IEA EBC Annex 80 - Resilient Cooling

Webinar 2: Future weather data and heatwaves

1

IEA EBC Annex 80 - Resilient Cooling

Webinar 2: Future weather data and heatwaves

Peter Holzer

Operating Agent EBC Annex 80
Institute of Building Research & Innovation
Vienna, Austria

2

IEA EBC Annex 80

EBC
Energy in Buildings and Communities Programme

Series of webinars in cooperation with AIVC & venticool

1. Indicators to assess resilience of cooling in buildings [May 10, 15:00-16:15 CEST]
2. **Future weather data and heatwaves [May 31, 16:00-17:15 CEST]**
3. Examples of resilient cooling solutions [September 13, 15:00-16:15 CEST]
4. Case studies and policy recommendations [September 20, 15:00-16:15 CEST]

https://annex80.iea-ebc.org/

AIVC venticool the platform for resilient ventilative cooling INIVE

Today's Programme

Programme (Brussels time)

16:00	**Introduction to Annex 80, AIVC & venticool** Peter Holzer, Operating Agent EBC Annex 80, Institute of Building Research & Innovation, AT	**16:40**	**Practical Applications 2: Evaluation and sizing of cooling technologies in future climates** Ronnen Levinson & Sang Hoon Lee, LBNL, US
16:05	**Motivation & determination of world-wide future weather data and heatwaves** Agnese Salvati, UPC, ES	**16:55**	Questions and answers
16:25	**Practical Applications 1: Mitigation and adaptation strategies in building design** Anaïs Machard, University of La Rochelle, FR	**17:15**	End of the webinar

IEA EBC Annex 80

- **Participants**

  36 institutions from 16 countries (Americas, Europe, Asia, Australia)

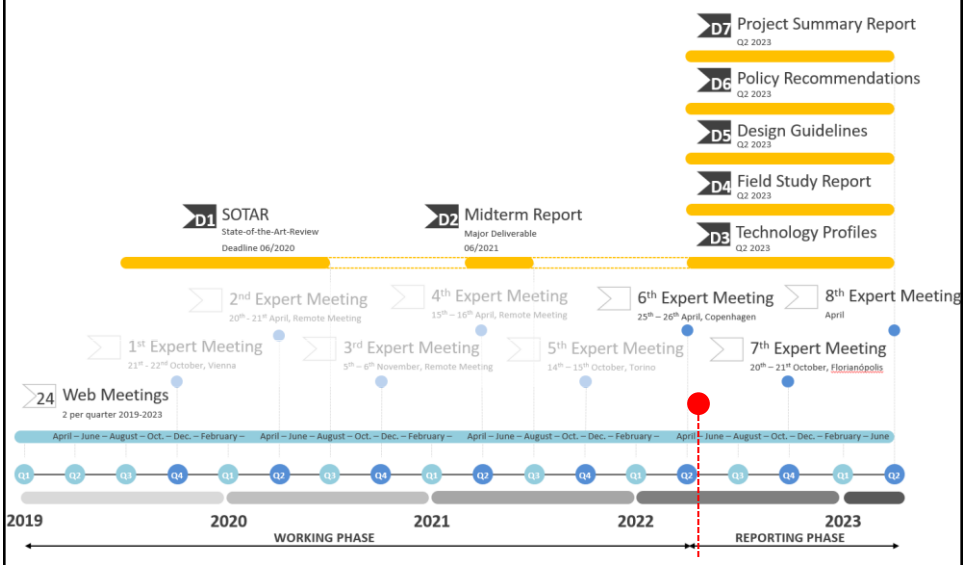
- **Guests** (not part of EBC yet)

  Mexico, **José Roberto Garcia Chavez**, Metropolitan Autonomous University Mexico City

  India, **Rajan Rawal**, CEPT University, CARBSE

1. Preparation Phase (1 year)
   June 2018 – June 2019
2. Working Phase (3 years)
   June 2019 – June 2022
3. Reporting Phase (1 year)
   June 2022 – June 2023

Annex 80 Roadmap



Annex 80 Objectives

*"Support a transition to an environment where **affordable low energy** and **low carbon** cooling systems are the mainstream and preferred solutions for cooling and overheating issues in buildings."*

A Assess benefits, potentials and performance indicators. Provide guidance on design, performance calculation and system integration.

B Research towards implementation of emerging technologies. Extend boundaries of existing solutions.

C Evaluate the real performance of resilient cooling solutions.

D Develop recommendations for policy actions.

Definition of Resilient Cooling

"Affordable low energy and low carbon cooling solutions, strengthening the ability of individuals and communities to withstand and prevent the thermal - and other - **impacts of changes in global and local climates."**

Annex 80 Deliverables

D1	State-of-the-Art-Report	▪ Research community and associates ▪ Real Estate developers ▪ Urban planning experts ▪ Policy makers	OA, STA, STB, STC, STD
D2	Midterm Report	▪ Research community and associates ▪ IEA and EBC Programme	OA, STA, STB, STC, STD
D3	**Technology Profiles**	▪ Building component developers and manufacturers ▪ Architects and design agencies ▪ Engineering offices and consultants	STB
D4	**Field Studies**	▪ Building component developers and manufacturers ▪ Architects and design agencies ▪ Engineering offices and consultants ▪ Real Estate developers	STC
D5	**Design and Operation Guidelines**	▪ Architects and design agencies ▪ Engineering offices and consultants ▪ Real Estate developers	STA, STB, STC
D6	**Recommendations for policy actions, legislation and standards**	▪ Policy makers ▪ Legal interest groups ▪ Experts involved in building energy performance standards and regulation	STD
D7	**Project Summary Report**	▪ Research community and associates ▪ IEA and EBC Programme ▪ Real Estate developers ▪ Policy makers	OA, STA, STB, STC, STD

Annex 80 Publications

1. "**Developing an understanding of resilient cooling**: a socio-technical approach City and Environment Interactions" (Wendy Miller et al; published in Elsevier City and Environment 2021) https://doi.org/10.1016/j.cacint.2021.100065
2. "**Resilient cooling of buildings to protect against heat waves and power outages**: key concepts and definition" (Shady Attia et al; published in Energy and Buildings 2021) https://doi.org/10.1016/j.enbuild.2021.110869
3. "**Resilient cooling strategies - a critical review and qualitative assessment**" (Chen Zhang et al; published in Energy and Buildings 2021) https://doi.org/10.1016/j.enbuild.2021.111312
4. Report of Thermal Conditions Task Group "**Framework to evaluate the resilience of different cooling technologies**" (Shady Attia et al; published) http://dx.doi.org/10.13140/RG.2.2.33998.59208




Next:

Dr. Agnese Salvati

Universidad Politécnica de Cataluña, Barcelona Tech

Spain