



# „Paris Buildings: von internationalen Zielvorgaben bis zur lokalen Umsetzung“

Verwaltungsworkshop der Stadt Wien „Wir bauen Zukunft! Nachhaltigkeit, Ästhetik und Inklusion in Bau- und Stadtplanung“

Alexander Passer und Barbara Truger

21.04.22

# Alexander Passer



- Full Professor for Sustainable Construction (2022-)
- Management Board Climate Change Center Austria (CCCA)
- Chair Sustainabilityboard Graz University of Technology
- Associate Professor für Sustainable Construction (2017-2021)
- Visiting Professor (ETH Zürich) (2014)
- Assistant Professor for Sustainable Construction (2010-2016)

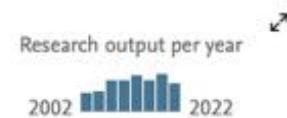
## Research focus

- Life Cycle Sustainability Assessment
- Building Information Modeling
- Life Cycle Assessment
- Building Sustainability Certification
- EPDs

<https://graz.pure.elsevier.com/de/persons/alexander-passer>



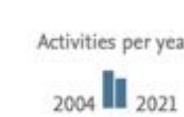
## Research output



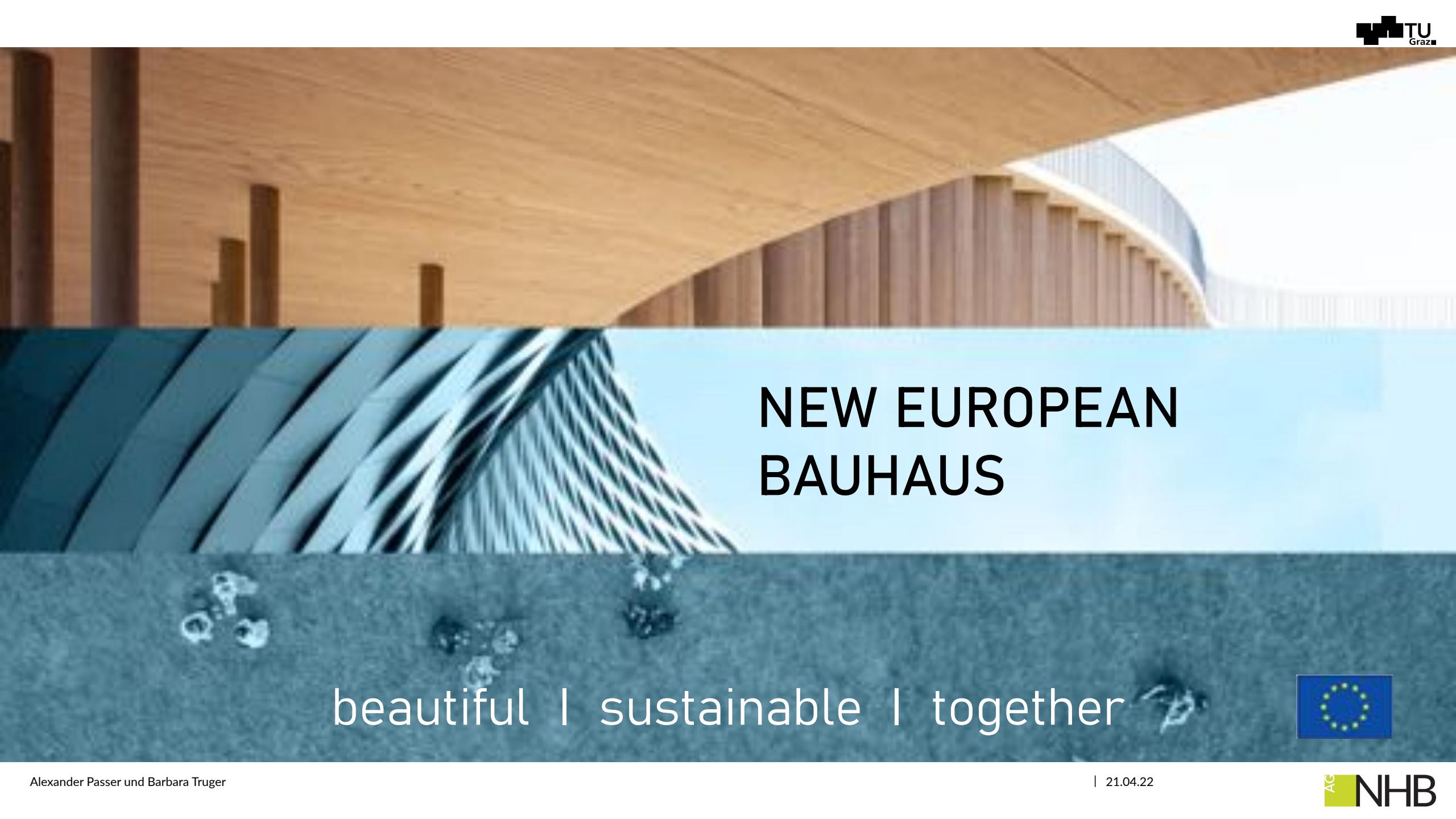
71 Conference paper    48 Article    22 Commissioned report    18 (Old data) Lecture or Presentation    76 More



## Activities



44 Talk at conference or symposium    11 Talk at workshop, seminar or course    11 Research at external institution    9 Membership of research network or expert group    28 More



# NEW EUROPEAN BAUHAUS

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# NEW EUROPEAN BAUHAUS



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#NewEuropeanBauhaus



# Das Neue Europäische Bauhaus

*"If the European Green Deal has a soul, then it is the New European Bauhaus which has led to an explosion of creativity across our Union."*

Ursula Von der Leyen, President of the European Commission

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PRIJZEN 2022   
[neweuropeanbauhaus.eu](https://neweuropeanbauhaus.eu/prizes-2022)

[https://europa.eu/new-european-bauhaus/index\\_de](https://europa.eu/new-european-bauhaus/index_de)



“

By bridging science and innovation with art and culture, and taking a holistic approach, the New European Bauhaus will create solutions that are not only sustainable and innovative, but also accessible, affordable, and life-enhancing for us all.

