



SUMMARY REPORT

Global Cooling Pledge Assembly 2026

15-18 September 2026, Singapore

PUBLISHED

October 2026

PREPARED BY

UNEP Cool Coalition Secretariat

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The Assembly at a Glance

DATES

15–18 September 2026

LOCATION

Singapore

CO-HOSTS

United Nations Environment Programme (UNEP) Cool Coalition and the Ministry of Sustainability and the Environment, Government of Singapore

KEY FIGURES

47

Signatory countries

60

Countries represented

55

EPIC requests

13

Subnational actors

81

Partner organizations

A FOUR-DAY JOURNEY

Day 1

Established science and identified regional, country and city barriers and needs

Day 2

Examined what works, what enables scale, and who can contribute and how

Days 3 and 4

Focused on co-designing the implementation workplan, drawing on the discussions from the first two days

Day 4

Consolidated the Assembly's conclusions into the workplan, chair summary and outcome statement

**NEXT
COP31**



Executive summary

PURPOSE AND CONTEXT

The Global Cooling Pledge Assembly 2026 was held in Singapore from 15 to 18 September 2026, hosted by the Government of Singapore and the United Nations Environment Programme (UNEP) Cool Coalition. The Assembly brought together more than 230 delegates from governments, subnational authorities, international organizations, financial institutions, industry, philanthropy, civil society, academia and other partners to co-design the thematic areas of action needed for scaling up solutions on heat resilience and sustainable cooling.

With the Pledge community continuing to grow, attention is increasingly turning towards implementation: translating national commitments into policies, investment plans, projects and action on the ground. Across the Assembly, participants explored how governments and partners can work together to address rising heat exposure, growing cooling needs and the climate impacts of cooling through coordinated action.

The Assembly advanced the development of the **IGCC Workplan 2027-2028**, informed by engagement with the 76 Pledge signatories, participating non-signatory countries and more than 55 country requests submitted through UNEP's Enabling Pledge Implementation for Cooling (EPIC) Facility. Under final review with countries and partners, the Workplan is intended to provide a demand-driven framework for cooperation, implementation support and the mobilization of technical and financial resources, with endorsement to be sought at COP31.

A key outcome was a clearer approach to connecting the different elements of the cooling and heat resilience agenda. The proposed **Heat Resilience Roadmap for a Warming World**, targeted for COP32, will provide a country-informed framework for assessing risks, identifying priorities, evaluating solutions and sequencing investments. The IGCC Workplan will help translate these priorities into action through national planning, market transformation, implementation partnerships and finance. The Assembly also advanced new mechanisms for collaboration between governments and manufacturers, alongside initiatives to strengthen city-level action and investment in heat resilience.

A central message emerged throughout the Assembly: **heat resilience and sustainable cooling need to be addressed together**. This means reducing exposure to extreme heat, strengthening the resilience of people, communities and critical systems, and ensuring that growing cooling needs can be met sustainably and affordably.

Read the [Singapore Assembly Outcome Document here](#).

HEADLINE OUTCOMES

- 01 The Global Cooling Pledge community continued to grow and strengthen.**
 The Assembly welcomed new signatories, bringing the total number of Pledge signatories to 76, alongside new government and philanthropic support for implementation. Participants also expressed interest in maintaining the Assembly as a recurring platform for political dialogue, peer learning, partnerships and implementation.
- 02 The Assembly strengthened the shared agenda on heat resilience and sustainable cooling.**
 Participants recognized extreme heat as a cross-cutting development and resilience challenge affecting health, livelihoods, food and water security, infrastructure, energy systems and economic stability. The Assembly highlighted the role of cities and regions and called for coordinated action across national and subnational levels and across sectors.
- 03 The IGCC deliberated on the Workplan 2027-2028 as a framework for cooperation.**
 The Assembly welcomed the proposed IGCC Workplan 2027-2028 as a framework for knowledge exchange, collaboration, implementation support and mobilization of technical and financial resources. The Workplan is intended to provide a flexible, demand-driven basis for cooperation among participating countries and partners.
- 04 Implementation support moved closer to country priorities.**
 More than 55 country-led requests had been submitted through the EPIC Facility, covering areas including National Cooling Action Plans, investment roadmaps, passive cooling, building codes, minimum energy performance standards, district cooling, cold chains, demand flexibility and renewable energy integration. The Assembly also welcomed sustained Country Dialogues as a mechanism for translating national priorities into cross-ministerial workplans.
- 05 New initiatives and partnerships expanded the implementation ecosystem.**
 The Assembly saw the launch or advancement of mechanisms and projects to support delivery, including the Manufacturing Platform and the Nature for Cooling Challenge. These initiatives bring together governments, manufacturers, technical partners and financial institutions around specific implementation needs.
- 06 City and regional action on extreme heat gained further momentum.**
 The Beat the Heat implementation drive continued to expand city and regional engagement, including work on heat-risk assessment, heat action planning, passive and nature-based cooling, financing heat resilience and associated training. The Assembly also highlighted the importance of cities and regions as key actors in delivering heat resilience and sustainable cooling.
- 07 The Assembly strengthened links with the wider climate and development agenda.**
 Participants called for continued coordination with complementary international processes and mechanisms, including the Montreal Protocol and its Kigali Amendment and Multilateral Fund, and encouraged countries and partners to carry experience and evidence forward to COP31, COP32 and the second Global Stocktake. The COP Troika's continued focus on heat resilience and sustainable cooling was also welcomed.

STATE OF PLAY FOLLOWING THE ASSEMBLY: FIVE ACTION AREAS FOR COLLECTIVE ACTION

The Singapore Assembly advanced a shared direction for moving from political commitments towards coordinated, country-led implementation. Through exchanges among Pledge signatories, participating non-signatory countries and partners, participants co-created priorities for connecting heat-risk assessment, national planning, market transformation, finance and political engagement. These five action areas provide a framework for continued collaboration under the IGCC Workplan 2027-2028, informed by country priorities and supported by partnerships across governments, subnational authorities, industry, financial institutions, international organizations and other stakeholders.

Action Area 1: Heat Resilience Roadmap for a Warming World: A Decision Framework

Countries and partners will contribute to the development of a Heat Resilience Roadmap for a Warming World, targeted for COP32. The Roadmap is envisaged as a science-based, country-informed framework to help governments assess heat risks, identify priorities, evaluate solutions and sequence investments according to their national circumstances. It will connect existing plans, commitments and delivery mechanisms around three outcomes: thermal safety, resilience of people and critical systems, and climate-compatible delivery.

Action Area 2: National Cooling Plans and Investment Assessments

Countries and partners will work to strengthen national cooling planning and connect policy priorities with investment needs. This includes developing National Cooling Action Plans (NCAPs), integrating cooling and heat resilience into Nationally Determined Contributions (NDCs), National Adaptation Plans (NAPs) and related frameworks, and linking national priorities with subnational action where relevant. Country Dialogues, regional and South-South exchanges will support coordination across ministries, help identify implementation gaps and build pipelines of investable solutions.

Action Area 3: Market Transformation and Deployment

Participants highlighted the need to accelerate the adoption and deployment of efficient, climate-friendly cooling technologies and systems, passive and nature-based solutions, and sustainable cold chains. Collaboration among governments, manufacturers, cities, technical partners and financial institutions will be central to connecting policy measures, industry commitments and local implementation. Initiatives such as the Manufacturing Platform and Beat the Heat can help advance matchmaking and deployment, standards, procurement, demonstration projects and the wider uptake of proven solutions.

Action Area 4. Finance and Investment

Mobilizing finance and investment is essential to translating country priorities into implementation at scale. Countries and partners will explore ways to strengthen project preparation, develop finance-ready pipelines and connect priority interventions with public and private financing. Collaboration with development banks, financial institutions, industry and technical partners can help advance approaches such as blended finance, sustainable procurement, Cooling-as-a-Service and Article 6 cooperation, where appropriate. Financial assessment frameworks and implementation facilities, including the EPIC Facility, can support this effort.

Action Area 5. Declaration: Political Signal and Shared Science-based Ambition

The *Political Declaration on Heat Resilience in a Warming World*, advanced by the Pledge co-chairs Brazil and the United Arab Emirates, provides an opportunity to sustain political momentum and build shared ambition towards COP31 and COP32. Countries and partners will also continue exploring how extreme heat and sustainable cooling can be more fully reflected in international climate processes, including the second Global Stocktake. Regional engagement and capacity-building for negotiators and government officials will help strengthen the evidence base and broaden understanding of the connections between heat resilience, sustainable cooling and climate action.

Voices from the Assembly and High-Level Segments



H.E. Grace Fu Hai Yien

Minister for Sustainability and the Environment, Singapore

"At a time of geopolitical tension and shifting global priorities, international cooperation on cooling matters more, not less. Now is the time to turn the Global Cooling Pledge into action."

Martin Krause

Director, Climate Change Division, UNEP

"We did not come to Singapore to admire the problem—we came to move. Over these four days, you all, Countries, Cities, Partners and Industry have shown that we can move together."



H.E. Adalberto Maluf

National Secretary for Urban Environment, Water, Resources and Environmental Quality, Ministry of Environment and Climate Change, Brazil and Co-Chair, IGCC

"We have moved from pledges and commitments to implementation. Now we must unlock markets, finance and national action—because governments cannot deliver global cooling alone; the private sector and financial world must be part of the solution."

H.E. Eng. Sharif Al Olama

Undersecretary for the Energy and Petroleum Sector, Ministry of Energy and Infrastructure, UAE

"We already have many of the technologies, we already have many of the solutions. What we need now is to scale them, finance them, and make them accessible. And sustainable cooling must be at the heart of this effort."





Dong Mingzhu

Chairwoman, GREE Electric Appliances

"For the past 30 years, GREE Electric has stayed on one mission: product innovation. For a manufacturer, profitability is definitely our goal, but it's not the only goal. I think the true value for a company to exist is to make people's lives better."

Ishikawa Hiroshi

Ambassador Extraordinary and Plenipotentiary of Japan to Singapore

"Through cooperation across borders and sectors, I am confident that we can build societies resilient to extreme heat, protecting the most vulnerable and ensuring sustainable prosperity for all."



Jakob Brix Tange

Ambassador of Denmark to Singapore

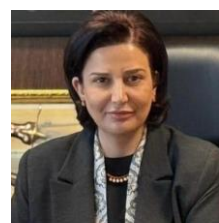
"The objective is not only to produce cooling efficiently. It is to make better use of existing energy, water and infrastructure, while supporting the continued growth of cities and businesses. When energy must be used, we should use it as efficiently as possible, recover what would otherwise be wasted and connect the different parts of the energy system."

Denmark's contribution to this agenda is rooted in decades of experience with energy efficiency, district energy and integrated energy planning."

Banu Aslan

Director General of Professional Services at the Ministry of Environment, Urbanization, and Climate Change, COP31 Türkiye Presidency

"Our objective is to translate climate ambition into concrete, measurable and investable action through strong partnerships and practical initiatives."





Somayyah Alyammahi

Director of Productivity and Demand Department, Ministry of Energy and Infrastructure, UAE and Co-Chair, IGCC

"Cooling is an opportunity to build cities designed with the sun in mind. No government, however powerful, can cool the world alone, we need collective action."

Melvyn Ong

Permanent Secretary, Ministry for Sustainability and the Environment, Singapore

"Cooling is no longer just about air-conditioning, it is about how we design our cities, buildings and communities for a hotter world. Energy efficiency and heat resilience must be at the heart of this transition."



Anton Jayakody

Deputy Minister of Environment, Sri Lanka

"Heat resilience requires moving beyond conventional energy-intensive cooling. Sri Lanka is prioritizing a National Cooling Policy that champions passive cooling and sustainable architectural solutions to maintain livable indoor climates naturally while curbing emissions."

Amit Proti

Director General, Coalition for Disaster Resilient Infrastructure

"When we look at heat stress, we need to put the lens of development on it. The heat risk of tomorrow is not the heat risk of yesterday, and as we make decisions on infrastructure, we really need to start factoring that understanding of risk in."



Boon Hoeng Ng

Executive Director and Chief Executive Officer, Temasek Foundation

"Today's challenges are just too complex for any one organization to handle alone. So today we speak about not just collaboration, but co-creation. Collaboration may mean that we put our name on the signature, but co-creation means active listening, participating, inviting people together and co-designing the projects together."

Expert Panel Discussion

EXTREME HEAT & SUSTAINABLE COOLING: EVIDENCE-BASED DECISION MAKING

FACILITATOR	Ms. Lily Riahi Head of the Cooling, Buildings and Energy Unit and Head of the Cool Coalition, UNEP
SPEAKERS	Dr Winston Chow Co-Chair, IPCC Working Group II Dr Jason Lee Director, Heat Resilience & Performance Centre, NUS Dr Eleni Myrivili Global Chief Heat Officer, UNEP Dr Omar Abdelaziz Associate Professor, American University in Cairo Ms. Andrea Voigt VP Public & Industry Affairs, Danfoss Mr. Noah Horowitz Senior Director, Clean Cooling Collaborative
COUNTRY INTERVENTIONS	Ghana, India, Nigeria, Saint Lucia, Singapore, Sri Lanka, United Kingdom
PARTNER ORGANIZATION INTERVENTIONS	Heat Resilience & Performance Centre, NUS; Danfoss; Clean Cooling Collaborative

DISCUSSION SUMMARY

The plenary examined the growing intersection between extreme heat and rising cooling demand, and what this means for health, livelihoods, energy systems and vulnerable populations. It focused on how scientific evidence can guide policy and investment, while addressing the need to scale sustainable cooling and heat resilience together. The discussion also considered emerging pressures from rapid urbanization, AI and data centers, and the need for a more coherent framework linking heat resilience, equitable access to cooling and sustainable energy use.

