30th meeting of the Technology Executive Committee

1-3 April and 4 April 2025, UN City, Copenhagen, Denmark

Agenda item 4.c.i
Buildings and infrastructure

United Nations
Climate Change

4.c.i Buildings and infrastructure

As per activity C.2.1 of the rolling workplan, the TEC is to explore the use of low carbon materials in buildings, green building codes and green zoning systems that promote energy efficiency and resilience, with a view to support countries in the implementation of their NDCs.

At TEC 29, TEC agreed to develop two knowledge products under this activity, the first – "Deploying Established Climate Technologies and Solutions for Buildings and Infrastructure" to be developed in 2025 and second - "Leveraging Data to Accelerate Financing for Climate Technologies in Buildings and Infrastructure" in 2026.
(Shorthand: "Deployment Policy Brief" and "Financing Policy Brief")

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September 2023 TEC 27

Engagement with relevant partners, initiatives and processes to identify areas

April 2024

TEC 28

Agreement on the lead partners

September 2024

TEC 29

Agreement on outlines for identified topics and areas of focus

April 2025

TEC 30

Present 1 draft of policy brief #1 to TEC and get guidance

September 2025

TEC 31

Present final draft of Policy brief #1; Key messages and Recommendations & 1 draft of Policy brief #2

COP 31

April 2026

TEC 32

Present final draft of the policy #2

September 2026

TEC 33

Agree on the Key messages and recommendations to COP 32

COP 32

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Deploying Established Climate Technologies and Solutions for Buildings and Infrastructure

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September 2024 : TEC 29

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October 2024 – March 2025:

Activity Group solicited community input, including case studies of successful deployment of climate technologies.

Activity Group prepared first draft of Policy Brief #1 with support of relevant partners.

April 2025: TEC 30

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Lead Partners:

- **UN Environment Programme**
- **Global Alliance for Buildings and Construction**
- **Massachusetts Institute of Technology Climate Policy Center**

New Contributing Partner:

- **Solar Impulse Foundation**
- A key partner in the Buildings Breakthrough, launched at COP 28.
- Has developed a Solutions Explorer Platform, with a portfolio of over 1,600 market-ready and cost-effective climate technologies.
- Is developing a Catalogue of Solutions for COP 30 to assist policymakers with incorporating climate technologies into national strategies.

Objectives of both Policy Briefs ("Deployment" and "Financing")

- Promote policy measures, innovative technology practices, and solutions related to sustainable and resilient buildings to support countries in the design and implementation of their NDCs.
- Explore the use of low carbon materials in buildings, green building codes, and green zoning systems that promote energy efficiency and resilience.
- Offer recommendations to policymakers highlighting high-impact, cost-effective, affordable, market-ready technologies and solutions for mitigation and resilience.
- Offer recommendations to policymakers on critical policy, data, and digital solutions necessary to evaluate building sector performance and mobilize financial resources.

Community Input

- A request for information (RFI) was circulated among members of the GlobalABC network, researchers at MIT, and other organizations and individuals.

- The RFI requested technical inputs, case studies, and policy recommendations.

- 13 responses were received by 28 February, 2025.

Community Input

RFI respondents include:

- Ministry of Environment and Climate Change of Brazil
- Ministry of Natural Resources of Canada
- Municipality of Oslo, Norway
- Mexican Chamber of Construction Industry
- UNOPS
- Construction and architectural firms
- NGOs

Established Climate Technologies and Solutions for Buildings

a) Definition and Categories of Climate Technologies

b) Considering Climatic Zones and Levels of Economic Development

c) Building Performance Objectives and Assessments

d) High-Impact, Cost-Effective, Market-Ready Climate Technologies

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Proposed Presentation of Climate Technologies