MARIYA GABRIEL

Commissioner for Innovation, Research, Culture, Education and Youth

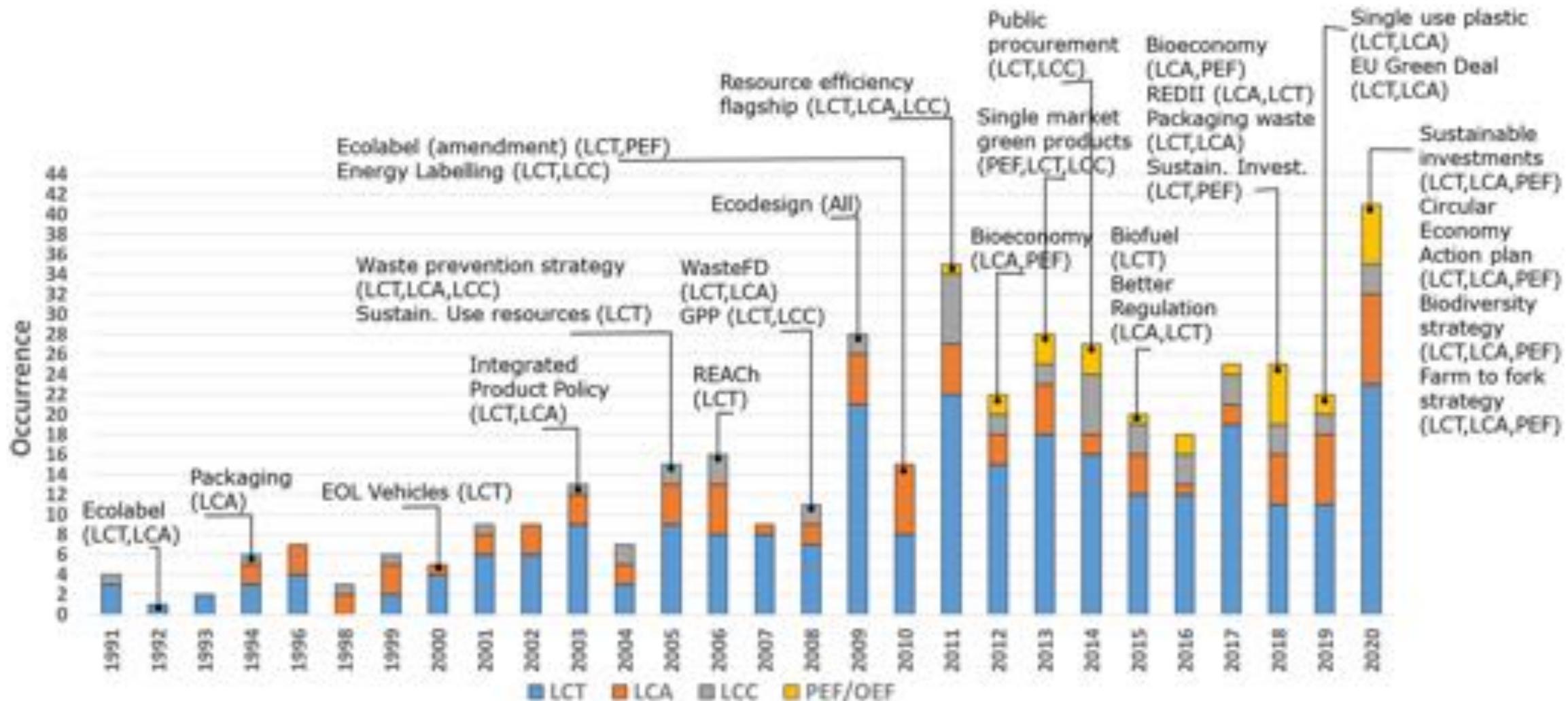


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**Fig. 6** An overview of the role of LCT, LCA, and PEF/OEF within the EU Green Deal and related policies initiatives