Ms. Lily Riahi of UNEP opened by framing extreme heat and sustainable cooling as one resilience agenda. Heat is increasingly affecting health, livelihoods, cities and critical systems, while growing cooling demand has major implications for energy systems and emissions. Solutions already exist, but the central challenge is bringing them together and delivering them at the scale and speed required.

Dr. Winston Chow highlighted the increasing frequency and intensity of heat extremes and the risks still being underestimated, including unequal exposure, cascading and compound impacts, and the limits of adaptation. Jason Lee stressed that heat impacts depend heavily on vulnerability and access to protection, while Eleni Myrivili argued that thermal safety should be treated as an outcome rather than cooling as an end.

Dr. Omar Abdelaziz described the parallel challenge of rapidly rising cooling demand and persistent lack of access, calling for passive and low-energy measures before meeting remaining demand with efficient mechanical cooling.

The discussion then turned to decision making and implementation. **Dr. Winston Chow** called for governments to quantify both heat risk and the value of interventions, while **Dr. Jason Lee** stressed linking heat action to priorities such as health, productivity and worker safety. Dr, Omar Abdelaziz emphasized mapping cooling needs, considering lifecycle costs and planning cooling alongside electricity systems.

Industry perspectives focused on the conditions needed for scale. **Ms. Andrea Voigt** of Danfoss stressed predictable, long-term policy and integrated infrastructure planning, including for rapidly growing data-center demand. **Mr. Noah Horowitz** of the Clean Cooling Collaborative called for stronger efficiency standards, procurement and aggregated demand, alongside greater MDB involvement and better alignment of adaptation, health and mitigation finance.

Participating country interventions from **India, Nigeria, Saint Lucia, Ghana and Sri Lanka** reinforced challenges around affordability, access, finance, limited monitoring capacity and locally appropriate solutions. The panel emphasized implementable NCAPs, earlier engagement of financial institutions, community participation and stronger coordination across levels of government. **Dr. Eleni Myrivili** closed by presenting the Heat Resilience Roadmap for a Warming World, structured around Thermal Safety Access and Heat Resilience Capacity and intended to connect currently fragmented action across sectors.



KEY RECOMMENDATIONS AND TAKEAWAYS

- 01 Treat extreme heat and sustainable cooling as one resilience agenda, under a common framework.**
Heat affects health, livelihoods, buildings, energy systems and infrastructure simultaneously, so governance and investment frameworks should integrate adaptation, cooling and mitigation rather than address them in separate silos. The proposed Heat Resilience Roadmap offers a common architecture around Thermal Safety Access and Heat Resilience Capacity, connecting currently fragmented action across sectors, while allowing countries to set priorities according to national circumstances.
- 02 Quantify heat risk and the value of action, using locally informed evidence.**
National and subnational governments need locally relevant data on exposure, vulnerability, losses and damages, alongside evidence of the health, economic and resilience benefits of interventions. Heat-risk assessment and response should reflect local exposure, vulnerability and climatic conditions, recognizing that data and monitoring capacity vary significantly across countries and communities. Adaptation measures should also be stress-tested against future warming to determine whether they will remain effective.
- 03 Ensure equitable access to thermal safety through solutions designed for local climates and communities.**
Cooling policy should protect those most vulnerable to extreme heat and address affordability, efficiency and access together, so that thermal safety does not depend solely on the ability to pay. National policy can set direction, but passive cooling, traditional building approaches and other heat-resilience measures need to reflect regional and microclimatic conditions, and frontline communities should participate in designing the solutions intended to protect them.
- 04 Reduce cooling loads first and plan cooling together with energy and infrastructure.**
Reduce loads through passive and nature-based measures, use low-energy options where appropriate, and meet remaining demand with efficient equipment and environmentally preferable technologies. Rapid cooling growth will affect household electricity costs, peak demand and future investment in generation and networks, so cooling demand, efficient equipment, demand response and energy infrastructure need to be considered together.
- 05 Build the economic and development case and give industry predictable policy and clear market signals.**
Link heat resilience and sustainable cooling to health, productivity, worker safety, education and economic performance, as these wider benefits can strengthen the case for government and private-sector investment. Industry needs stable, long-term frameworks in which to invest. Procurement, incentives, minimum efficiency standards and aggregated demand can create markets for more efficient cooling, while harmonized standards can reduce fragmentation and help prevent inefficient equipment from being dumped into weaker markets.

06 Turn NCAP and NDC commitments into bankable interventions by connecting existing institutions and funding streams.

Financial institutions should be involved earlier in planning, so that countries can prioritize interventions by impact, cost and expected returns, and international financing processes need to respond more quickly to a heat emergency already affecting health, agriculture, livelihoods and essential systems. Heat and cooling finance currently sits across adaptation, resilience, health and mitigation. Existing mechanisms, including the Montreal Protocol community, the Cool Coalition, governments, financial institutions and philanthropy, should be connected around common outcomes and implementation, and not through new silos.

KEY OUTCOMES AND FOLLOW UPS

- **A unified understanding among Assembly participants** of the critical scientific realities driving the need for an urgent response that tackles both heat resilience and sustainable cooling action.
- **A common understanding** that extreme heat is an economic, health, infrastructure and development challenge, not just an environmental one, and that cooling demand will grow dramatically.
- **Existing heat and cooling approaches are fragmented** and there is a need for a common framework that connects heat resilience and sustainable cooling: a Roadmap to guide action.

Cool Leaders' Awards Ceremony

FACILITATOR

Mr. Graeme Maidment, Professor, Heating and Cooling, London South Bank University;
Executive Committee Member, UNEP Cool Coalition

SPEAKERS

Mr. Martin Krause, Director, Climate Change Division, UNEP

H. E. Adalberto Maluf, National Secretary for Urban Environment, Water Resources and
Environmental Quality, Ministry of Environment and Climate Change, Brazil

H.E. Grace Fu, Minister for Sustainability and the Environment, Singapore

H.E. Eng. Sharif al Olama, Undersecretary for Energy and Petroleum Sector, Ministry of
Energy and Infrastructure, United Arab Emirates (UAE)

Ms. Dong Mingzhu, Chairwoman, GREE Electric Appliances

DISCUSSION SUMMARY

The inaugural Cool Leaders ceremony launched the Cool Coalition's global recognition initiative for leadership advancing sustainable cooling and extreme heat resilience. The initiative is designed to make effective leadership more visible, encourage replication of successful approaches and strengthen momentum around implementation of the Global Cooling Pledge. DED Briefing Urban Day 2026

Three inaugural recognitions highlighted different dimensions of leadership:

- **Singapore** was recognized for its holistic approach bringing sustainable cooling and heat resilience together, including the establishment of a dedicated Heat Resilience Office.
- **The United Arab Emirates** was recognized for leadership through the Global Cooling Pledge, connecting emissions reduction, access to cooling and implementation, including through district cooling.
- **Ms. Dong Mingzhu** was recognized individually for a lifetime of leadership in innovation and sustainable cooling, including technology and manufacturing transformation.



The recognition ceremony was followed by a moderated fireside conversation focused on the leadership choices behind implementation, how sustainable cooling and heat resilience can be addressed together, and the changes leaders want to see achieved over the coming decade. Brazil connected the discussion to the wider transition from global commitments to implementation and the journey from COP30 towards COP31 and 2030.

KEY RECOMMENDATIONS AND TAKEAWAYS

- 01 Leadership must translate ambition into delivery.** Cool Leaders is intended to elevate examples where policy, technology, partnerships and implementation are already producing measurable progress.
- 02 Cooling and heat resilience need to be addressed together.** Sustainable cooling requires a combination of energy efficiency, passive and nature-based solutions, urban planning, technology and enabling policy.
- 03 Successful approaches should be replicated and scaled.** The recognized leaders demonstrate different pathways across government policy, heat resilience, district cooling, technology and industry transformation.
- 04 Leadership is also about influence.** Recognized Cool Leaders serve for one year and are expected to engage peers, amplify implementation examples and encourage wider uptake of sustainable cooling action.

KEY OUTCOMES AND FOLLOW UPS

- Singapore, the United Arab Emirates and Ms. Dong Mingzhu were announced as the inaugural Cool Leaders for 2026–2027. **H.E. Grace Fu** received the recognition for Singapore; **H.E. Eng. Sharif Al Olama** accepted the UAE recognition **on behalf of H.E. Suhail Mohamed Al Mazrouei**; and **Ms. Dong Mingzhu** received the individual recognition.
- The ceremony formally established Cool Leaders as a recurring Cool Coalition recognition platform, designed to raise the political and public profile of sustainable cooling and extreme heat resilience and generate further action around the Global Cooling Pledge.
- The inaugural recognitions demonstrated three complementary forms of leadership: government action on heat resilience and sustainable cooling; national policy and implementation of the Global Cooling Pledge; and individual leadership in innovation and technology transformation.
- The ceremony generated substantial visibility for sustainable cooling leadership, including media coverage of Singapore's recognition and its heat-resilience and passive-cooling measures. Public reporting highlighted Singapore's planned expansion of cooling centers, investment in heat research and stronger heat-resilience policy.
- The inaugural Cool Leaders will serve for one year, engaging peers, amplifying implementation examples and supporting wider uptake of sustainable cooling action.
- Due to heightened interest and to better reflect the full ecosystem of sustainable cooling actors, the 2027–2028 cycle will expand to four categories:
 - National
 - Subnational
 - Industry, linked to the Manufacturing Platform
 - Civil society / Academia / Youth
- The next Cool Leaders will be selected in the first half of 2027.
- The independent Evaluation Committee will remain in place for the next cycle, providing continuity to the selection process.

Regional Perspectives

AFRICA REGIONAL DIALOGUE

FACILITATOR	Mr. Graeme Maidment , Professor, Heating and Cooling, London South Bank University; Executive Committee Member, UNEP Cool Coalition
SPEAKERS	Mr. Patrick Blake , Programme Manager, UNEP-U4E Mr. Michael Ivenso , Director, National Council on Climate Change, Nigeria Mr. Hubert Nsoh Zan , Manager, Energy Efficiency Regulation, Energy Commission, Ghana Mr. Elie Mansour , Project Manager, National Ozone Unit, Lebanon Mr. Anderson Moreira do Vale Alves , Senior Technical Advisor on Cooling, UNDP Ms. Matilda Lenartowicz , Senior Officer, Sustainable Cooling and Energy Efficiency, SEforALL Ms. Somayyah Al Yammahi , Director of Productivity and Demand Department, UAE Ms. Sarah Robinson , International Innovation Lead – Buildings and Cooling, UK Mr. Alain Wilmart , Directorate-General Environment, Ozone Layer and Fluor Gases Policy, Climate Change Department, Belgium
COUNTRY INTERVENTIONS	Belgium, Burkina Faso, Chad, Comoros, Côte d'Ivoire, Eswatini, Ethiopia, The Gambia, Ghana, Kenya, Lebanon, Madagascar, Mauritius, Nigeria, Seychelles, Somalia, South Sudan, Togo, Tunisia, United Arab Emirates, United Kingdom, Zimbabwe
PARTNER ORGANIZATION INTERVENTIONS	UNDP, Sustainable Energy for All (SEforALL), coolup Programme/Guidehouse, Regional Center for Renewable Energy and Energy Efficiency (RCREEE), World Bank Group, IRENA

DISCUSSION SUMMARY

The Africa Regional Dialogue brought together African Pledge signatories, regional centers and partners to review progress on implementation. The discussion focused on three strategic areas: national and multilevel cooling action, market transformation for efficient and climate-friendly cooling, and mobilizing finance and investment.

Patrick Blake of UNEP-U4E opened by highlighting the large savings available from efficient cooling in Africa. As air-conditioner ownership grows, countries must set standards now to avoid locking in inefficient equipment. He pointed to regional harmonization of energy performance standards in East and Southern Africa, which also covers refrigerants, while noting that West Africa's 2017 standards need updating. Participants from Lagos and Kenya added that stable power supply is a precondition for cooling, and that cooling needs vary by location.

Hubert Nsoh Zan Ghana opened the country segment on the importance of collaboration between the energy, climate and ozone institutions. A panel discussion with **Michael Ivenso** of Nigeria and **Elie Mansour** of Lebanon followed.

Michael Ivenso described the challenge of cascading national plans to states in a federal system. He argued that cooling is no longer a technology solution, but a governance issue centered on people who cannot adapt on their own. Hubert Nsoh Zan stressed that cooling has become a necessity rather than a luxury and that Africa is boiling. That shift is driving households towards cheap, inefficient appliances, which Ghana is countering with standards for 19 appliances and 0% interest instalment plans. **Elie Mansour** explained that Lebanon's cooling plan already includes a detailed financing architecture. The real obstacle, he said, is an economy crippled since 2019, where refugees and poverty crowd heat off the agenda.



UNDP urged countries to use shrinking donor funds as seed money for bankable projects. **SEforALL** presented data tools and a new fund for results-based financing, with a pilot likely in West Africa. The UAE shared its district cooling and demand-side management work. The UK described how a cross-government working group raised cooling on ministers' agendas. Belgium emphasized predictable regulation and enforcement against illegal refrigerant trade and equipment dumping.

