



Global Alliance
for Buildings and
Construction



Technical Expert Meetings on Mitigation TEM-M 2020

“Human settlements: sustainable low-emission housing and building solutions. Technologies and design for buildings, housing and construction”

Concept Note

Virtual meeting: 30 September, 7 October and 14 October 2020
Organised by the Global Alliance for Buildings and Construction
And United Nations Framework Convention on Climate Change Secretariat

Getting to zero emission buildings by 2050

*The objective of the TEM is to share low emission housing and building solutions, from technologies to policies and processes, and continue to build a community that drives and implements an ambitious vision for the sector: **Zero Carbon Buildings by 2050.***

Organised as a virtual meeting of three 90-minute sessions, the first two focusing on trends, barriers and solutions regarding cooling and circularity respectively and the third focusing on developing pathways for moving sustainable buildings and construction sector solutions to scale. Each session will feature experiences from around the world, followed by an interactive discussion.

- 1. Cool buildings for all**
- 2. Mobilising the value chain towards circular economy**
- 3. Developing pathways for moving to scale**

Background TEM-M

The technical examination process on mitigation (TEM-M) consists of regular in-session thematic technical expert meetings and focused follow up work to be conducted by Parties, international organizations and partnerships throughout the year. Parties to the Convention resolved to accelerate it by 2020 in order to implement scalable best practice policies and bridge the ambition gap. The TEM sessions aim to better integrate the TEPs with the Marrakech Partnership for Global Climate Action and engage a wide group of experts.

The thematic of Technical Expert Meetings of September 2020 is **“Human settlements: sustainable low-emission housing and building solutions. Technologies and design for buildings, housing and construction”**.

Leading upto this Global TEM-M, a series of four regional¹ technical expert meetings were held between 19 and 27 August 2020, organized by the Technology Executive Committee (TEC²), Climate Technology Centre and Network (CTCN³) and the Regional Collaboration Centers (RCC⁴s), with the support of the Global Alliance for Buildings and Construction (GlobalABC⁵). They showcased climate-friendly technology solutions for cooling systems in buildings and demonstrate innovative and on-the-ground actions.

Background and description of the consecutive sessions

Building upon the Paris Agreement recognition of the need for vertical policy integration, engaging national and local governments in a strategy for climate action, the TEM-M in 2020 will explore how we can achieve the vision of Zero Carbon Buildings by 2050 and thereby harness the significant potential of the buildings and construction sector to contribute to keeping the temperature rise at 1.5°C or at least well below 2°C.

Buildings and construction represent 40% of energy related carbon dioxide emissions worldwide (Global Status Report – Buildings and Construction - 2019). Despite some of the readily available solutions in this sector being amongst the most cost-efficient mitigation measures, emissions are on the rise again after declining in 2016. Increase in floor space is outpacing efficiency improvements and the 20% increase of renewable energies. We are witnessing consistent under investment in energy efficiency measures. Rising cooling demand, particularly in developing countries highlights the importance of choosing efficient, locally adapted construction materials for natural cooling to lower emissions. The way buildings are designed is essential for natural cooling and for furthering

Objectives of TEM-M 2020

- Consider new and available technologies, materials, designs and construction practices, including those based on indigenous and local knowledge, for low emissions housing and buildings.
- Identify and discuss policy approaches and financial mechanisms which could be used to disseminate and sale up these technologies, materials, designs and practices.

¹ <https://unfccc.int/news/un-climate-change-meetings-on-cool-buildings>

² <https://unfccc.int/ttclear/tec>

³ <https://www.ctc-n.org/>

⁴ <https://unfccc.int/about-us/regional-collaboration-centres>

⁵ <https://globalabc.org/>



nature-based solutions at the same time. According to the International Resource Panel, effective buildings materials could reduce greenhouse gas emissions by 350 million tonnes in China; 270 million tonnes in India; and 170 million tonnes in G7 countries, between 2016 and 2060.

The Global Alliance for Buildings and Construction (GlobalABC), rallying some 140 members across the globe and from government, private sector, civil society and think tanks, embarked on a process that involved some 700 stakeholders to regionalise its Global Roadmap for Africa, Asia and the Pacific and Latin America. Several short-term, medium and longer-term measures are described to get there, taking into consideration regional context and priorities. This ties directly with the Pathways developed for Human Settlements under the Marrakech Partnership Global Climate Action.