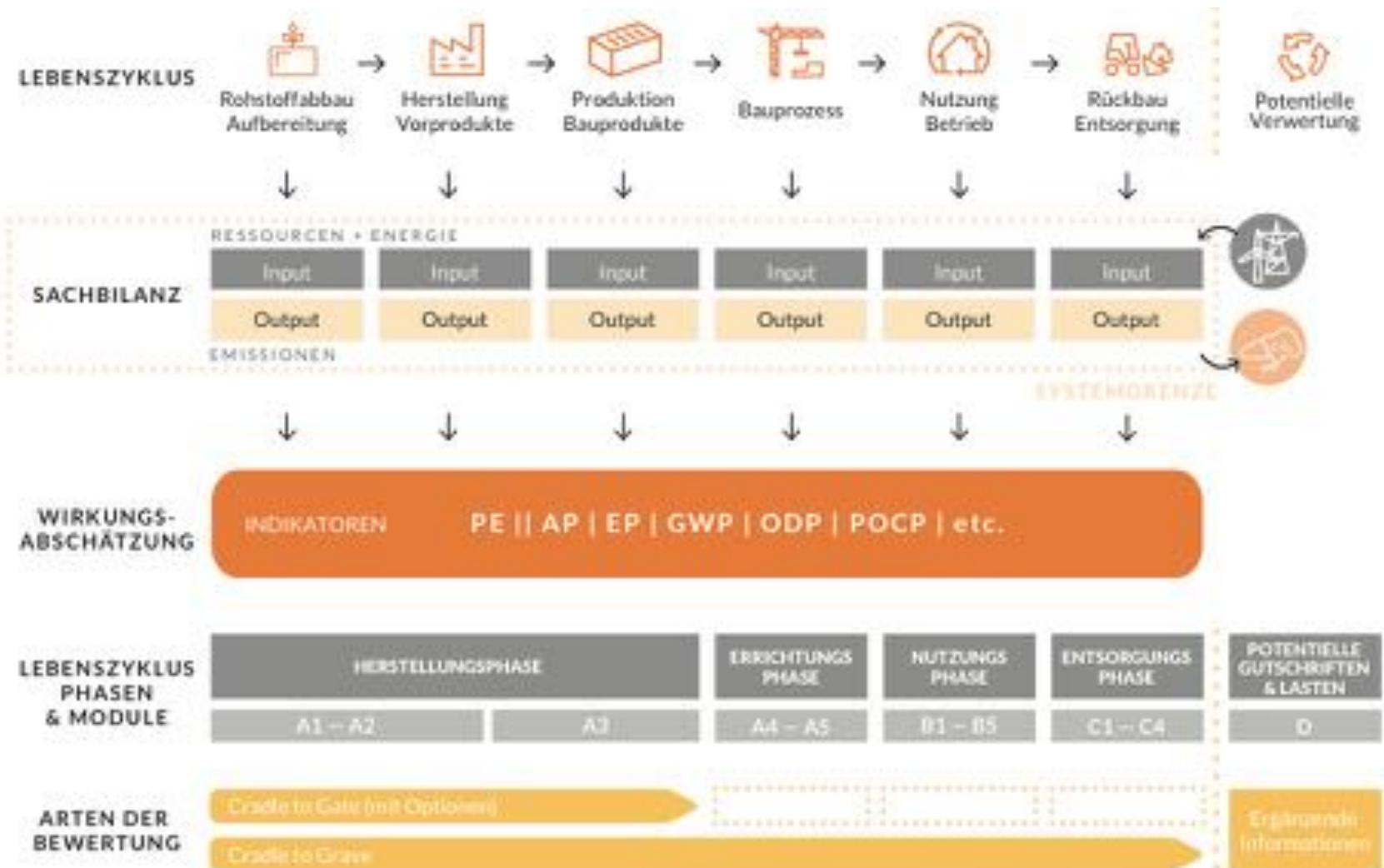


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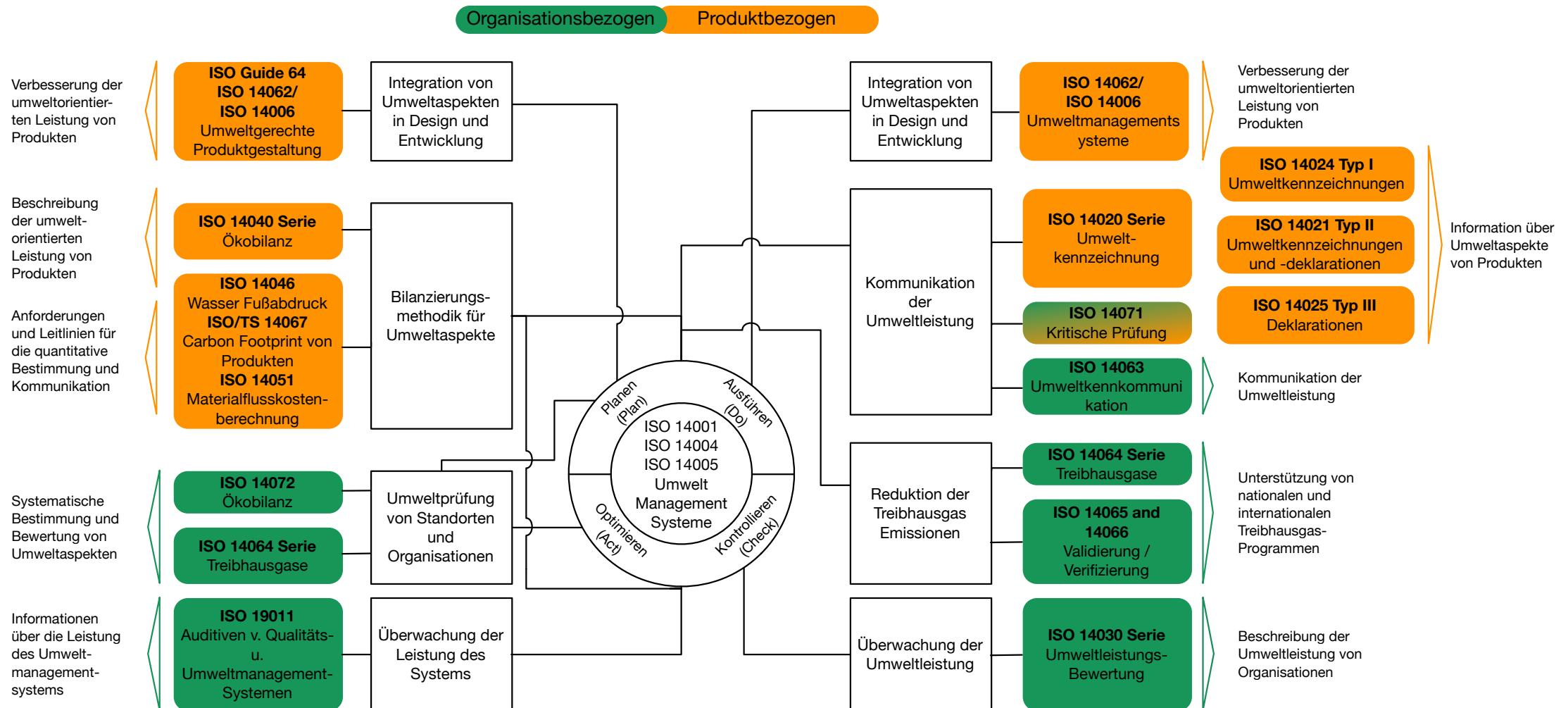
over three decades. Int. J. Life Cycle Assess. 26, 2295–2314. <https://doi.org/10.1007/s11367-021-01893-2>

