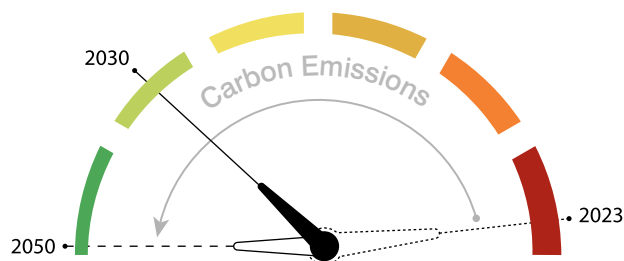


IEA EBC ANNEX 89

Ways to implement net-zero whole life carbon buildings



Project duration:
2023 - 2027

Operating Agent:
Alexander Passer,
Graz University of Technology,
Technikerstraße 4/IV, A-8010 Graz
iea-ebc-annex89@tugraz.at

Subtask leaders and co-leaders:

- Subtask 1: Greg Foliente, Australia.
- Subtask 2: Marcella Saade, Austria, and Vanessa Gomes, Brazil.
- Subtask 3: Maria Balouktsi, Denmark.
- Subtask 4: Freja Nygaard Rasmussen, Norway, and Alice Moncaster, United Kingdom.
- Subtask 5: Alexander Passer, Austria, with Thomas Lützkendorf, Germany, and Rolf Frischknecht, Switzerland.

Participating countries:

Australia, Austria, Belgium, Brazil, Canada, China, Denmark, Finland, France, Germany, Italy, Japan, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States of America

INTERNATIONAL ENERGY AGENCY

The International Energy Agency (IEA) was established as an autonomous body within the Organisation for Economic Co-operation and Development (OECD) in 1974, with the purpose of strengthening co-operation in the vital area of energy policy. As one element of this programme, member countries take part in various energy research, development and demonstration activities. The Energy in Buildings and Communities Programme has co-ordinated various research projects associated with energy prediction, monitoring and energy efficiency measures in both new and existing buildings. The results have provided much valuable information about the state of the art of building analysis and have led to further IEA co-ordinated research.

EBC MISSION

By 2030, near-zero primary energy use and carbon dioxide emissions solutions have been adopted in new buildings and communities, and a wide range of reliable technical solutions have been made available for the existing building stock.

EBC VISION

To accelerate the transformation of the built environment towards more energy efficient and sustainable buildings and communities, by the development and dissemination of knowledge and technologies through international collaborative research and innovation.

SUMMARY

IEA EBC Annex 89 focuses on the pathways and actions needed by various stakeholders and decision-makers to implement whole life cycle based net-zero greenhouse gas (GHG) emissions from buildings in policy and practice. This means explicitly considering both embodied and operational GHG emissions across all stages of the built asset life cycle – also referred to as whole life (WLC) – to achieve the overarching (or ultimate) goal of the Paris Agreement, which is to limit global warming to well below 2° Celsius, and preferably to 1.5° Celsius, above pre-industrial levels by aiming to achieve climate neutrality by 2050 latest. In this document, policies, initiatives and actions that share, support and contribute to this goal are referred to as “Paris-goal compatible”.

There is a critical and urgent need to effectively implement science-based targets, assessment methods, and solutions into policy and practice to enable a broad range of stakeholders and key decision-makers across the world to promote and support the delivery of NetZ-WLC buildings at speed and at scale.

PROJECT OBJECTIVES

- 1 Developing guidelines and recommendations on establishing whole life carbon targets (including carbon budgets) for the building and real estate sector at various scales and perspectives and identifying critical carbon reduction pathways and actions;
- 2 Establishing Paris-goal compatible assessment frameworks and evaluating the suitability and application(s) of different assessment methods to achieve NetZ-WLC buildings at various scales;
- 3 Mapping and assessing the relevance and effectiveness of a range of tools, aids and instruments available to different stakeholders in their decision-making contexts and objective(s);
- 4 Understanding the conditions that are conducive for in-practice uptake and more effective implementation of context-based solutions and actions by key stakeholders; and
- 5 Ensuring efficient and effective engagement and knowledge exchange with diverse stakeholder groups and disseminating Annex 89 outputs that maximise opportunities to “get it to the ground” – from local to global scale.

SUBTASKS & DELIVERABLES

- D1 Report on guidelines and recommendations on establishing carbon reduction paths and actions towards NetZ-WLC buildings based on relevant contexts of countries and jurisdictions
- D2 Report on guidelines for selection and application of assessment methods to estimate and determine Paris-goal compatible NetZ-WLC status of buildings
- D3 Report on enabling tools and instruments to increase NetZ-WLC building implementation at national and regional (e.g., EU) level.
- D4 Report on enabling and disabling factors for implementation of NetZ-WLC initiatives, and lessons learnt for transferring to different contexts

STRUCTURE OF THE ANNEX89