Technology or Solution	Economic Characteristics	Technical Characteristics	Social Characteristics
Advanced Heat Pumps	**Pros:** **- Energy Cost Savings:** High energy efficiency leads to reduced operational costs over time. **Cons:** - **Upfront Investment:** High initial costs for equipment and installation. - **Maintenance Costs:** Regular maintenance is required to ensure optimal performance.	**Pros:** **- High Efficiency:** Capable of providing both heating and cooling with greater efficiency than traditional systems. - **Climate Adaptability:** Effective even in colder climates. **Cons:** - **Electricity Dependency:** Requires a reliable electricity source, which may impact areas with unstable grids. - **Installation Complexity:** Needs skilled installation and integration into existing systems.	**Pros:** - **Enhanced Comfort:** Improves indoor comfort levels through consistent temperature control. - **Environmental Impact:** Reduces carbon footprint, contributing to environmental sustainability. **Cons:** - **Adoption Barriers:** Upfront costs may deter some users. - **Awareness Needed:** Requires education on proper use and benefits to maximize adoption.

Proposed Presentation of Climate Technologies

Technology or Solution	Economic Characteristics	Technical Characteristics	Social Characteristics
Decentralized Renewable Microgrids	**Pros:** - **Energy Independence:** Reduces reliance on centralized power grids. - **Cost Savings:** Potential for lower energy costs in the long term. **Cons:** - **Capital Expenditure:** High initial costs for setup and infrastructure. - **Economic Viability:** Financial benefits may vary based on scale and usage.	**Pros:** **- Resilience:** Enhances energy security and reliability, especially in remote areas. - **Flexibility:** Can integrate various renewable energy sources. **Cons:** - **Technical Complexity:** Requires sophisticated management and control systems. - **Maintenance Needs:** Ongoing technical support is essential to ensure performance.	**Pros:** - **Sustainability Promotion:** Encourages a shift towards renewable energy sources. **Cons:** - **Aesthetic Concerns:** Visual impact may be a concern for some communities. - **Noise Issues:** Wind turbines may generate noise, affecting nearby residents..

Technology Enabling Environments & Policy Opportunities

a) Institutional Measures to Facilitate Climate Technology Deployment

b) Capacity Needs for Climate Technology Deployment

c) Financing Mechanisms and Instruments for Scaling Climate Technologies

d) Challenges and Risks to the Deployment of Climate Technology

e) Social and Equity Considerations in Technology Deployment

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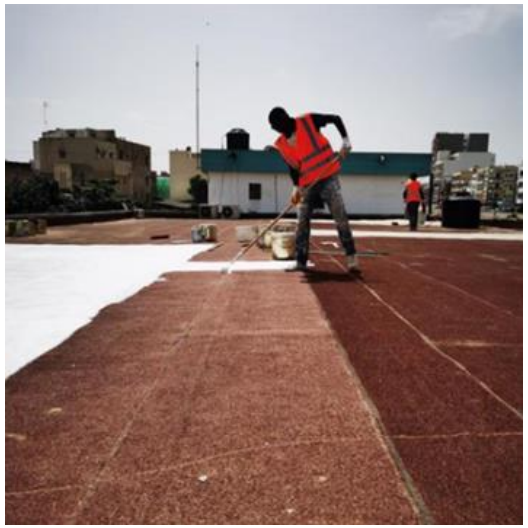
Proposed Presentation of Case Studies

Climate Technology	Reflective roofing materials
Location & Year	Dakar, Senegal; 2019
Climatic Zone	Semi-Arid
Level of Economic Development	Developing, Low-income
Brief Description	– Reflective coatings were applied to over 200 rooftops in Dakar. – Deployment of this technology did not require additional training for the local workforce.
Impacts	– Reduces indoor air temperatures and improves thermal comfort – Reduces energy consumption – Reduces heat-related health risks
Technology Enabling Environment	– Government investment in demonstration projects on public buildings – Public awareness campaign – Local materials – Combined financial support from local government and international climate funds
Reference(s)	Solar Impulse Foundation Blueprint for a Solutions Deployment Platform



Input from TEC 30

- Do you have suggestions for changes to the content of the first draft?
- Do you have suggestions for changes to the presentation of the content in the first draft?
- Do you have additional information (technical resources or case studies) you would like to share with the partners for potential inclusion in the policy brief?
- Other suggestions?

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Thank you

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