Breakout Discussions

Group 1: National and Multi-level Cooling Action. This group was facilitated by the Cool Up Programme, with participants from the UK, Belgium, Chad, Zimbabwe, The Gambia, Madagascar, Burkina Faso, Eswatini and RCREEE. It explored how countries can coordinate cooling across institutions and levels of government. The UK explained that, without a formal cooling plan, a cross-government working group and a UK Cooling Outlook had raised cooling on ministers' agendas, using the Pledge commitments as leverage. Chad and Zimbabwe described how cooling responsibilities are split across different ministries and focal points, and Zimbabwe suggested grouping countries by region or development level so those with common priorities can plan together. RCREEE presented its regional methodology for national cooling action plans, now being applied in Morocco and Djibouti, and its regional expert working group. The Gambia shared its technical working group, which developed energy performance standards, and its university-based centre of excellence for training technicians. Belgium noted that heat has never been treated as a policy problem in its own right in Europe, which makes it hard to get onto the agenda, and the group asked whether countries might eventually need a "Ministry of Cooling". The group reported back five priorities: cross-ministerial coordination under a clear lead entity, identifying key stakeholders, better baseline data on heat deaths, productivity and energy use, dedicated cooling programmes or centres of excellence to keep cooling in the spotlight and awareness programmes.

Group 2: Market Transformation. This group was facilitated by U4E and SEforALL, with participants from Ghana, Nigeria, Tunisia, South Sudan, Eswatini and Mauritius. It focused on which policy levers would best scale efficient and passive cooling. Participants argued that energy performance standards should be combined with limits on refrigerant warming potential so the two reinforce each other and harmonised regionally. They also saw public procurement as a powerful

way to create early demand for efficient equipment ahead of regulation. The group stressed looking beyond appliance standards to the whole building, from passive architectural design and building energy codes to construction materials and operation, and to building municipal capacity to enforce green building codes locally. Further proposals included removing tariffs on and offering tax incentives for sustainable cooling technologies, improving technical capacity, and strengthening enforcement.

Group 3: Mobilising Finance and Investment. This group was facilitated by the World Bank Group, with participants from Lebanon, Seychelles, Ethiopia, Comoros, Belgium, IRENA, UNDP and London South Bank University. It examined the main barriers to financing sustainable cooling. Seychelles described difficult and lengthy funding applications, limited capacity in small countries and political instability. Ethiopia pointed to the lack of a national cooling plan, weak monitoring and auditing, difficulty tracking climate finance, and banks' reluctance to take on climate risk. Comoros cited gaps in data and technical capacity. IRENA urged countries to green their electricity supply alongside their cooling, and Lebanon noted that blended finance or currency-risk backing from government would have helped its private-sector-led market. Belgium argued that harmonised standards create larger markets that industry can serve. A participant also cited Tunisia, where on-bill financing helped consumers buy higher-efficiency equipment. The group concluded that unlocking investment requires capacity building, larger and more harmonised markets, stable and predictable policies, and more accessible finance. It also concluded that the sector must show investors where the value lies in cooling.

KEY RECOMMENDATIONS AND TAKEAWAYS

- 01 Coordinate across ministries and levels of government.** Cooling cuts across energy, environment, climate, health and urban planning, so countries need one lead entity and a regular working-level mechanism, as in Ghana, Nigeria and the UK. National cooling action plans should then cascade to states and cities with capacity and funding attached, supported by peer learning from front-runners.
- 02 Set standards before demand grows.** Air-conditioner ownership in Africa is low but rising fast. Countries should adopt energy performance standards now, covering both efficiency and refrigerants, to avoid locking in inefficient equipment. Standards should be harmonized regionally for scale while allowing faster national action and backed by enforcement against illegal refrigerants and dumping.
- 03 Make efficient cooling affordable.** Households focus on purchase price rather than running costs. Instruments such as 0% instalment plans, rebates and on-bill financing help break the upfront cost barrier.
- 04 Tailor priorities to context.** Needs differ, from cold chains for agriculture to space cooling. Grouping countries by region or development level can help those with common interests plan together.
- 05 Improve data and awareness.** Baselines on heat deaths, productivity losses, energy use and emissions strengthen the case to ministers and investors. Dedicated cooling plans or centers of excellence keep cooling in the spotlight.

- 06 Turn plans into bankable projects.** Finance is the biggest bottleneck, especially for small and crisis-affected countries. Remaining donor and Montreal Protocol funds should be used as seed money. Countries also need stronger skills in project structuring and climate-finance tracking, stable policies, and a clear case for where value lies in cooling.

KEY OUTCOMES AND FOLLOW UPS

- **Cooling in Africa was framed as a necessity rather than a luxury, and as a governance and access challenge rather than a technology one.** Solutions must reach the majority of people who cannot adapt on their own, and depend on reliable, clean electricity.
- **Cross-ministerial coordination under a clear lead entity was identified as the first priority,** with national cooling action plans cascading to states and cities. The UK's cross-government working group and RCREEE's regional planning methodology were offered as models others can adapt.
- **The session agreed that energy performance standards covering both efficiency and refrigerants must be in place before air-conditioning demand surges.** They should be harmonised regionally to create larger markets, and backed by public procurement, incentives, building codes and enforcement against dumping.
- **Better baseline data on heat deaths, productivity losses and energy use** was positioned as essential to raise cooling on political agendas, alongside dedicated cooling plans or centres of excellence to keep it in the spotlight.
- **Finance was identified as the main bottleneck.** The way forward is to use remaining donor and Montreal Protocol funds as seed money for bankable project pipelines, supported by climate-finance capacity, stable policies and new instruments such as SEforALL's Cool Finance Fund and the African Energy Efficiency Facility.

ASIA-PACIFIC REGIONAL DIALOGUE

FACILITATOR	Mr. Hongpeng Lei , Chief, Mitigation Branch, CCD, UNEP
SPEAKERS AND FACILITATORS	Mr. Calvin Chong, Divisional Director, Energy and Climate Policy, Ministry of Sustainability and the Environment, Singapore H.E. Pak Sokharavuth, Under Secretary of State, Ministry of Environment, Cambodia H.E. Dr. Chhan Sophal, MLMUPC, Cambodia Ms. Claire Oei, Climate and Nature Lead at the Philanthropy Asia Alliance (PAA) Mr. Gennai Kamata, Associate Programme Officer, Buildings and Urban Energy, UNEP Ms. Lana Rose A. Manaligod, Assistant Director, Department of Energy, Philippines Ms. Lily Riahi, Head of Unit, Buildings and Cooling, UNEP Ms. Lubna Yasmine, Joint Secretary (Planning), Ministry of Environment, Forest and Climate Change, Bangladesh Mr. Mark Low, Director of Design Strategy and Climate & Sustainability, lead at ISI Land, ISI Group Developer Ms. Miruza Mohamed, Deputy Director General, Ministry of Climate Change, Environment and Energy, Maldives Mr. Shaun Seow, CEO, Philanthropy Asia Alliance (PAA)
COUNTRY INTERVENTIONS	Bangladesh, Bhutan, Brunei Darussalam, Cambodia, Fiji, Indonesia, India, Kiribati, Laos, Maldives, Micronesia, Mongolia, Nepal, Pakistan, Philippines, Singapore, Solomon Islands, Sri Lanka, Timor Leste, Vietnam,
PARTNER ORGANIZATION INTERVENTIONS	World Bank Group, Philanthropy Asia Alliance (PAA), Cool Coalition Secretariat, ASEAN Centre for Energy (ACE), Cities Climate Finance Leadership Alliance (CCFLA), Alliance for an Energy Efficient Economy (AEEE)

DISCUSSION SUMMARY

The session explored how to move from national ambition to delivery through public-private-philanthropic partnerships, with philanthropy playing an early, risk-absorbing role. Country challenge briefs from the Philippines, Bangladesh and the Maldives guided the Delivery Lab breakouts, which sought to identify partnerships, interventions ready to scale and the points where catalytic finance has most impact. The outputs are intended to inform the IGCC discussions and the next phase of implementation.

In opening remarks, **Mr. Calvin Chong**, Divisional Director, Energy and Climate Policy, Ministry of Sustainability and the Environment, Singapore, placed heat alongside sea-level rise, public health and city infrastructure as a wider risk. It noted that about 75% of Asia-Pacific workers were exposed to excessive heat in 2020 and that about 500,000 heat-related deaths occur annually, 45% of them in Asia. It described government as providing leadership, policy direction and enabling frameworks, the private sector as bringing innovation, and philanthropy as bringing convening power, research

and pilots. **Mr. Shaun Seow**, CEO, Philanthropy Asia Alliance (PAA), stated that heat is now a permanent operating condition and that the gap is delivery at pace and scale, not a lack of solutions. **Ms. Lily Riahi**, Head of Unit, Buildings and Cooling, UNEP, Cool Coalition added that policy alone is insufficient: philanthropy can provide patient, flexible catalytic capital, while communities, ngos and partners bring delivery capacity. The EPIC Facility is intended to address the gap between country-identified barriers in finance, policy, technology and delivery capacity.

H.E. Pak Sokharavuth, H.E. Dr. Chhan Sopha, and Mr. Mark Low presented the Cambodia case study, as the first country to pilot the UNEP Cool Coalition comprehensive methodology, and its NCAP covers building space cooling, cold chain and refrigeration, mobile air conditioning and industrial process cooling. Its implementation model combines demonstration (the Phnom Penh pilot), policy and codes (four documents created or updated, with building regulation upcoming), tools (technology mapping and guidelines) and awareness and capacity building (a National Community of Practice). The pilot achieved a 40% energy reduction for a 3% cost increase, with potential savings of up to 55%. Cambodia reported that 2% of building stock has been retrofitted and 20% of new stock includes passive cooling strategies. The CHILL Project is a 24-month initiative working with households, SMEs, microfinance institutions and government. Bangladesh reported losing about 0.5% of GDP annually to heat, with cooling demand projected to rise by 60%. It has an NCAP, MEPS and star-rating, but faces high conversion costs, expensive low-GWP products, few technicians trained in flammable refrigerants and limited SME access to technology.

Three countries presented their Challenge briefs - **Ms. Lubna Yasmine, Joint Secretary (Planning), Ministry of Environment, Forest and Climate Change, Bangladesh**, asked for support on standards and testing, technology transfer, locally relevant demonstrations and technician training and licensing, and is ready to move to mandatory passive cooling in building codes and technician licensing. **Ms. Lana Rose A. Manaligod, Assistant Director, Department of Energy, Philippines**

Presented a strong institutional base, including 73 approved escos and about 2,274 registered practitioners, and proposed demonstrating integrated passive and efficient mechanical cooling across a small portfolio of public buildings, to inform national and ASEAN guidelines. **Ms. Miruza Mohamed Deputy Director General, Ministry of Climate Change, Environment and Energy, Maldives**, noted that for Maldives, which is land-scarce and dependent on imported fuel (about 10% of GDP), framed efficient cooling as an energy-security issue. It identified voluntary labelling, no passive cooling code, limited capacity, high upfront costs and low awareness of heat as a health risk, and proposed collaboration on a school pilot, finance for efficient retrofits and capacity building.

[Cooling Delivery Labs](#)

ASEAN Cooling Delivery Lab:

The Lab brought together government, regional, technical, financial and philanthropic partners to examine how the ASEAN Passive Cooling Roadmap can move from policy ambition to implementation at scale. Participants stressed integrating passive cooling from the earliest stage of building design, drawing on Cambodia's pilot evidence and modelling of savings of up to 55% with full integration from design. ASEAN has developed a regional roadmap, and, with ACE, a database of technologies suited to regional climates, and participants called for stronger engagement with developers, architects and financial institutions to put these resources to use. The **Philippines** identified technical capacity (building-energy modelling, thermal-envelope and microclimate-responsive design) as its main barrier.

Although the new Government Procurement Act allows long-term economic value to be considered, public agencies still struggle to translate building-performance requirements into specifications. **ACE** noted that these barriers are shared across ASEAN, and participants called for capacity building across the whole delivery chain, institutionalized through universities, professional training and training-of-trainers models. Indonesia stressed adapting approaches to climatic zones, and **Cambodia** emphasized peer learning and domestic training capacity. On finance, **CCFLA** noted that more than 150 project-preparation facilities have been mapped but access is fragmented, so governments struggle to find support and facilities lack sight of national pipelines. Participants called for stronger project preparation, national pipelines of potentially bankable projects and better matchmaking, and the **Philippines** noted that ESCO models could bundle passive measures with active cooling and finance. Public procurement and demonstrations in schools, hospitals and social housing were seen as levers for demand, provided demonstrations use local materials and performance data and are designed for replication. Philanthropy can absorb early risk, but pilots need a route to public budgets or larger pools of capital, and ACE called for programme-scale demonstrations with financial institutions involved from the start.

The group concluded that the priority is to move from discussion to investable demonstrations: using existing technical capacity to validate high-impact solutions, pairing them with financing and de-risking instruments, demonstrating measurable energy and climate benefits, and building a pathway to replication and scale.

