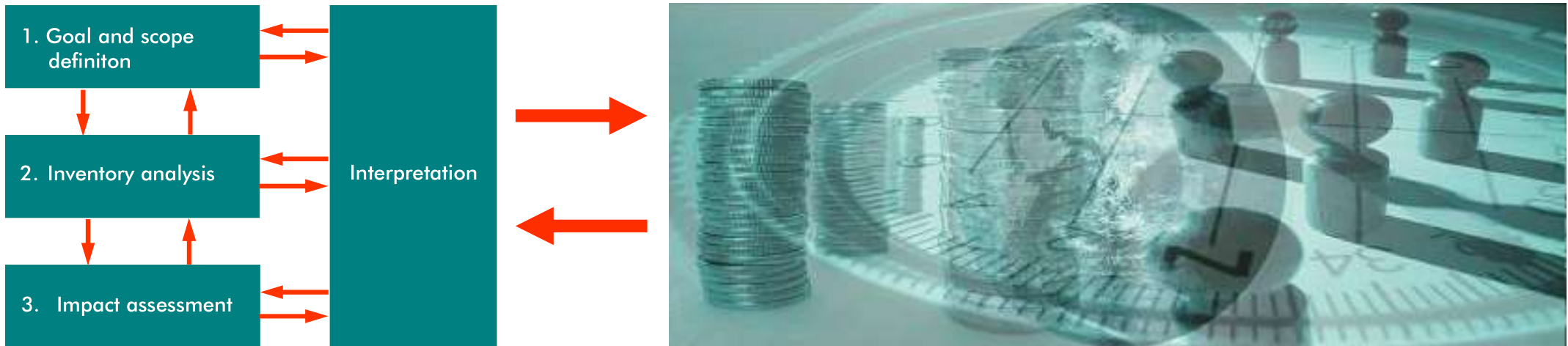
➔ Preliminary check

- Changes in energy reference area/buildings?
- Process modifications or changes? New activities? New data/measuring points?

➔ General issues data collection

- Please read/check all comments (data collection, variables) and where applicable, answer questions (please be brief and precise. Where applicable, reference to documents).
- Indication of data quality and source (mandatory).
- Indication of costs (important issue for data quality assessment).
- Please check units.
- Please comment changes in quantities $> 10\%$. Also all changes that correlate with measures (e.g. CO₂, energy). Consider changes in references (e.g. productive hours).
- *Waste management: see slide waste disclosure.*
- *Reuse of materials/components: If materials are recycled internally, please describe.*
- *Indicated quantities: yearly purchasing vs. yearly consumption. Which amount is indicated? If relevant please indicate (relevant stock)?*

Results – People, time and money



- Different people / different levels of knowledge
 - Financial and human resources
 - Timetables (e.g. publication of annual report)
- ➔ Implementation LCA tools: building a knowledge base in the company
- ➔ Project-adequate communication helps to improve quality....

Results – Use of LCA



DISCLOSURE INSIGHT ACTION



SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

NET-ZERO

2050



2019
Nachhaltigkeits-
Reporting

STATEMENT

ifair-expert LLC, CH-3007 Bern (tbf), to provide a moderate
enhouse gas Inventory 2019.

son provided in the global greenhouse gas Inventory 2019 of
ed by sinum AG, CH-9000 St. Gallen, on May 25, 2020. The
scopes 1, 2 and 3.

ie gas Inventory 2019 is based on
rporate Accounting and Reporting Standard, revised edition, by

d (2008), type 2, to guide its approach to this assurance.

to check the accuracy, plausibility and relevance of the
the assurance:
for reporting (including materiality) and the basic concept of

nel responsible for the analysis and report;
x the collection and analysis of information;
y level) of the systematic approaches to the collection, assembly
ell as to reporting;
zy level) of the calculation, consolidation and quality control of

sing and forwarding of data at selected locations - a sample of
tomer expectations, feasibility;
sing and forwarding of data at selected locations - a
ted.

e basis of, and is subject to the inherent limitations outlined

Includes:
es: Inclusivity, Materiality, and Responsiveness.

thing has come to our attention to indicate that the data and
tal greenhouse gas Inventory 2019 are not



SUSTAINABILITY | ENVIRONMENTAL PERFORMANCE | ECONOMIC PERFORMANCE | SOCIAL PERFORMANCE

COMPANY ← SUSTAINABILITY ← ENVIRONMENTAL PERFORMANCE

ENVIRONMENTAL PERFORMANCE

The environmental indicators shown below were determined for all HUBER+SUHNER sites with significant production activities and therefore cover Switzerland, China, Germany (Mainz and Taufkirchen sites), the UK, India, Malaysia, Mexico, Poland, Tunisia and the USA (Warren, NJ site). Brazil was no longer included in the calculation of the environmental indicators due to the closure of the site there. In 2020, the environmental impact of employees commuting to their workplaces was assessed for the first time.



RELATED DOCUMENTS

- > Environmental policy of HUBER+SUHNER
- > HUBER+SUHNER Sustainability report 2019
- > HUBER+SUHNER Greenhouse gas emissions inventory 2019





Thank you for your attention

sinum AG
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