

Special session **D1_04_S2**

2. November 2020, 15:45 – 16:45

Organized by: Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR), Germany

Climate neutrality - from single building to urban district

The goal of a climate-neutral Europe also poses new challenges for the construction and real estate sector as well as the development of cities and districts. Activities at different levels of action, i.e. individual buildings, districts and cities, as well as institutional, regional and national building stocks, are necessary. In the coming years, greenhouse gas (GHG) emissions in the operation stage should reach a net zero level. In addition, the embodied GHG emissions should be reduced.

City districts have emerged both as an object of assessment and as a level of action. On the one hand, this opens up new possibilities for action, on the other hand, new questions also arise. Examples are (1) How can neighbourhoods be defined and their system boundaries be determined? (2) Should the emissions be determined and reported using a production-based or a consumption-based approach? (3) Must a distinction be made between an assessment and an action-based approach? (4) How is exported energy handled and what role do embodied emissions play? (5) Can climate-neutral neighbourhoods be achieved with the means of sustainable construction and renovation? (6) How are the different interests of the groups of actors involved addressed?

First, an introductory paper places the topic in the wider context of sustainable district and urban development. Next, with examples from Switzerland, Austria and Germany, national action plans and the state of research in these countries are presented. Both methodological questions and practical examples in the development of districts towards climate neutrality are discussed.

The Federal Government's Climate Action Plan 2050 formulates e.g. the necessary steps for Germany – see <https://www.bmu.de/en/publication/climate-action-plan-2050/>

Links to SDG 11 and SDG 13 are established.

Moderator

Prof. Dr. Thomas Lützkendorf, Karlsruher Institut für Technologie (KIT), Germany

Main Questions

- (1) How can climate neutrality of buildings and neighborhoods be assessed and demonstrated?
- (2) How can the cross-linking of individual buildings and within a district be optimized in the interest of saving energy and protecting the climate?
- (3) How can the cost-benefit ratio of measures applied on the neighborhood level be assessed?
- (4) How can an assessment of climate protection measures at building and district level be integrated into different steps of the design process?

Presentations

Introduction

Cities

as actors and objects of assessment

Hilmar von Lojewski

Association of German Cities, Germany

Presentation 1

Sustainable development

of climate-neutral buildings and neighbourhoods

Dr. Tilman Hesse, Senior Researcher

Energy & Climate Division Öko-Institut e.V., Germany

Presentation 2

Positive Energy Districts in Austria

Frameworks, Case Studies and Definitions

Simon Schneider MSc.

University of Applied Sciences - Technikum Wien, Austria

Presentation 3

Climate Neutrality in Switzerland – The 2000-Watt-Society and its application on new and existing Districts

Daniel Kellenberger

Intep Integrale Planung GmbH, Switzerland

Additional information:

Europe

related to the overall topic

<https://jpi-urbaneurope.eu/ped/>

<https://keep.eu/projects/5410/>

<https://www.hamburg.de/contentblob/4433362/5cdc2899d6d449e436be461d45dd2dd1/data/d-clue.pdf>

Austria

related to the presentation

https://nachhaltigwirtschaften.at/resources/sdz_pdf/schriftenreihe-2020-11-zukunftsquartier.pdf

related to the overall topic

<https://nachhaltigwirtschaften.at/en/projects/index.php?subsites=Stadt+der+Zukunft&keywords=Plus-Energie-Geb%C3%A4ude+%28Studien+und+Umsetzung%29>

Switzerland

related to the presentation

https://www.local-energy.swiss/dam/jcr:5126840c-c16d-4019-aea0-c2e0f055329b/Bilanzierungskonzept_2000-Watt-Gesellschaft_Kurzversion.pdf

related to the overall topic

<https://www.bfe.admin.ch/bfe/en/home/supply/statistics-and-geodata/geoinformation/geodata/cities-and-municipalities/-2-000-watt-sites--label.html>

<https://www.2000watt.swiss/en/english.html>

Germany

related to the overall topic

https://www.bbsr.bund.de/BBSR/DE/veroeffentlichungen/exwost/42/exwost42_1.pdf?__blob=publicationFile&v=2

<https://www.pik-potsdam.de/members/lass/climate-neutral-berlin-20150--a-feasibility-study>

<https://neue-weststadt.de/en/>