# Life Cycle Assessment (LCA) Methodology





Source: Passer, A. Habilitation thesis: To the operationalization of sustainable construction, TU Graz 2016



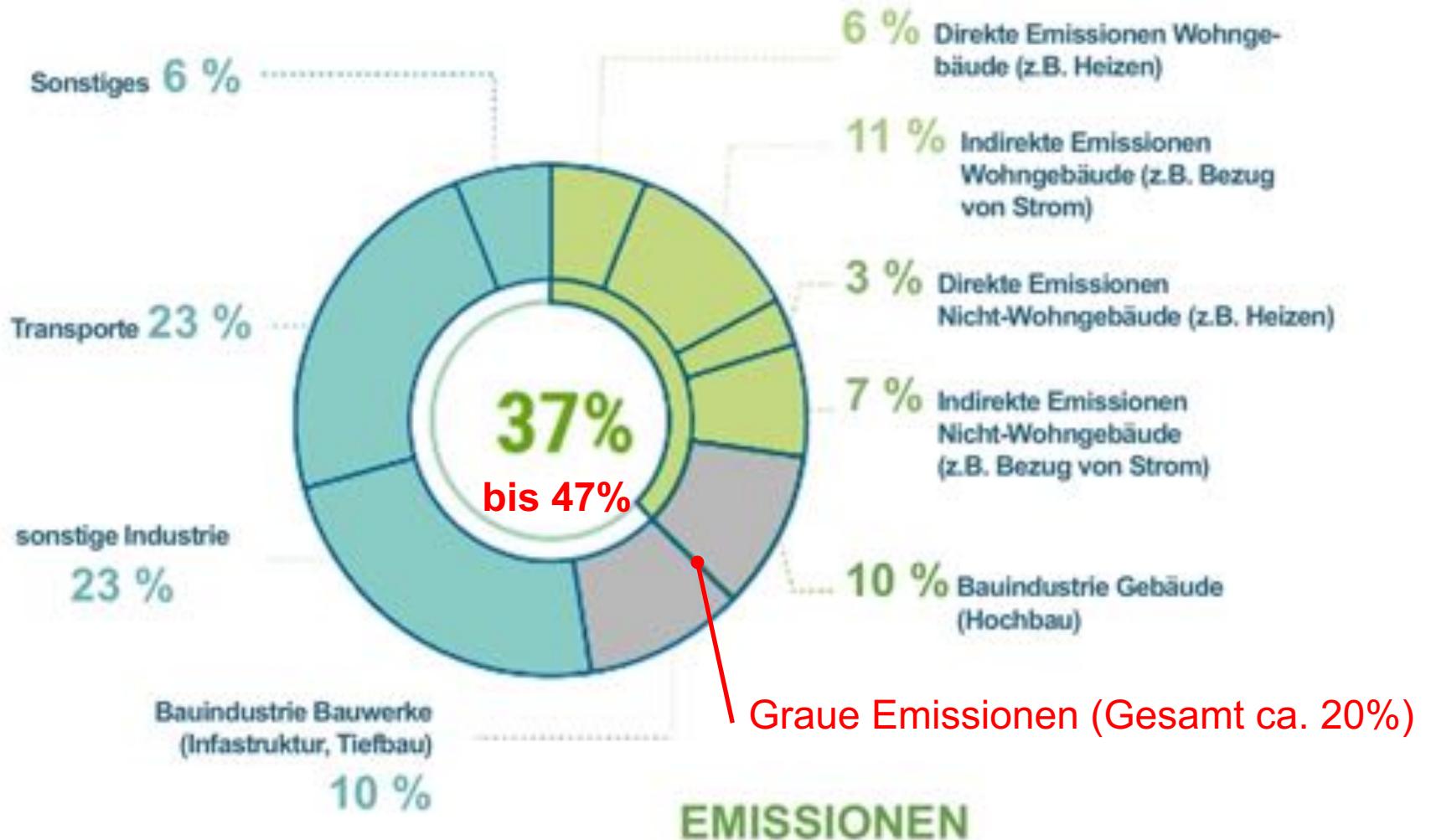
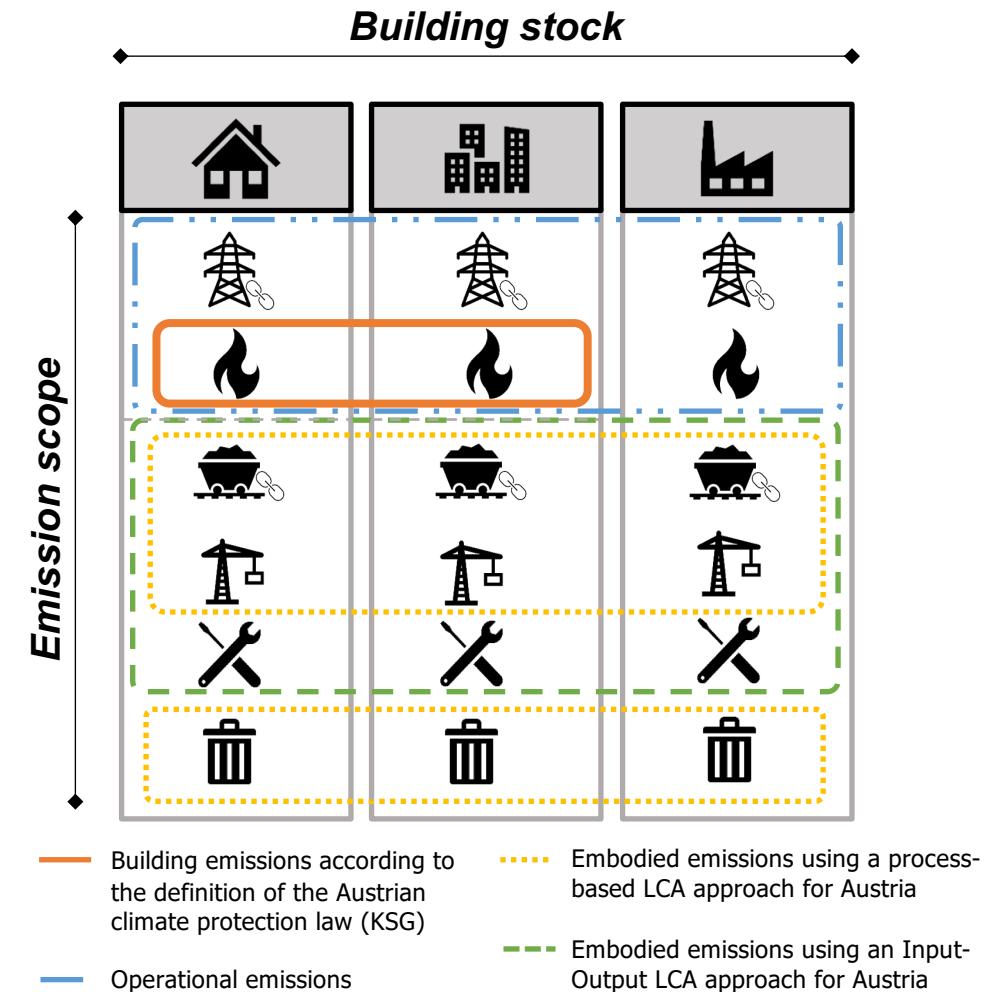
ANTEIL DER GEBÄUDE AN DEN GLOBALEN ENERGIEBEZOGENEN CO<sub>2</sub>-EMISSIONEN