Central and South Asia Cooling Delivery Lab:

The State of Uttar Pradesh (India) stated that the refrigerant transition must be globally coordinated to avoid incompatible markets and standards, and that safety and technology maturity matter for R290 and R32. It also noted that solar is not lowering peak load, which makes battery storage important, and suggested bulk procurement to bring down technology prices. **AEEE** observed that India's PMAY affordable-housing scheme lacks technical assistance and climate-responsive design, and saw an opportunity to standardize designs, materials and prefabrication across the Global South. **Pakistan** reported a growing policy base but isolated pilots, with scale, enforcement, monitoring and investment as the challenges. It described a "cooling capacity trap": about 45 GW of capacity is maintained largely for cooling peaks, while only about 2.4 million of 42 million households have air conditioning, at an estimated annual cost of about PKR 100 billion. **Sri Lanka** treated design, orientation, materials and natural ventilation as foundational, and noted its Green Building Code is voluntary and may be made applicable through regulation. **Bangladesh** (industry) highlighted the challenge of low-cost local production capacity. The Cool Coalition suggested pairing renewables with passive cooling strategies, since renewables are readily financed and retrofits are harder to finance.

The group concluded that capacity, the right technology and technology transfer are needed, that finance requires bankability based on data and proven models, and that scale needs continuity supported by finance, coordinated action and harmonized standards.

Small Island Developing States (SIDS) Cooling Delivery Lab:

Fiji reported weak enforcement and voluntary codes, with no current initiative on cooling or heat. **Kiribati** reported weak regulatory implementation under its Energy Act and unclear building codes, and school energy audits confirmed air-conditioning needs, but cost prevents scale-up. **Micronesia** cited low government awareness of heat risk, slow interministerial coordination and no energy act to prevent dumping of inefficient equipment. The **Maldives** noted that cooling lacks a clear mandate and loses out to renewable-energy priorities, even within the same ministries.

The group concluded that cooling has no clear institutional owner, that awareness and political priority are low, and that small pilots are common, but none has been meaningfully scaled, with affordability and delivery at scale as the binding constraints. Philanthropy could help close the gap between governments and beneficiaries, although its usefulness depends on each country's existing delivery systems.

KEY RECOMMENDATIONS AND TAKEAWAYS

- 01 Move from pilots to investable, programme-scale demonstrations.** Design demonstrations from the outset for replication, using local materials, stakeholders and performance data, with financial institutions involved from the beginning and South-South cooperation used to scale proven solutions.
- 02 Use philanthropy for early, patient and catalytic capital and project preparation,** with a clear pathway from pilot to public budgets or larger pools of capital.
- 03 Build bankability.** Use data, proven models and continuity to build national pipelines of bankable projects, with better matchmaking between projects, technical assistance and finance. ESCO models and pairing passive cooling with renewables and efficiency measures can improve financeability.
- 04 Build capacity across the full delivery chain and address finance, standards, capacity and awareness together.** Capacity should be institutionalized through universities, professional training and training-of-trainers models, and supported by awareness of heat as a health risk.
- 05 Harmonize standards and adapt them to local conditions.** Coordinate the refrigerant transition regionally, adapt approaches to climatic zones, and standardize climate-responsive design and materials for affordable housing.
- 06 Clarify institutional ownership and use public demand.** Define ministry leadership on cooling, simplify processes for small states, strengthen enforcement of codes, and use public procurement and public assets (schools, hospitals, social housing) to create demand.

KEY OUTCOMES AND FOLLOW UPS

- The session positioned the **shift from policy to partnerships**, and from isolated pilots to investable, measured demonstrations, as the priority for delivery in the region.
- **Three country challenge briefs were advanced** as concrete entry points for partners: project preparation for the Philippines portfolio of public buildings, finance for efficient retrofits in the Maldives, and locally relevant demonstrations in Bangladesh.
- **Sub-regional breakouts converged on common barriers:** limited capacity, lack of bankability data, weak enforcement and unclear institutional ownership.

- **Follow up with interested philanthropies and partners** on the challenge brief and with the challenge-brief country or countries where philanthropy or partners wish to take a proposal forward.

LATIN AMERICA AND CARIBBEAN REGIONAL DIALOGUE

FACILITATOR	Ms. Gulnara Roll , Head of Sectoral Transitions, Mitigation Branch, Climate Change Division, UNEP
SPEAKERS	H.E. Adalberto Maluf, National Secretary of Urban Environment, Water Resources and Environmental Quality, Ministry of Environment and Climate Change, Brazil Ms. Dawn Pierre-Nathaniel, Chief Sustainable Development and Environment Officer, Sustainable Development & Environment Division, Department of Sustainable Development, Saint Lucia Mr. Sebastián Wainberg, Advisor, Energy Demand, Access and Efficiency Area, National Energy Directorate, Ministry of Industry, Energy and Mining, Uruguay Ms. Hanane Hafraoui, Programme Lead, Platforms and Country Programmes, UNEP
COUNTRY INTERVENTIONS	Brazil, Uruguay, Saint Lucia, Dominican Republic, Chile, El Salvador, Peru, Fortaleza and Campinas (Brazil), Spain

DISCUSSION SUMMARY

The regional dialogue examined how countries in Latin America and the Caribbean are on the journey towards planning and implementation of sustainable cooling and extreme heat resilience. A central theme was the need for stronger coordination across national ministries, subnational governments, sectors and stakeholders, as well as better integration of cooling into broader climate, energy, adaptation and development planning.

Brazil highlighted the importance of establishing governance structures that can translate national climate, adaptation, mitigation, air quality and cooling plans into action on the ground. Brazil has sought to strengthen coordination across ministries and empower subnational governments, including through its work on green and resilient cities. The experience also demonstrated the challenges of coordinating different ministerial mandates and programmes, while highlighting the value of bringing ministries with significant budgets and implementation responsibilities into the climate agenda. Brazil is increasingly seeking integrated approaches that connect cooling, heat resilience, nature-based solutions, urban planning and broader climate action.

Uruguay presented its work on energy efficiency, with residential cooling and heating demand identified as a major source of energy savings potential. The country is working to introduce energy requirements into building regulations and update Minimum Energy Performance Standards and energy labelling for air conditioners and refrigerators. A key challenge is that building regulatory authority sits with local governments, making national-local coordination essential. Uruguay plans to establish a further roundtable with local governments to identify barriers and accelerate the adoption of energy standards nationwide.

Saint Lucia emphasized that small island developing states have a strong policy foundation but face significant constraints in moving from plans to implementation. Its priorities include aligning the national cooling strategy with the

NDC, National Adaptation Plan, loss and damage strategy and sectoral plans, while developing a pipeline of costed and bankable projects. Financing gaps relate particularly to project preparation, market testing, transaction structuring, human resources and implementation capacity. Saint Lucia stressed that finance needs to function as a delivery system that moves countries from priorities to projects, transactions and capital.

The discussion highlighted the value of regional cooperation, particularly for Caribbean countries and other smaller markets. Opportunities identified included bulk procurement, shared appliance testing and verification, regional compliance tools, technician training and certification, and regional approaches to refrigerant collection, reclamation and downstream management. Participants emphasized that regional solutions need to reflect Caribbean market conditions rather than simply replicate approaches developed for larger markets.

The Dominican Republic described progress in integrating sustainable cooling into national climate and environmental policies, including its work under the Montreal Protocol and Kigali Amendment, national inventories, preparation of a National Action Plan for 2027-2032, energy efficiency, refrigerant management and heat resilience. The country emphasized the need for technical assistance, capacity building, data and financing to translate priorities into concrete projects. It identified opportunities for regional cooperation around energy efficiency, market transformation, refrigerant management, passive cooling, nature-based solutions, heat resilience and capacity building.

Participants also discussed how regional aggregation could help overcome the limited scale of individual national markets and support the development of bankable project pipelines. Saint Lucia highlighted the potential for regional procurement, testing, verification and financial arrangements. Chile noted the potential for regional cooperation on the recycling or destruction of hfc's where national markets are too small to make such activities economically feasible.

El Salvador raised the challenge of accessing finance for adaptation-oriented cooling and heat resilience measures. Participants noted that international climate finance continues to place significant emphasis on mitigation and increasingly encourages blended finance and private capital. The discussion highlighted the need to structure projects so that public value and adaptation benefits can be translated into financeable investments, including through demonstrating the cost-effectiveness of passive cooling measures.

The session concluded with a broader reflection that National Cooling Plans can serve as platforms for wider economic and industrial transformation. Brazil noted that its national cooling and heat plan is being considered as an opportunity for industrial modernization and local production, alongside environmental objectives.

KEY RECOMMENDATIONS AND TAKEAWAYS

- 01 Translate national plans into subnational delivery:** National cooling and heat plans need effective mechanisms to turn national priorities into implementation by cities, regions and other subnational actors.

- 02 Use cooling plans as platforms for wider transformation:** Cooling should be connected with mitigation and adaptation, energy efficiency, urban development, buildings, nature-based solutions, industrial policy, health and resilience planning, so that National Cooling Plans support industrial modernization, market transformation and broader economic development alongside emissions reduction.
- 03 Provide sustained capacity support, especially for SIDS:** Countries, particularly small island developing states, need ongoing technical assistance, human resources, project-preparation capacity and institutional strengthening to move from plans to implementation.
- 04 Turn priorities into financeable projects suited to smaller markets:** National priorities should be translated into costed actions and projects structured for public, private and blended finance, with financial mechanisms designed around the limited project scale and institutional capacity of Caribbean and other smaller markets.
- 05 Collaborate regionally to overcome scale constraints:** Countries could work together on bulk procurement, appliance testing, standards and compliance, technician training, certification, refrigerant management and project aggregation.
- 06 Use cooling and heat resilience as entry points for adaptation finance:** Passive cooling, resilient infrastructure, health, education and protection of vulnerable communities offer routes to accessing adaptation funding.

KEY OUTCOMES AND FOLLOW UPS

- **A clear understanding of shared regional and subregional priorities**, implementation barriers and opportunities for cooperation on sustainable cooling and extreme heat resilience.
- **Participants identified regional cooperation as a pathway for addressing market scale constraints**, including through shared testing, procurement, training, refrigerant management and potentially regional financial arrangements.
- **A high-level summary report** to guide future regional collaboration and implementation.
- **Develop regional approaches for common market and capacity constraints**, including shared testing and standards, procurement, technician training and refrigerant lifecycle management.
- **Explore mechanisms for aggregating projects across countries** to improve the scale and bankability of sustainable cooling and heat resilience investments.
- **Continue peer learning across the LAC region** on national cooling planning, market transformation, building standards, refrigerant management, passive cooling and nature-based solutions.

IMPLEMENTATION ROUNDTABLES AND THEMATIC DISCUSSIONS

NATIONAL AND MULTI-LEVEL COOLING ACTION: FROM PLANS TO IMPLEMENTATION AND INVESTMENT

FACILITATOR	Ms. Lily Riahi , Head of the Cooling, Buildings and Energy Unit and Head of the Cool Coalition, UNEP
SPEAKERS AND FACILITATORS	Dr. John Daniel Marcus Knight , Scientist E, Ministry of Environment, Forest and Climate Change, India Mr. Alok K Singh , Global Lead, Built Environment Decarbonization, World Bank Group Dr. Omar Abdelaziz , Associate Professor, The American University in Cairo Mr. Andreas Hermelink , Director, Cool Up Programme, Guidehouse
COUNTRY INTERVENTIONS	Bangladesh, Germany, India, Japan, Maldives, Pakistan, Saint Lucia, Somalia, Spain
PARTICIPATING ORGANIZATION INTERVENTIONS	American University in Cairo, AEEE, Climate Action, Cool Up/Guidehouse, Energy Foundation China, Islamabad, RCREEE, SEforALL; SPACECOOL; UNDP; UNEP Cool Coalition; World Bank Group, World Resources Institute

DISCUSSION SUMMARY

The session, facilitated by **Ms. Lily Riahi**, focused on the transition from National Cooling Action Plan (NCAP) formulation to implementation and investment, introducing the Cooling Financial Assessment Framework (CFAF) as a key instrument to translate planning into financeable action. Ms. Riahi framed the session as an effort to identify how national strategies can deliver measurable cooling and heat-resilience outcomes by aligning technical, financial, and governance mechanisms. The discussion blended country spotlights, partner perspectives, and breakout dialogues on governance and financing streams and highlighted a growing consensus that global climate strategies must increasingly emphasize the generation of investable projects, cross-ministerial governance, and the integration of cooling strategies with broader climate adaptation efforts, particularly addressing heat exposure and vulnerability.

Dr. John Daniel Marcus Knight presented the India Cooling Action Plan (2019–2037/38), which is implemented in phases and reviewed every two years to adapt to evolving technologies and changing refrigerants. The ICAP is projected to create an estimated 3.7 million domestic jobs while mitigating 778 to 1,176 mtco₂e of GHG emissions by 2030. India outlined a decentralized yet coordinated governance model, recognizing that a single ministry cannot effectively deliver the cooling agenda. While at the national level, the Ministry of Environment, Forest and Climate Change (moefcc) chairs

a Steering Committee overseeing nine thematic ministries (including power, housing, and urban affairs), at the ground-level, enforcement of India's framework is delegated to autonomous State Pollution Control Boards.