The event will consist of three consecutive panel discussions as follows, bringing together experts from Ministries and non-parties representatives to explore how to realise the sector's mitigation potential. The sector's important role in adaptation is recognised, and as possible and appropriate, the potential for mitigation and adaptation of some of the solutions will be brought out.

Background document: UNEP is about to release in September 2020 the **Resource efficiency and climate change IRP** – material strategies for a low carbon future 2020 report which provides insights about the role of materials and circular economy in a context of Global warning and identifies solutions to reduce the demand for primary materials by making secondary materials available which could save up to 40% on GHG emissions in the sector by 2050.

A Technical Paper on “Human settlements: sustainable low-emission housing and building solutions” will also be published by the UNFCCC by November 2020 which will be one of the inputs to the Annual Summary to Policy Makers.

Objectives of the three sessions

Sessions will feature reviewing trends and status quo, showcasing solutions, and examining barriers and ways to overcome them. Examples from different regions in the world will highlight concrete measures. The last session will focus on long-term strategies through effective roadmaps to put the sector on a well-below 2-degree path. Each session will garner recommendations to policy makers which will be summarized at the end.

1- Cool buildings for all

Cooling demand is on the rise, especially in hot regions in developing countries. If we do not prepare for this predictable crisis, which will hit most vulnerable people hardest, we will face unprecedented impacts for people's health and economy's productivity. To meet this emerging challenge, an approach combining *avoid-shift-improve* is most effective: *Avoiding* cooling needs through effective building design such as cool and green roofs, and effective insulation, adapted urban design, considering solutions from vernacular architecture, to building materials; *shift* though shifting power sources to district cooling; and *improve* through more efficient appliances. The session, organized in collaboration with the Cool Coalition, will also look at preparedness for heatwaves and a health impacts and will address the following points:

- Reviewing trends: How have cooling trends developed and what is the status quo?
- Reviewing solutions: Which solutions have worked in which context (avoid-shift-improve, for example passive buildings design, change in urban form to reduce cooling need, incentives for retrofits and district energy)? Which innovations are awaiting uptake? What are the game changers?
- Reviewing barriers: How have barriers been overcome?
- Going to scale: How can we bring solutions to scale? Which players need to be on board that are not yet involved?

2- Mobilising the value chain towards circular economy

Circularity is a way to address the sector's carbon footprint throughout its lifecycle, from design through construction to disposal. A circularity approach includes designing buildings with the urban context in mind, with longer lifetimes, greater flexibility in use, and as material banks, and using recycled and innovative materials. This requires mobilisation across the entire value chain, paying attention to the local context including local materials and designs. The session will also look at the sector's potential for creating new jobs and addressing training needs, promoting building back better in a post-COVID-19 context. This session will address the following points:

- Reviewing trends: How have building and construction value chains developed and what is the status quo?
- Reviewing solutions: Which solutions (policies, technologies) towards circularity have worked in which context? How do these address job creation and decent work? What are the game changers?
- Reviewing barriers: Which barriers towards circularity exist and how have these been overcome?
- Going to scale: How can we bring solutions to scale? Which players need to be on board that are not yet involved?

3- Developing pathways for moving to scale

We need effective long-term strategies, including embedding ambitious buildings and construction commitments into NDCs, devising performance-based building codes and standards, and setting up public procurement procedures. Developing regional and national roadmaps as pathways which include such measures as milestones are important tools in devising such strategies and engaging relevant stakeholders. This session will address the following points:

- How are buildings reflected in NDCs?
- What is the status of different building standards related to climate change?
- How can we build effective pathways for ambitious building standards and NDCs? Which roadmaps exist and makes a roadmap an effective tool for change?
- What type of cooperation is needed to effect change?



Target audience

Experts from national and sub-national government, private sector, academia and think tanks.

Types of speakers and moderators:

The three sessions will be mindful of regional representation, emerging topics and gender balance.

Speakers will be representatives from national and local governments, financial and technical experts from different fields committed to zero emission, efficient and resilient buildings.

Moderators will be technical and thematic experts recognised in the sector, members of GlobalABC, engaged in work areas groups. Speaker and moderator names given below are TBC.

Role of High-Level Champions

TEM and MPGCA will be closely linked. High level champions will be invited to provide guidance and support integrating the outcomes and suggestions into the COP. The high-level champions are invited to give opening and/or closing remarks.



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