Abbildung: Anteil der Gebäude an den globalen energiebezogenen CO<sub>2</sub>-Emissionen, 2020.  
Quelle: UNEP - United Nations Environment Programme, 2021 Global Status Report for Buildings and Construction:  
Towards a Zero-emission, Efficient and Resilient Buildings and Construction Sector. Nairobi: 2021. S. 15

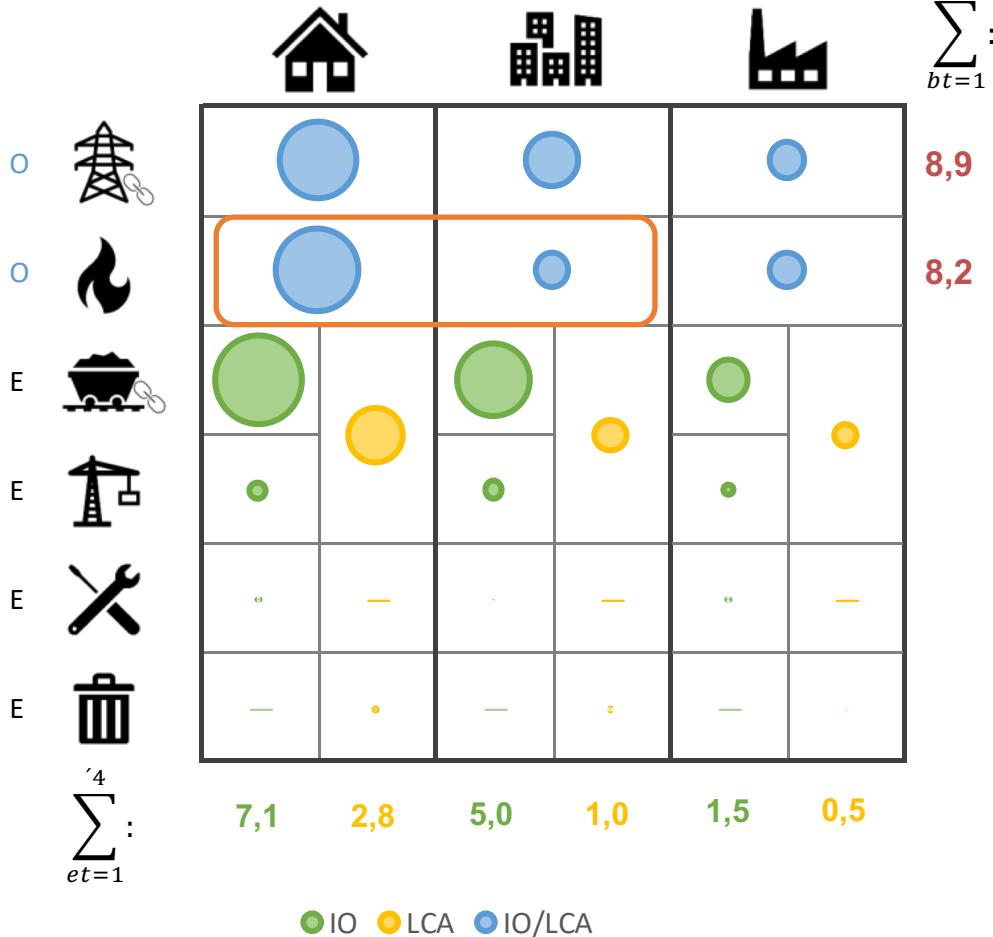
# Results – field of action buildings



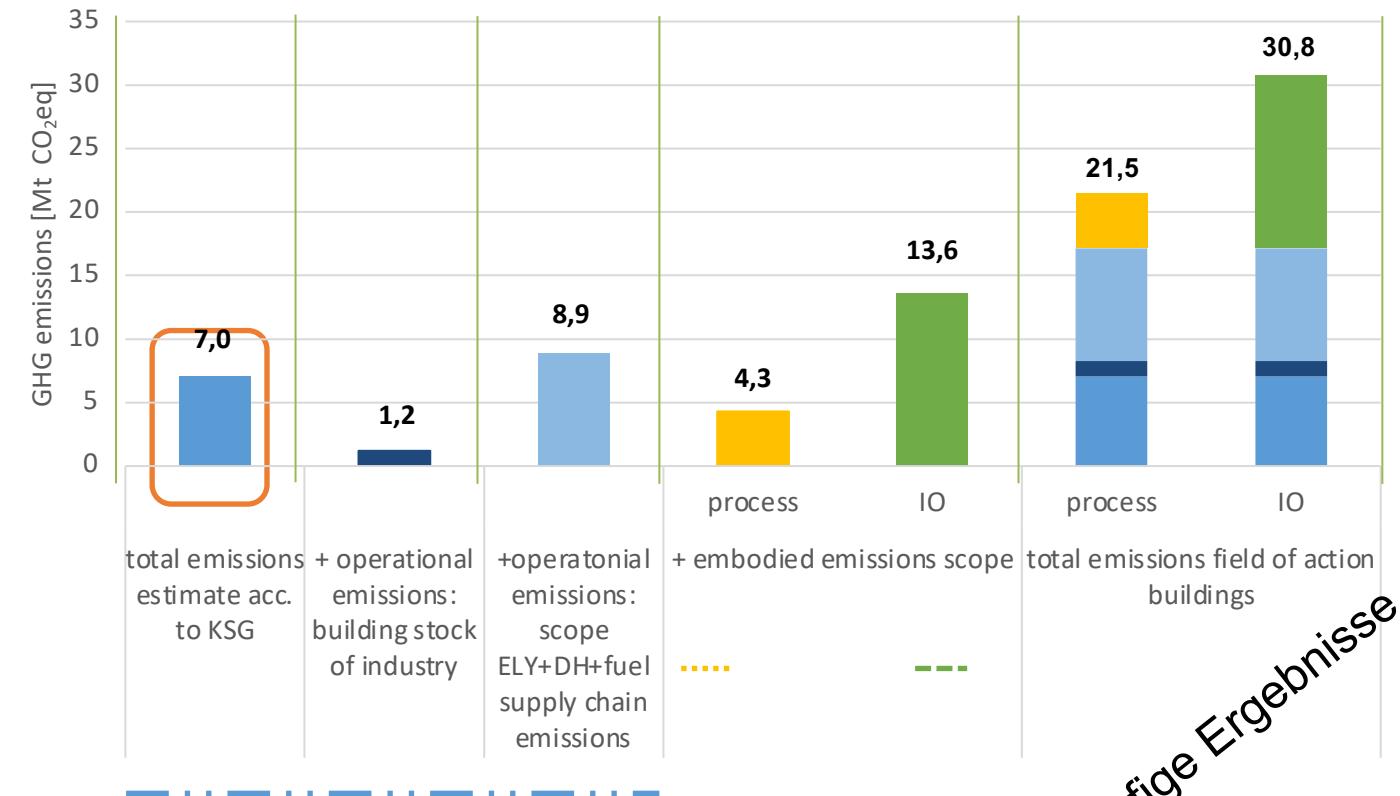
Transition of the procurement process  
towards Paris compatible public buildings



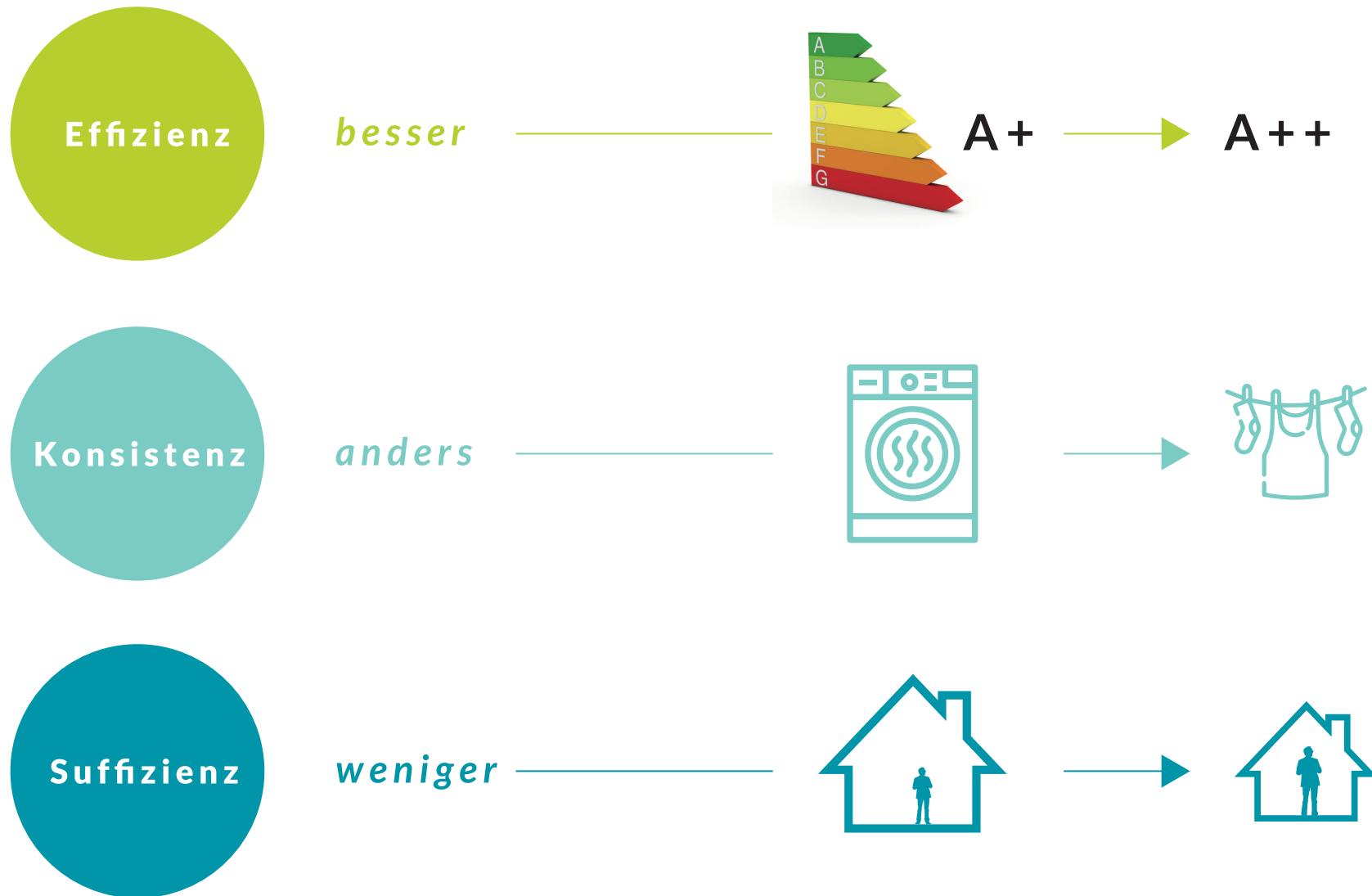
## Results direct and indirect (embodied) emissions