Mr. Alok K Singh, Global Lead, Built Environment Decarbonization, World Bank Group, presented the scale of the cooling sector, noting from the Cooler Finance report that the sustainable cooling market is expected to more than double between 2023 and 2050. The WBG introduced its "5x5" plan, which targets five sectors (built environment, manufacturing, agribusiness/cold chain, health, and infrastructure) through five engagement pillars (insights, influence, innovation, investment, and impact). The WBG noted that financiers fund the organizations delivering cooling and expect measurable returns, rather than funding "cooling" as a general concept. Therefore, demonstrating impact is necessary to engage industry and banks. The focus is also shifting from energy use to greenhouse gas emissions, specifically Scope 3 emissions, which attracts companies committed to net-zero targets. Noting that tenant/owner cost-recovery models already exist, the WBG stated that demonstration projects and execution help build market confidence. To connect policy with capital, the WBG presented the Cooling Financial Assessment Framework (CFAF) as a non-prescriptive tool used step-by-step to fill gaps in national frameworks before reaching the financing stage.

Country experiences highlighted the need to move from national cooling plans as standalone strategies towards coordinated, enforceable and continuously updated implementation frameworks.

Countries including **Bangladesh, China, Germany, Japan, and Pakistan** posed questions regarding the practical challenges of transitioning from high-level planning to localized execution, inter-ministerial coordination, state-level enforcement, the adaptability of long-term policies, and pathways for international collaboration.

Pakistan and Germany inquired regarding local adaptation and monitoring, India clarified that its overarching Environment (Protection) Act of 1986 (EP Act) is universally binding across all states, meaning states do not require separate legislative acts. The EP Act houses the nation's ozone rules and enforces compliance through a structured, three-step mechanism: an initial warning, an opportunity to defend, and finally, fines determined by an adjudicating officer across varying slabs. Unpaid penalties accrue after 45 days and can ultimately lead to imprisonment; while the penal provision is small, it yields a large regulatory effect. This legislative framework enforces tools such as the Energy Conservation and Sustainable Building Code (ECSBC), where compliance is a mandatory condition for securing environmental clearances for larger buildings and is tested six-monthly. Simultaneously, India detailed the integration of its Montreal Protocol commitments, highlighting the successful phase-out of cfc and halons, a 44% reduction in HCFC consumption, and the complete phase-out of HCFC-141b in rigid polyurethane foam manufacturing by January 2020.

Energy Foundation China inquired on how market uptake is encouraged for these transitions, India emphasized that it rarely uses force, strongly preferring incentives. To build workforce capacity for handling toxic and flammable alternative refrigerants, the government relies on existing schemes rather than creating new entities. Utilizing money already committed to national skills programs, India targets the training of 25,000 technicians by 2030, encouraging formal certification by offering 100,000 INR in free insurance.

Bangladesh inquired about inter-ministerial coordination and how small and medium enterprises are regulated. India clarified that while a central Steering Committee coordinates across thematic groups, and federal ministries generally comply with this guidance, the central government cannot impose requirements on regional states. Germany sought

clarification on how India moves from planning to implementation and monitors progress at the state level, particularly regarding financing and capacity building. India shared that implementation builds on existing building codes and government schemes, and financing is directly tied to the specific ministries and programs responsible for delivering each measure. **Climate Action**, Islamabad (Pakistan) asked how states and local governments carry out the enforcement of the Environment (Protection) Act (EP Act) and whether they are free to adapt it. **India** clarified that the federal EP Act of 1986 is universally binding across all states, meaning states do not have separate legislative acts or the freedom to alter it. The EP Act, which houses the nation's ozone rules, enforces compliance through a structured, three-step mechanism: an initial warning, an opportunity to defend, and fines determined by an adjudicating officer across varying slabs. Unpaid penalties accrue after 45 days and can lead to imprisonment. This legislative framework also enforces the Energy Conservation and Sustainable Building Code (ECSBC), where compliance is tested six-monthly and is a mandatory condition for securing environmental clearances for larger buildings. Simultaneously, **India** detailed the integration of its Montreal Protocol commitments, highlighting the successful phase-out of cfc and halons, a 44% reduction in HCFC consumption, and the complete phase-out of HCFC-141b in rigid polyurethane foam manufacturing by January 2020.

The **Energy Foundation China** asked about the mechanisms which encourage market uptake. India stated that the plan is reviewed every two years to adjust to dynamic technological standards, noting a preference for incentives over force. To build workforce capacity for handling toxic and flammable alternative refrigerants, the government relies on existing schemes rather than creating new entities. Utilizing money already committed to national skills programs, India targets the training of 25,000 technicians by 2030, encouraging formal certification by offering 100,000 INR in free insurance. **SPACECOOL** asked how international partners can contact and collaborate with government bodies. India clarified that collaboration depends entirely on the project scope, requiring partners to engage either the relevant federal line ministry (e.g., Housing for space cooling) or the state government for region-specific initiatives. Following the Q&A, Applauding India's comprehensive framework, Lily Riahi encouraged greater Indian leadership on global work packages and highlighted that the design of NCAPs make them inherently financeable where planning leads to projects, which subsequently unlock finance.

[NCAP Breakouts](#)

During the breakout sessions, participants divided to discuss specific barriers to NCAP governance and financing. In Group 1, which focused on NCAP Governance and Implementation and was moderated by Dr. Omar Abdelaziz (American University in Cairo), participants concluded that early NCAPs should be updated to address heat exposure and vulnerability. The group agreed that countries should leverage existing data systems and government schemes, noting that while NCAPs successfully define policy interventions, these plans require dedicated budgets and financing to be realized.

In Group 2, which focused on Financing and Delivery and was moderated by **Mr. Andreas Hermelink (Guidehouse / Cool Up Programme)**, **SEforALL** asked how banks view NCAP financing, given the challenge of treating cooling as a single sector. The **UNDP** explained that banks often lack technical capacity, meaning projects must be presented in a bankable format to secure funding. Additionally, sector-specific financial instruments do not translate across different sectors. As a result, countries need to carefully choose priority sectors and consider mechanisms like cooling bonds, where governments can also invest. The UNDP noted that moving from a policy to a program and finally to a project requires

increasing detail and funding. To address this, Guidehouse advised partnering with local banks to co-develop country-specific bankability tools, ensuring that domestic finance institutions are involved directly during the NCAP development process.



The breakout discussions also surfaced specific systemic challenges regarding multilateral assistance. **The Maldives** stressed that international focus must pivot toward funding physical implementation, asking critically who will actually implement the NCAPs on the ground. Somalia issued a direct call to remove specific multilateral development bank restrictions, noting that the WBG currently offers only international consultants who are restricted from traveling in-country or hiring local experts—a policy **Somalia** argued hinders genuine progress (a point flagged for further institutional dialogue). **Saint Lucia** advocated for a cessation of siloed funding, calling for integrated investment programs and demonstration projects to overcome funder competition, a strategy the WBG supported to build financier confidence. Sharing a successful European regulatory model, Spain noted that a new certification-based instrument for the tertiary and industrial sectors has successfully reduced energy consumption and increased efficiency investments.

The session concluded with the Alliance for an **Energy Efficient Economy (AEEE)** and the facilitators **Dr. Omar Abdelaziz** and **Mr. Andreas Hermelink**, Director, Cool Up Programme, Guidehouse emphasizing that the perceived fragmentation of climate finance remains a primary barrier, and that the financing of cooling-related mitigation and adaptation must be treated holistically as unified, integrated projects. They highlighted common priorities emerging around clear institutional mandates and multi-level governance such as heat-exposure and vulnerability data; stronger monitoring and technical capacity; dedicated, accessible finance and early engagement with domestic financial institutions; demonstration projects to build investor confidence; and greater use of existing data systems, budgeted schemes and national frameworks, including NDCs, naps, energy-efficiency programmes, building codes and public-sector schemes. Ultimately, treating NCAPs as living implementation frameworks that can evolve with changing technologies, refrigerants, climate risks, financing conditions and national priorities allows for greater flexibility and improves its bankability over time.

KEY RECOMMENDATIONS AND TAKEAWAYS

- 01 Build finance into NCAPs from the start:** Involve domestic financial institutions and local banks in developing NCAPs and co-develop country-specific bankability tools. Moving from policy to programme to project requires increasing detail, robust cost-recovery models and dedicated financing, with projects prepared in fully bankable form and priority sectors chosen carefully, since sector-specific financial instruments do not easily transfer across industries.
- 02 Use public finance and demonstrations to unlock private capital:** Deploy international public finance strategically as seed funding to catalyse larger private investment, and explore innovative mechanisms such as sovereign cooling bonds. Integrated investment programmes that treat mitigation and adaptation as a single package can reduce the perceived fragmentation of climate finance, while targeted demonstration projects can build market confidence by proving measurable impacts and returns.
- 03 Deliver through existing institutions with clear coordination:** Implement NCAPs through existing institutional structures and budgets, including funds already committed to national skills and development programmes, to avoid duplication and build in monitoring. A cross-ministerial coordinating body, such as a steering committee, should have clear ownership, while recognising that central governments often rely on the operational autonomy of regional states for execution.
- 04 Combine enforcement with incentives:** Use overarching national environmental legislation to enforce building codes and clearances through a structured, multi-step mechanism (e.g. Warning, defence and scaled fines set by an adjudicating officer). At the same time, favour incentives over force, such as free insurance for technicians, to encourage formal certification and safe handling of alternative refrigerants.
- 05 Shift MDB support towards implementation:** Remove structural restrictions on multilateral development bank funding that limit the use of local consultants and in-country presence, refocusing support on implementation rather than plan development alone.
- 06 Make heat resilience part of every NCAP:** Bring heat exposure, systemic vulnerability and resilience into the core scope of all new and updated NCAPs.

KEY OUTCOMES AND FOLLOW UPS

- **NCAPs were framed as moving from plan formulation to implementation and investment**, with the Cooling Financial Assessment Framework (CFAF) as a non-prescriptive, step-by-step method for producing costed, bankable roadmaps before the financing stage.
- **Participants aGReEd that NCAPs should be treated as living frameworks**, reviewed and updated as technologies, refrigerants, climate risks and financing conditions change.
- **Follow up NCAP requests received via the EPIC Facility** and prepare country dialogues to operationalize EPIC and CFAF.

MARKET TRANSFORMATION: EFFICIENT, CLIMATE-FRIENDLY COOLING APPLIANCES

FACILITATOR	Mr. Patrick Blake , United for Efficiency (U4E), Mitigation Branch, CCD, UNEP
SPEAKERS	Mr. Noah Horowitz, Senior Director, Clean Cooling Collaborative Mr. Patrick Blake, United for Efficiency (U4E), Mitigation Branch, CCD, UNEP Mr. Hubert Nsoh Zan, Global Cooling Pledge Focal Person, Ghana Mr. Daniel Collin G. Jornales, Chief Science Research Specialist, Energy Utilization Management Bureau, Department of Energy, Philippines Mr. Pei Chen NG, Principal Engineer, Carbon Mitigation Division, National Environment Agency, Singapore Ms. Li Xiaoyan, Senior Programme Officer, Montreal Protocol Division, Foreign Environmental Cooperation Center of the Ministry of Ecology and Environment, China Mr. Steven Zeng, Director, China Program, CLASP Ms. Miki Yamanaka, Senior Manager, Global Policy Relations, Corporate Sustainability Office, Daikin Mr. Baolong Wang, Secretary of IIR Commission E1 (Air Conditioning); Co-Chairperson for the IIR Working Group on Dehumidification in Air Conditioning, International Institute of Refrigeration (IIR) Ms. Stephanie Egger Haysmith, Montreal Protocol (Ozone) Secretariat
COUNTRY INTERVENTIONS	China, Ghana, Philippines, Singapore
PARTNER ORGANIZATION INTERVENTIONS	UNEP-U4E, Clean Cooling Collaborative, CLASP, Daikin, International Institute of Refrigeration (IIR), Montreal Protocol (Ozone) Secretariat

DISCUSSION SUMMARY

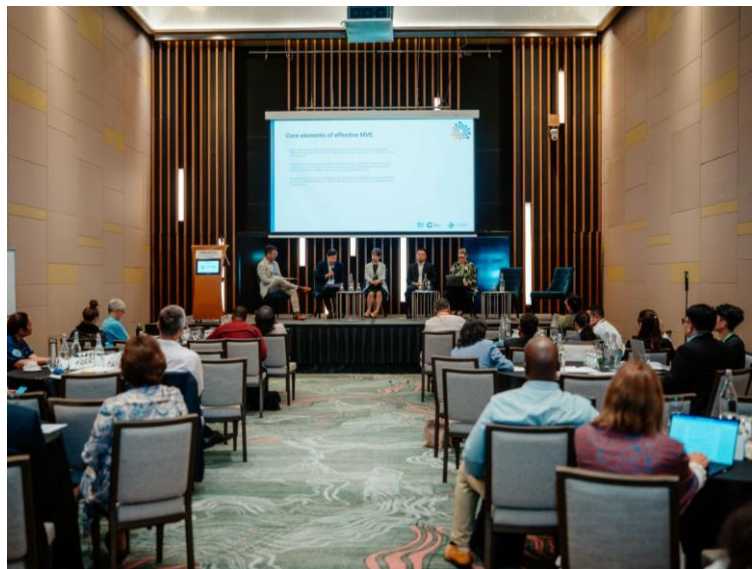
The implementation roundtable, convened by UNEP United for Efficiency (U4E), brought together governments, industry and technical partners to exchange practical approaches to scaling efficient, climate-friendly cooling appliances. The discussion was organized around three linked levers: the floor that regulation sets through minimum energy performance standards (MEPS) and labels, the pull that public procurement and incentives create, and the supply that manufacturers deliver. Its conclusions were designed to feed directly into IGCC Session 2A on 17 September.