 $\sum_{bt=1}^3$  $\sum_{et=1}^4$  $\sum_{et=1}^4$ 

Building related GHG emissions Austria 2014



Vorläufige Ergebnisse





**Effizienz**

**Super Dämmung**



**Neue tolle Heizung**



**Konsistenz**

**Photovoltaik und  
Solarthermie**



**Wärmepumpen**

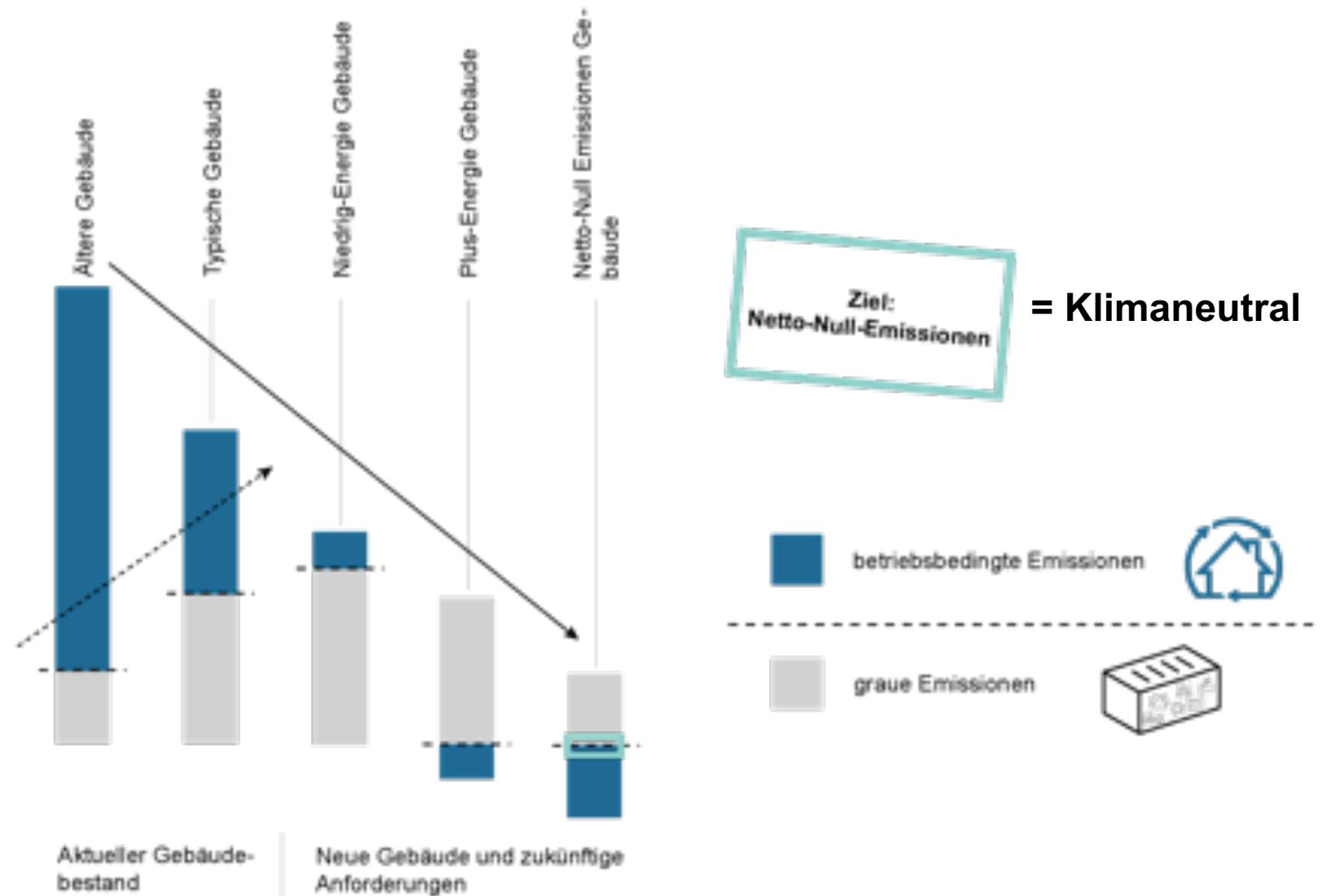


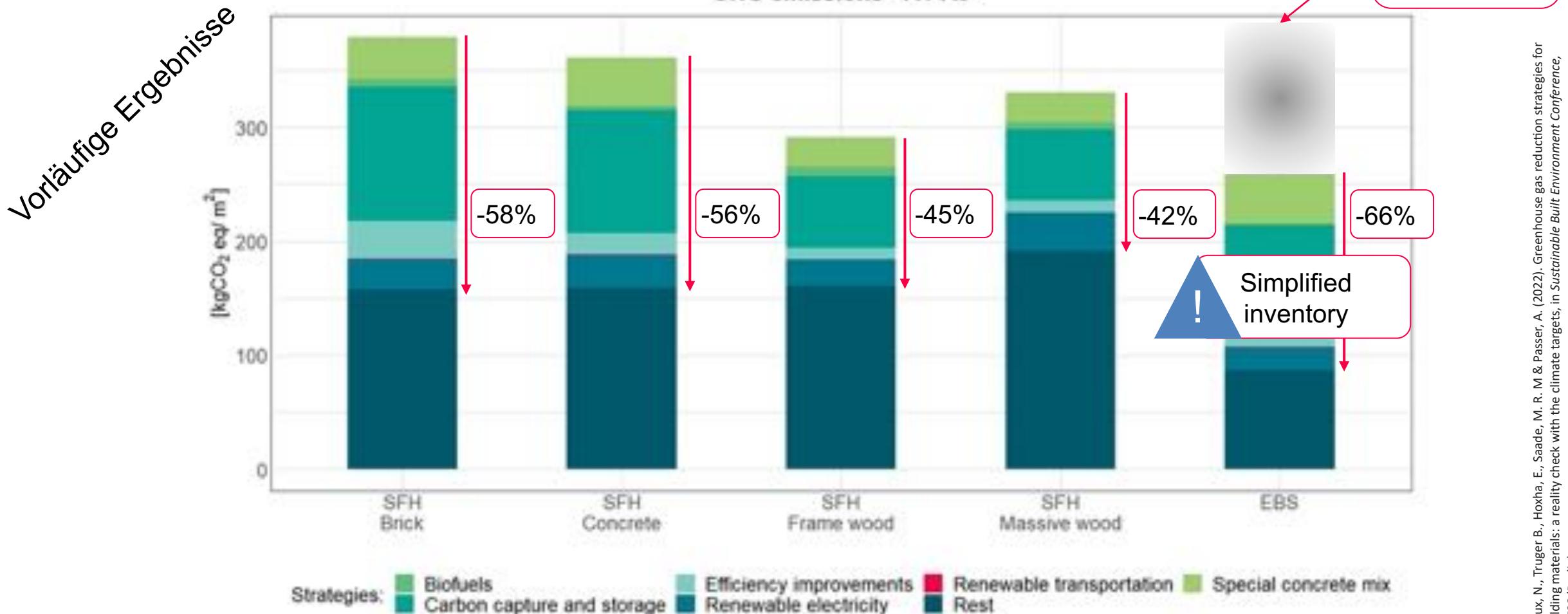
**Suffizienz**

**Licht aus!**



**Heizung runter!**





Alaux, N., Truger B., Hoxha, E., Saadie, M. R. M & Passer, A. (2022). Greenhouse gas reduction strategies for building materials: a reality check with the climate targets, in Sustainable Built Environment Conference, SBE22 (Berlin).



## IEA EBC Annex 72:

# The Monte Verità Declaration



<http://annex72.iea-ebc.org/>

EBC  
International

**Monte Verità Declaration on  
a Built environment without planetary boundaries**

Outcome of the EBC Annex 72

**1. Possible**

Buildings substantially contribute to and influence the quality of life, yet the built environment and economy must not help advancing elements of the Anthropocene development, particularly by its consumption, in particular R&D, Construction, Manufacturing, and Consumption, R&D, Sustainable Consumption and Production and R&D Climate Action. In comprehensive assessment of buildings, without the environmental, the social and economic performance. The Anthropocene dimension covers the built environment, built environment changes caused by greenhouse gas emissions along the life cycle of buildings, impacts on the built environment and potential health risks, due to indoor air quality. This declaration and its recommendations focus on the life cycle of buildings, economic aspects and issues of consumption, the use-life of the objects and their impact analysis co-operating in the EBC Annex 72. Monte Verità Declaration is a special focus on greenhouse gas emissions. Further environmental aspects, including material selection and waste reduction for sustainable building.

This declaration operating in the EBC Annex 72 "Ensuring the Low-carbon Environmental Impact of Buildings" acknowledge that