In the thematic spotlight, Noah Horowitz of the Clean Cooling Collaborative highlighted measures beyond MEPS that can move markets towards super-efficient appliances, including public procurement and financial mechanisms such as incentives. He pointed to the upper efficiency tiers in the U4E Model Regulation Guidelines as a useful reference for setting these higher levels of ambition.

Patrick Blake of UNEP-U4E then gave a global overview. Air-conditioner MEPS are rising, and markets are converging around an ISO CSPF of about 6.10, the level in the U4E Model Regulation. China reached this level in 2022 and Singapore in 2025, the East African Community and SADC expect to follow in 2027, Malaysia by 2030, and ASEAN has set a regional target of 6.09, though many markets remain well below these levels. He presented the updated U4E Country and Regional Savings Assessments, now extended to 2050, the U4E Model Regulation Guidelines, which pair efficiency tiers with a refrigerant GWP ceiling, and new 2026 Sustainable Procurement Guidelines for air conditioners and heat pumps. He closed by describing the gap between policy and supply: rules and products rarely arrive together, neighboring markets send different signals, and neither demand nor supply is stated in a form the other side can plan against. The Manufacturing Platform is designed to close this gap.

In the country segment, **Ghana** described how it took its air-conditioner regulation directly to China, where most of its imports are made, to engage the leading exporters on what Ghana requires in its market. This engagement also revealed that third-party brokers were adding to the price of efficient units, and Ghana now shares a database of manufacturers so that importers can source directly. **China** described how it works closely with its industry when developing regulations, incentives and other measures, which has helped manufacturers prepare for higher efficiency levels and lower-GWP refrigerants. **The Philippines**, which already manufactures high-efficiency room air conditioners, and Singapore, the first ASEAN country to align with the regional MEPS target, also shared their priorities.

The partner panel turned to delivery. **CLASP** set out the core elements of effective market surveillance, verification and enforcement: registration of products before sale, risk-based check-testing including of online sales, escalating and publicized enforcement, and a permanent lead agency with trained staff and a budget, supported by customs, regional laboratories and a digital registration platform. **Daikin** explained that each new efficiency or refrigerant step requires manufacturers to redesign, retool and certify their product ranges, and that this effort is multiplied when neighboring markets use different metrics or test methods. It called for proactive engagement with industry and proposed a common measurement layer,



covering test conditions and reported data, with mutual recognition of test reports, while climate weighting remains national. The **IIR** noted that rated air-conditioner efficiency is still below 50% of the theoretical limit, and argued that MEPS should be dynamic, localized to climate and use, and humidity-inclusive, since more efficient dehumidification could support substantially higher MEPS. The **Ozone Secretariat** highlighted work that addresses energy efficiency and refrigerants together, including through MEPS, and the funding opportunities available from the Multilateral Fund.

In closing, the experiences of **Ghana** and **China** were brought together: both show the value of direct engagement between governments and manufacturers. The Manufacturing Platform can fulfil this role across many countries at once, so that this engagement no longer depends on individual, and can be scaled to multiple markets.

KEY RECOMMENDATIONS AND TAKEAWAYS

- 01 Set the floor and keep raising it:** Adopt MEPS and labels covering both efficiency and refrigerants, benchmark against the U4E Model Regulations, and plan staged increases so standards keep pace with technology and affordability.
- 02 Engage industry early and systematically:** Involve manufacturers from the start when developing or revising MEPS and refrigerant requirements and publish trajectories in advance so industry can plan. The Manufacturing Platform can scale this by connecting country MEPS trajectories, procurement and EPIC requests with manufacturer commitments, so the direct engagement pioneered by countries such as Ghana and China happens across many markets.
- 03 Align measurement across neighboring markets:** Harmonize test conditions and reported data and recognize each other's test reports, while keeping climate weighting national.
- 04 Treat enforcement as a permanent function:** Require registration before sale, target high-risk models with credible check-testing, escalate penalties and publish results. Share laboratory capacity regionally and build a simple digital registration system first.
- 05 Go beyond the floor with procurement and finance:** Use public procurement, incentives and financial mechanisms to pull the market towards super-efficient products, referencing the upper tiers of the U4E Model Regulations and the 2026 U4E Sustainable Procurement Guidelines.
- 06 Reflect local conditions in standards:** Account for local climate, hours of use and humidity, including efficient dehumidification, in future MEPS and incentive programmes.

KEY OUTCOMES AND FOLLOW UPS

- **Markets are converging on an air-conditioner efficiency level of around ISO CSPF 6.10**, already achieved by China and Singapore and targeted by ASEAN, the East African Community and SADC, Malaysia, Nigeria and Rwanda.
- **U4E presented its updated Country and Regional Savings Assessments**, extended to 2050, and new 2026 Sustainable Procurement Guidelines for air conditioners and air-to-air heat pumps and for heat-pump heating and hot water.
- **The Manufacturing Platform commitment framework was presented:** five required commitments on product performance, refrigerant transition, transparency and reporting, market readiness and servicing, and demand creation. Manufacturers set their own baselines and time-bound targets within 12 months of

joining and report annually through a Commitment Progress Report, with no cross-company scoring. The initial scope covers air conditioners and air-to-air heat pumps up to 70 kw.

- **Daikin proposed a common measurement layer** with mutual recognition of test reports as a practical way to reduce compliance cost and time across neighboring markets.
- **The IIR highlighted its Technical Brief No. 62** (July 2026) on cooling efficiency and humidity control.
- **Carry the roundtable conclusions into IGCC Session 2A** on 17 September and the IGCC Workplan 2027-2028.
- **U4E to publish the 2026 Sustainable Procurement Guidelines**, followed by launch webinars and targeted outreach.
- **Use the Manufacturing Platform to scale direct engagement between countries and manufacturers**, matching country MEPS trajectories, procurement demand and EPIC requests with manufacturer commitments, ahead of the first package of manufacturer commitments at COP31 in Antalya.

MARKET TRANSFORMATION: SCALING PASSIVE COOLING IN BUILDINGS

FACILITATORS	Mr. Benjamin Hickman , Programme Management Officer, UNEP Cool Coalition and and Mr. Gennai Kamata , Associate Programme Officer, Buildings and Urban Energy, UNEP
SPEAKERS	Mr. Cédric Bozonnat, Counsellor for Energy, Transport and Sustainable Development, Regional Economic Service, for Singapore and ASEAN countries, French Embassy in Singapore Mr. Bakan Jagadhish Sudhakar, Tamil Nadu, India - Department of Environment, Climate Change and Forests Mr. Rashane Sala-Ngarm, Senior Officer for Regional Partnerships and Cooperation, AFD Mr. Rio Jon Piter Silitonga, Research Analyst for Energy Efficiency, ASEAN Centre for Energy (ACE) Mr. Satish Kumar, Director, Alliance for Energy Efficient Economy (AEEE)
COUNTRY INTERVENTIONS	France, Singapore, Indonesia, Uruguay, India (Tamil Nadu, Uttar Pradesh), Cambodia, Japan, Kazakhstan, Maldives, United States, United Kingdom, Bangladesh, Pakistan, Lebanon, Ghana, Fiji, Togo, Ethiopia and others
PARTNER ORGANIZATION INTERVENTIONS	World Bank Group, NRDC, Singapore Green Building Council, AFD, ASEAN Centre for Energy (ACE), AEEE, SPACECOOL, Environmental Investigation Agency (EIA), RCREEE, RAMBOLL, BASE

DISCUSSION SUMMARY

The session showcased passive cooling and demand-reduction examples at building, neighbourhood and city scale. It identified common barriers to implementation and connected countries and cities with technical, financial and implementation partners.

Mr. Cédric Bozonnat, France opened by noting that summer 2026 was its hottest on record, with 15 consecutive days of extreme heat, and that it is now planning for a +4°C scenario. Its approach is passive cooling first, with active cooling as a complement, backed by EUR 3.6 billion in annual public resources and pursued through globalabc, the ICBC Chaillot Declaration and the Passive Cooling Hub.

Mr. Gennai Kamata presented the Cambodia case study, a four-year programme built on interministerial coordination (a 2024 workshop spanning labour, health, environment, construction and energy) is now integrated into NDCs and national frameworks, with most investment coming from the private sector. A Cool Paint demonstration with ISI Group achieved a 40% energy reduction at 3% additional cost and 162 days of thermal comfort without air conditioning. Capacity building included design software workshops, national guidelines, a knowledge network of over 150 members, webinars and a VR tool.

Mr. Benjamin Hickman, presented the India case study, where decades of passive cooling work and an established NCAP already existed, the India becool programme with the Swiss Agency for Development and Cooperation has three

components: policy design with five partner states and 20 cities, finance acceleration targeting over US\$100 million unlocked, and awareness and capacity building reaching 20+ developers and about 5,000 people. Centres of excellence are emerging at state level, for example in Tamil Nadu. The NCAP does not cover mid-to-low-size buildings, which are a subnational responsibility, and scaling remains the main outstanding need

Breakouts

Policy, regulations, codes and standards:

The breakout moderated by **Mr. Benjamin Hickman** discussed how countries are at different stages of code maturity are tackling scaling and market transformation for passive cooling . The **State of Tamil Nadu** piloted cool roofs with government, which attracted private-sector interest, and launched a standard operating procedure covering public and private buildings. It deliberately avoided enforcement at the outset in favour of voluntary guidelines, supported by district-level "Green fellows". Indicative costs for naturally ventilated buildings were given as roughly US\$100-300 per sq ft. **Indonesia** has zone-specific guidelines based on meteorological data and simulation, and green building codes since 2021, but needs to extend typology coverage. **Pakistan** has revised its green building codes by geography and climate zone, which has drawn bank interest, although scaling still requires external finance. **Ghana** is introducing energy performance regulations and sees centres of excellence as a regional collaboration opportunity. **Fiji's** updated codes await passage as a bill and must be made accessible across languages. **Bangladesh** reported low market readiness and limited enforcement of its existing code. **Lebanon** raised the adaptation of passive cooling to informal settlements, heritage housing and public infrastructure, and **Togo** raised self-built structures. The **UK and Ethiopia** highlighted public awareness, capacity building and end-user sensitisation. **RAMBOLL** advised that design approach should come before materials, and the facilitator noted that guidelines are needed by building typology and climate zone, including for shelters and vulnerable communities. The group concluded that countries converge on the same needs: guidelines translated to local climate zones, stronger enforcement pathways, and sustained awareness and capacity-building campaigns.

Unlocking finance, business models and demonstrations:

The breakout moderated by **Mr. Satish Kumar**, Director, Alliance for Energy Efficient Economy (AEEE), brought together financial institutions, solution providers and government representatives to examine how passive cooling can move from individual projects to financing at scale. It focused on integrating passive cooling into mainstream green-building finance, aggregating projects and demand into investable portfolios, and using public and concessional finance to mobilize private capital. Participants stressed matching financing models to different markets and sources of return. **AEEE** pointed to bulk procurement in India as a way to aggregate demand and reduce material costs, and cited India's affordable-housing procurement model as a use of government purchasing power without direct financing. **SPACECOOL** described a Japanese project where passive cooling improved farm productivity and achieved a return on investment of approximately one year, without depending on grants. **NRDC** noted that the value of passive cooling extends beyond energy savings to health, education and resilience, particularly for vulnerable communities where conventional energy-payback models may not apply. It observed that heatwave and health framing helps unlock government financing, that direct cost-benefit cases are hard to build while indirect ones (for example child health through CSR) are more promising,

and that quality assurance of cool-roof products needs strengthening. **France** suggested "cool school" programmes and the use of roof space for additional living area as scalable business cases.

The **World Bank Group** outlined blended finance, discounted green mortgages, guarantees and sustainability-linked lending, with local financial institutions important for reaching smaller projects. It noted that designers need training and involvement from the construction phase, and that its process engages cfo's as well as designers. Examples included blended concessional finance for self-built housing in India and a green Construction Completion Guarantee in Kazakhstan that helped social housing developers secure buyer financing, alongside experience from Mexico showing how MDB and donor capital can reduce risk and mobilise private finance. **ACE** is preparing a green finance taxonomy to make passive cooling bankable and support matchmaking and bundling. The **Maldives** suggested approaching financing institutions jointly rather than in silos, and noted that public appetite, not only financing, limits uptake.

The discussion also showed that availability of finance does not guarantee deployment. An approximately US\$300 million kfw credit line for affordable, passively designed buildings in India could not be fully used because market capacity did not match the required performance thresholds, and around US\$180 million was returned. **AEEE** cited a related case where an over-restrictive lending threshold under ECBC-Residential excluded many developers. Participants identified consumer awareness, technical capacity within financial institutions, and credible testing and quality assurance as conditions for investment.

The group concluded that passive cooling should increasingly be financed through green-building and infrastructure portfolios rather than individual measures, supported by aggregation, appropriate instruments, credible performance metrics and stronger technical-financial capacity. Financing should focus on measurable performance and value while remaining flexible on the technologies used. "Stick" (policy) and "carrot" (finance) must operate together, and awareness-raising is needed at every level of the market.

Mr. Rashane Sala-Ngarm, Senior Officer for Regional Partnerships and Cooperation, AFD closed the session by stating that passive cooling should be the first step in building design, not an add-on, although "passive first" does not mean "passive only". The challenge is no longer to demonstrate that passive cooling works, but to move beyond demonstration projects and embed it as standard practice in building codes. Scaling requires a supportive policy environment, project preparation and access to finance together, and AFD's PEAK Programme supports this.

KEY RECOMMENDATIONS AND TAKEAWAYS

- 01 Make passive cooling the default first step in building design, embedded in codes.** Treat passive cooling as the starting point with active cooling as a complement, and move from demonstration projects to mandatory building codes with stronger enforcement pathways.

- 02 Tailor guidelines and standards to local context.** Develop guidelines by building typology and climate zone, including for vulnerable, informal and heritage housing, supported by sustained public-awareness and capacity-building campaigns in multilingual and informal-settlement contexts.
- 03 Finance passive cooling as portfolios, not individual measures.** Use green-building and infrastructure portfolios, supported by taxonomies, demand aggregation, project bundling and matchmaking, and approach financing institutions jointly rather than in silos.
- 04 Use public and concessional finance to de-risk and mobilize private capital.** Apply blended finance, guarantees, green mortgages and sustainability-linked lending, with local financial institutions reaching smaller projects. Government procurement at scale can drive adoption as a non-financing lever.
- 05 Align finance with market capacity and credible performance.** Set eligibility and performance thresholds that developers can meet so that available funds are deployed, and strengthen testing, quality assurance and performance metrics before market scale-up.
- 06 Build the case and the capacity to invest.** Use urgency-based framing (heatwaves, health, children) and recognize value beyond energy savings, including health, education and resilience. Bring designers, financiers and developers together early, and build technical capacity within financial institutions.

KEY OUTCOMES AND FOLLOW UPS

- **Passive cooling was positioned as the default first step in building design**, with active cooling as a complement ("passive first", not "passive only").
- **The session aGReEd that the priority now is to move from demonstration projects to embedding passive cooling in building codes and standard practice.**
- **Finance was framed as the main route to scale:** passive cooling should be financed through green-building and infrastructure portfolios rather than individual measures, supported by aggregation, credible performance metrics and technical-financial capacity.

BEAT THE HEAT TRAINING AND STUDY TOUR

URBAN HEAT PLANNING AND INTEGRATION INTO POLICY FRAMEWORKS

FACILITATOR	Dr Eleni Myrivili , Global Chief Heat Officer, UNEP
SPEAKERS	Ms. Shi Hui Phua, Urban Specialist, World Bank Group Mr. Rajroshan Sawhney, Research & Applied AI Partnerships Lead, APAC, Google Dr. Iphigenia Keramitsoglou, Research Director, National Observatory of Athens (NOA), on EXTREMA Global Mr. Ander Zozaya, Lead, Project Management and Research Translation, Singapore-ETH Centre (SEC) Mr. Md Tanvir Hasan Rezaul, Deputy Town Planner and Project Director, Cox's Bazar District Master Plan Project, Cox's Bazar Development Authority (coxda), Bangladesh Mr. S. Saravanan, Greater Chennai Corporation, Tamil Nadu, India
PARTICIPATING CITIES	Antalya (Türkiye), Campinas (Brazil), Fortaleza (Brazil), Greater Chennai (India), Kisumu (India), Lagos State (Nigeria), Maharashtra (India), Phnom Penh (Cambodia), Quezon City (Philippines), Tamil Nadu (India), Uttar Pradesh (India)
PARTICIPATING ORGANIZATIONS	World Bank Group, Google Research, National Observatory of Athens, Singapore-ETH Centre

DISCUSSION SUMMARY

The session opened with **Dr. Eleni Myrivili** of **UNEP** framing extreme heat as the deadliest climate hazard, responsible for around half a million deaths a year. She introduced Beat the Heat, the COP30–UNEP Cool Coalition implementation drive that now brings together more than 250 cities and 100 partners. She then shared findings from a survey of about 150 Beat the Heat cities and states carried out between February and June 2026. The results pointed to high urgency but low readiness. Nearly two-thirds of cities rank extreme heat among their top three risks, yet almost half have not begun heat mapping or planning. Only 7% have implemented or institutionalized heat actions, and around two-thirds lack usable heat data. Cities said they most wanted support with nature-based and passive cooling and with heat action planning, rather than with cooling procurement. Further, planning acts as a catalyst for action: cities with heat mapping or plans in place are more than eight times as likely to be advancing nature-based solutions, passive design or pilot projects. Drawing on city experience, she encouraged cities to begin by assessing their current situation and to build heat into existing plans and building codes rather than producing a standalone document. She also stressed focusing first on the people most exposed, favoring passive and nature-based-first solutions, followed by mechanical cooling, and making sure someone clearly owns the plan and keeps it current.

Ms. Shi Hui Phua of the **World Bank Group** presented the Handbook on Urban Heat Management in the Global South, developed with UNEP and UN Habitat. It is published as a summary for policymakers, a technical manual and a solutions catalogue. Its guiding message is that cities should start now, even if small, and work together. They should secure clear and funded mandates, tailor heat management to their own context, and build on what has already worked. She illustrated this with a study of Bangkok, where the urban heat island averages around 2°C and some areas are up to 6°C warmer at night. The study estimates that every additional deGREE could cost more than 2,300 lives a year, reduce worker productivity by about 3.4% (equivalent to roughly THB 44 billion in lost wages), and add around THB 17 billion a year to household electricity bills. Its recommendations address the city's places, people and institutions over both the short and the long term.

Mr. Rajroshan Sawhney of **Google** focused on closing the hyper-local data gap that prevents cities from targeting interventions such as tree planting and cool roofs. Such data normally requires expensive aerial surveys, so **Google** offers its datasets free as a public good. Tree canopy data is available for more than 2,000 cities and rooftop reflectivity data for more than 50. A scenario tool called thermoknob, which estimates how much surface temperatures would fall with more trees or cool roofs, is being piloted in 14 US cities and **Hyderabad**, with global expansion planned for 2027. In **Stockton**, California, city staff used this modelling to build the case for a cool roof ordinance.

Dr. Iphigenia Keramitsoglou of the **National Observatory of Athens** then presented **EXTREMA Global**, which she described as covering the full cycle of heat resilience. Before the heat season, a city uses it to identify neighbourhoods underserved by cooling spaces. During heatwaves, staff manage those spaces in real time from a dashboard, extending opening hours, adding new locations or closing others. Every update flows straight to a free, multilingual mobile app for residents and visitors. Citizens can rate and review the cooling spaces, a feature she described as unique, and that feedback drives the city's analysis after the season and its preparation for the next one. The platform's prioritisation map works at building-block level, combining satellite temperature records with tree cover, population and distance to existing cooling spaces. Planners can use it to test choices such as where it is best to place three new cooling stations. A Singapore version of the app, which suggests the coolest walking routes and routes via cooling spaces, was made available for the week of the Assembly.

Mr. Ander Zozaya of the **Singapore-ETH Centre** explained how Cooling Singapore grew from urban heat island research that began in 2017 into the Digital Urban Climate Twin, after government agencies asked what they should actually do with the research findings. In **Singapore**, the twin links city-scale and district-scale climate models with the energy system, accounting for waste heat from buildings, industry, traffic and power plants. A simple interface allows planners to test scenarios such as greening, electric vehicles or wind corridors, and then zoom into a district to compare building designs, materials and even individual trees. Because few cities have Singapore's data, the team adapted the approach elsewhere. In Jakarta, city-wide analysis was used to identify high-risk districts, where thermal comfort was then simulated throughout the day. In Bhubaneswar, work with iFOREST on how climate change will raise energy demand fed into the city's Integrated Heat and Cooling Action Plan. In Belo Horizonte, a partnership with the Global Covenant of Mayors combined heat data with information on elderly residents, children and income levels to test the local government's plans and proposals for pocket parks. A proposed wind corridor there performed worse than expected, which he presented as a good illustration of why simulating before building pays off. He also noted that night-time

temperatures matter for comfortable sleep, whereas daytime temperatures matter most for outdoor workers. **Dr. Myrivili** added that Cooling Singapore was among the first truly cross-sectoral approaches to urban heat.

Mr. Md Tanvir Hasan Rezaul of the **Cox's Bazar Development Authority** described **Cox's Bazar** as a hot and humid coastal tourism hub where many livelihoods depend on outdoor work, including fishing, dry-fish processing, salt production, tourism and construction. At 33°C and 80% humidity, the Heat Index there can reach about 48°C, yet no ward-level heat data currently exists. With support from **UN ESCAP** and **UCLG ASPAC**, the Cox's Bazar Development Authority has completed a technical assessment and stakeholder engagement and is now drafting an Urban Heat Action Plan with eight intervention areas. The draft plan proposes yellow, orange and red heat alerts triggered at Heat Index levels of 40°C, 45°C and 50°C, based on data from the Bangladesh Meteorological Department. These alerts would reach communities through ward, union and mosque announcements, VHF radio for fishing vessels and health-sector channels. A package of pilot measures is being prepared alongside the plan.

Mr. S. Saravanan of the **Greater Chennai Corporation** shared the smaller-scale initiatives under way in **Chennai**, a coastal city of around 10 million people. For the past three years the city has installed green shade nets at more than 100 busy traffic junctions. It has also used green building design to cut energy use by about half, and it plants around five million saplings each year to expand green cover. It is restoring more than 200 lakes and water bodies as blue-green infrastructure, including a large lake project funded by the **Asian Development Bank**, and he said the city's heat action plan is ready.

Dr. Myrivili closed the session by acknowledging that cities now face a crowded field of tool and data providers. She explained that part of Beat the Heat's role is to help each city identify the providers that best suit its needs and to act as a matchmaker, since some providers concentrate on particular regions.

KEY RECOMMENDATIONS AND TAKEAWAYS

- 01 Plan first, because planning drives action.** Cities with heat mapping or a heat plan are more than eight times as likely to be implementing cooling solutions, so assessment and planning should be the starting point (Beat the Heat survey, UNEP).
- 02 Embed heat into existing systems rather than writing a standalone plan.** Heat considerations belong in master plans, building codes and development review, backed by clear ownership and funded mandates. **Cox's Bazar** is taking this approach by integrating its Urban Heat Action Plan into the District Master Plan (UNEP, World Bank Group, Cox's Bazar Development Authority).
- 03 Prioritize the most exposed people and places.** Outdoor workers, older people, children and low-income or informal communities should come first, guided by data that combines heat with vulnerability. **Bangkok, Belo Horizonte** and **Cox's Bazar** all mapped heat together with vulnerability to decide where to act first (World Bank Group, Singapore-ETH Centre, Cox's Bazar Development Authority).
- 04 Put passive and nature-based solutions first and use mechanical cooling as a complement.** This sequencing helps cities avoid maladaptation, and **Chennai's** shade nets, tree planting and lake restoration show it can start at a small scale (UNEP, Greater Chennai Corporation).

- 05 Use affordable data and simulation to target interventions and avoid costly mistakes.** Free hyper-local datasets and what-if tools let cities test options before investing. **Belo Horizonte's** wind corridor, for example, underperformed in modelling before any money was spent (**Google, National Observatory of Athens, Singapore-ETH Centre**).
- 06 Close the loop with citizens and local context.** Real-time information and citizen feedback on cooling spaces turn each heat season into evidence for the next (**EXTREMA Global**). Locally calibrated measures such as the Heat Index in humid coastal **Cox's Bazar** capture risks that air temperature alone misses.

KEY OUTCOMES AND FOLLOW UPS

- **Heat assessment and planning were positioned as the essential first step for cities.** Survey evidence showed that cities with heat mapping or plans are more than eight times as likely to move on to implementing cooling solutions.
- **The session agreed that heat should be embedded in existing master plans, building codes and climate plans** rather than treated as a standalone issue. Clear institutional ownership and funded mandates are needed to keep plans current and acted upon.
- **Data was framed as a tool for decisions rather than an end in itself.** Accessible, hyper-local data and what-if simulation can help cities target hotspots and vulnerable groups, test options before investing and build the evidence base for policy.
- **Participants reinforced a “passive first” approach** that prioritizes the most exposed groups, and showed that low-cost local pilots can build momentum before scaling up. Examples included cooling stations and heat alerts in **Cox's Bazar** and shade nets in **Chennai**.
- **As a follow up, UNEP will support Beat the Heat cities through matchmaking,** helping each city identify the tools, data and service providers that best fit its needs.