- is required to keep the rapidly increasing global temperature rise a melting greenhouse, suffering and increasing damages in fragile ecosystems, the environment need to be rapidly and decisively reduced and globally reach net zero CO<sub>2</sub> before 2050 to stay within the remaining global budget which increases the likelihood that the global temperature managed does below 1.5°C;
- the reductions of all other greenhouse gases contributed to the reduction necessary, the planetary boundaries are concerned with respect to protection of biodiversity, nitrogen and phosphorus flows;
- buildings is caused to several regions of the world,
- the concentration of aerosols and soot is the largest to many communities even and regions of the world;
- buildings put pressure on land and global aquatic resources;
- buildings are causing about 40% of global city emissions, urban density, air availability in the energy and the construction industry sectors;
- buildings, building related materials and their waste, there are significant for long use and low carbon and reduce representation and minimum durability losses;
- primary pollutants, caused by the construction industry are contributing substantially to the impairment of outdoor air quality;

The declaration on other planetary parameters to be taken in consideration, "that is why the declaration aims at greenhouse gas emissions increase in buildings."

# Universitätslehrgang Nachhaltiges Bauen Master of Engineering



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unserem Wissen.

Technische Universität Graz  
Technische Universität Wien

# Hinweis auf SBE22 Berlin



## Built Environment within Planetary Boundaries

Sustainable Built Environment D-A-CH Conference 2022



### Topics

Resource Management and Material Flows

Climate Neutral Buildings

Post-Fossil Infrastructures

Critical Digitalisation

Socio-Political Frames for Transitions

Open Call For New Topics

## sbe22 Contact

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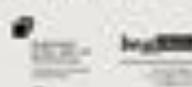
20. - 23. September 2022  
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[www.sbe22.berlin](http://www.sbe22.berlin)

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