IMPLEMENTING NATURE-BASED & PASSIVE COOLING SOLUTIONS

FACILITATOR	Ms. Srinidhi Ravishankar , Cooling Policy Specialist, UNEP
SPEAKERS	Ms. Dimple Rana , Heat Resilience Leader, Arup Dr. Bakan Jagadhish Sudhakar , CEO, Tamil Nadu Green Climate Company, India Ms. Jia Xin Chum , Director of Landscape, APAC, Henning Larsen (Ramboll Group) Ms. Maricris F. Veloso , Officer in Charge, Education Affairs Unit, Quezon City, Philippines
PARTICIPATING CITIES	Antalya (Türkiye), Campinas (Brazil), Fortaleza (Brazil), Greater Chennai (India), Kisumu (India), Lagos State (Nigeria), Maharashtra (India), Phnom Penh (Cambodia), Quezon City (Philippines), Tamil Nadu (India), Uttar Pradesh (India)
PARTICIPATING ORGANIZATIONS	Arup, Henning Larsen (Ramboll Group), Cities Climate Finance Leadership Alliance (CCFLA), WRI Ross Center for Sustainable Cities, Urban Redevelopment Authority (URA), C40 Cities

DISCUSSION SUMMARY

The session examined how cities can reduce heat exposure through design, vegetation and materials. **Ms. Srinidhi Ravishankar** of **UNEP** opened the session by outlining the objectives of the second day of the Beat the Heat training, which focused on implementing nature-based and passive cooling solutions and financing heat resilience. She highlighted how urban design, vegetation, shading, ventilation, and building materials can help reduce urban heat and cooling demand, introducing the complementary roles of nature-based solutions and passive cooling in reducing reliance on mechanical cooling. She also outlined the day's practical components, including breakout group exercises and site visits to Punggol and Sentosa to explore passive and active cooling, sustainable urban design, and nature-based solutions in practice. In her framing presentation, **Dimple Rana** of **Arup** explained that heat stress depends on humidity, air movement, radiation and personal factors, not just air temperature. She outlined the main cooling mechanisms: shade, evaporative cooling, reflective surfaces, thermal mass, insulation and ventilation. Her core message was to maximize passive and nature-based measures first to reduce demand for active cooling. She also urged cities to integrate these measures into design codes for new buildings, retrofit existing ones, and deliver solutions as neighborhood-scale programmes rather than one-off projects.

Three case studies showed this in practice. **Dr. Bakan Jagadhish Sudhakar** of **Tamil Nadu** presented how Tamil Nadu moved from cool roof and school pilots to state policy and large-scale school retrofits. A key lesson was that passive materials had to be added to the Public Works Schedule of Rates before engineers could procure them. **Jia Xin Chum** of **Henning Larsen (Ramboll)** presented a nature-first approach in which landscapes cool, manage water and support biodiversity at once. Its Singapore examples were Punggol Digital District and Bishan-Ang Mo Kio Park, and it argued that cost-benefit analysis can strengthen the investment case for often-underfunded nature-based solutions. **Maricris F. Veloso** of **Quezon City** presented Quezon City's experience in establishing the OASIS Schoolyards: where three

greener, cooler schoolyards were designed and built together with students and teachers, benefiting around 15,000 learners. The pilot is now becoming a city-owned programme.

The facilitator noted that most Beat the Heat cities have taken basic action on these solutions, but few have embedded them city-wide. In the group exercise on Nairobi, Ho Chi Minh City and Medellín scenarios, participants identified cool coatings as quick wins and trees and green spaces as slower but more impactful. They highlighted community stewardship and governance as decisive for success.

KEY RECOMMENDATIONS AND TAKEAWAYS

- 01 Prioritize passive and nature-based solutions, starting at design:** Shade, greenery, reflective materials, ventilation and good building design should come before active cooling, as they reduce long-term cooling demand and energy use (Arup). For new development, orientation, window size and integrated shading can be written into design codes at little or no extra cost; where most buildings already exist, retrofits such as shading, insulation and cool roofs are essential.
- 02 Plan programmes and prioritize by context:** Cool roofs and greening rolled out across neighborhoods can lower outdoor as well as indoor temperatures, and packages of complementary solutions deliver more than one-off interventions. A simple multi-criteria assessment with red-amber-green scoring of cost, heat reduction, co-benefits and deliverability helps identify quick wins and long-term investments, and solutions must fit the climate (in humid places, evaporative measures should not add moisture).
- 03 Embed solutions in delivery tools and governance:** Guidelines alone are not enough; Tamil Nadu showed that passive cooling materials must be added to the public works Schedule of Rates so engineers can procure them. Success also depended on cross-agency coordination, involving 20+ departments in Tamil Nadu and nparks, PUB and HDB at Bishan-Ang Mo Kio Park. One breakout group concluded that every solution is only as good as the governance behind it.
- 04 Build the evidence and funding case through pilots and co-benefits:** Measured temperature reductions from pilots convinced the Tamil Nadu government to fund scale-up, with philanthropic support de-risking early pilots in Tamil Nadu and Quezon City. Because heat is less visible than flooding, highlighting co-benefits such as biodiversity, water management, air quality and health strengthens the investment case, and Ramboll's cost-benefit approach offers one way to quantify them.
- 05 Use schools and public spaces as entry points:** Schools combine vulnerable users, public ownership and educational value, as shown by Tamil Nadu's retrofits, Quezon City's Oasis Schoolyards and the Medellín group scenario.
- 06 Involve communities in design and care:** Co-design and local stewardship improve maintenance and acceptance, as seen in student Oasis ambassadors, resident-maintained planters and public understanding at Bishan-Ang Mo Kio Park that a flooding park "isn't a disaster".

KEY OUTCOMES AND FOLLOW UPS

- **Participants gained a shared understanding of how heat affects people and how passive and nature-based solutions counter it.** Heat stress depends on humidity, air movement, solar radiation and personal factors as well as air temperature. Shade, evaporative cooling, reflective materials, thermal mass, insulation and ventilation each reverse part of this.
- **The session reinforced a “passive first” approach.** Maximizing nature-based and passive measures before turning to active cooling reduces long-term cooling demand. Many of these techniques are not new and already exist in traditional architecture. New developments offer the cheapest opportunity to build in orientation, shading and good building form through design codes, while existing buildings need targeted retrofits.
- **Integrated, programme-scale approaches were shown to deliver the greatest impact.** Cool roofs and greening rolled out across whole neighborhoods can lower outdoor temperatures, not just indoor ones, and packages of complementary solutions outperform one-off projects. Singapore’s Bishan-Ang Mo Kio Park and Punggol Digital District showed how landscapes can cool, manage water and support biodiversity at the same time when several agencies work together.
- **Participants practiced a structured way to prioritize solutions.** Using a simple multi-criteria assessment, groups rated options for an informal settlement in Nairobi, a mixed-use development in Ho Chi Minh City and a school in Medellín. They weighed cost, heat reduction, co-benefits and deliverability. Groups consistently identified cool coatings as quick wins and trees and green spaces as higher-impact, longer-term investments. They also noted that every solution is only as good as the governance behind it.
- **Pilots backed by evidence, and embedded in the tools that govern delivery, were shown to be the route to scale.** City Status Check Survey results showed that most Beat the Heat cities have taken basic action, but only 4% have city-wide or regulatory adoption. Tamil Nadu moved from measured pilots to state-wide school retrofits by adding passive cooling materials to the public works Schedule of Rates so engineers could procure them. Quezon City’s Oasis Schoolyards are now becoming a city-owned programme.
- **Co-benefits and community ownership emerged as key enablers.** Highlighting benefits for biodiversity, water management, air quality and health strengthens the funding case for solutions whose cooling value is less visible. Co-design and local stewardship, such as Quezon City’s student Oasis ambassadors, help ensure interventions are maintained and valued.



FINANCING AND IMPLEMENTING URBAN HEAT AND COOLING RESILIENCE

FACILITATOR	Ms. Elsa Lefevre , Programme Manager, UNEP
SPEAKERS	Ms. Elsa Lefevre, Programme Manager, UNEP Mr. Hamza Abdullah, Analyst, Urban Climate Finance, Cities Climate Finance Leadership Alliance (CCFLA) Ms. Nicolette Loo, Senior Planner, Urban Redevelopment Authority (URA) Ms. Anjali Mahendra, Director of Global Research, WRI Ross Center for Sustainable Cities Dr Joy Shrikant Thakur, Scientist, Environment and Climate Change Department, State of Maharashtra, India
PARTICIPATING CITIES	Antalya (Türkiye), Campinas (Brazil), Fortaleza (Brazil), Greater Chennai (India), Kisumu (India), Lagos State (Nigeria), Maharashtra (India), Phnom Penh (Cambodia), Quezon City (Philippines), Tamil Nadu (India), Uttar Pradesh (India)
PARTICIPATING ORGANIZATIONS	CCFLA, URA Singapore, WRI, C40 Cities

DISCUSSION SUMMARY

Ms. Elsa Lefevre of **UNEP** opened the session by naming financing as the main barrier to scaling heat resilience. According to the City Status Check Survey, 81% of Beat the Heat cities rely on external grants, and many also lack the financial engineering capacity, technical skills and data needed to access funds that may already be available.

Mr. Hamza Abdullah of **CCFLA** set out the scale of the urban climate finance gap. Adaptation received only about US\$10 billion in 2022, against an estimated US\$147 billion a year needed by 2030 for cities in developing economies alone. He explained that adaptation is hard to finance because cities often lack fiscal space and creditworthiness, while investors see it as high-risk with limited returns. His central argument was that financing must match the solution. Public goods such as early warning systems and public cooling spaces depend on public funding. Greening and passive cooling suit concessional and development finance, while retrofits and cooling services with revenue streams can attract private capital, and blended finance can combine these sources. He urged cities to start with the internal levers they already control, such as budgeting, procurement, property tax, building regulations and land value capture, before seeking external finance.



The case studies showed these levers in action. Singapore's URA presented LUSH, which since 2009 has combined mandatory greenery requirements with floor-area incentives. The programme has added at least 440 hectares of g

reenery, and developers increasingly see greenery as adding value. URA attributed this success to embedding requirements in planning approval, setting clear and measurable standards while leaving developers flexibility in how to meet them, implementing progressively, and using incentives to build buy-in.

Ms. Anjali Mahendra of WRI presented the Cool Cities Lab, an open-source tool that maps heat stress at one-meter resolution and models the cooling effect of interventions. She stressed that data is only a starting point: WRI's Urban Heat Solutions Accelerator in Brazil is turning heat-risk data into bankable projects, with a pipeline worth about BRL 55 million across five cities.

Dr Joy Thakur described Maharashtra's state-wide cooling strategy, which links national targets, state plans, city heat action plans and building-level implementation. He argued for shifting from temporary heat-relief spending to permanent changes in building codes and planning. He also called for incentives that act as a nudge rather than a subsidy and that reach informal settlements and outdoor workers. The state is exploring district cooling and a proposed investment vehicle, MAHAPREIT, with district cooling intended to complement passive cooling rather than replace it.

C40 closed the case studies with Amravati, the first city in Maharashtra to adopt cool roof bylaws. The bylaws make cool roofs mandatory for new buildings above set thresholds and reward compliance with property tax rebates of up to 10%. The model is already spreading to Mumbai and Chandrapur.

In a group exercise facilitated by **CCFLA**, participants drew on Amravati's cool roof bylaws to map their existing institutional arrangements, partners, and processes, and identify the additional mechanisms and support needed to replicate similar bylaws in their own contexts.

Overall, the session showed that cities do not always need new money to start. Regulation and incentives, combined with data-driven project preparation and blended external finance, can turn heat resilience into an investable pipeline.

KEY RECOMMENDATIONS AND TAKEAWAYS

- 01 Make heat resilience an investment priority and build the capacity to finance it.** Heat resilience should be embedded in city plans, policies and budgets rather than relying on ad hoc grants; 81% of Beat the Heat cities currently depend on external grants. Cities also need financial engineering skills, technical capacity, data and multi-level political alignment to mobilize finance (UNEP, CCFLA, C40).

- 02 Start with the levers cities already control.** Cities don't always need new money to begin. Budgeting, procurement, property tax, building regulations, land value capture and asset management can create investment opportunities and reduce risk before external finance is sought (CCFLA).
- 03 Match financing to each solution.** Public goods such as early warning systems and public cooling spaces need public funding. Greening and passive cooling suit concessional and development finance, and revenue-generating retrofits and cooling services can attract private capital. Blended finance can combine these sources (CCFLA).
- 04 Pair clear regulation with incentives and roll it out progressively.** Mandatory requirements combined with rewards drive private investment, as shown by Singapore's floor-area incentives for greenery and Amravati's property tax rebates of up to 10% for cool roofs. LUSH succeeded by embedding measurable requirements in planning approval, giving developers flexibility in how to meet them and expanding requirements gradually (URA, C40).
- 05 Turn data into bankable project pipelines.** Heat-risk mapping is only a first step. Cities should go on to prioritize, design projects, quantify co-benefits and prepare investor-ready dossiers, since project preparation is where many projects stall. Investment vehicles such as the proposed MAHAPREIT can aggregate projects into an investable pipeline (WRI, Maharashtra).
- 06 Shift from relief to structural, equitable change.** Temporary heat-relief spending should be complemented by permanent changes to building codes and urban planning. Incentives should act as a nudge rather than a permanent subsidy and reach affordable housing, informal settlements and outdoor workers. Active solutions such as district cooling should complement passive cooling, not replace it (Maharashtra).

KEY OUTCOMES AND FOLLOW UPS

- **Financing was confirmed as the main barrier to scaling heat resilience.** 81% of Beat the Heat cities rely on external grants. The session emphasized that the gap is not only about the volume of funding, but also about cities' capacity to structure projects, access data and engage investors.
- **Participants gained a clearer understanding of how to match finance to different solutions.** Early warning systems, heat-health systems and public cooling spaces generate little revenue and depend mainly on public funding. Greening and passive cooling deliver broad benefits and suit concessional and development finance. Building retrofits and cooling services with revenue streams can attract private capital, and blended finance can bridge the categories.
- **Cities were encouraged to start with the levers already within their control before seeking external finance.** These include budgets, procurement, property tax, building regulations and land value capture. Singapore's LUSH programme and Amravati's cool roof bylaws showed how clear requirements paired with incentives, such as floor-area bonuses and property tax rebates, can mobilize private investment in greenery and cool roofs.

- **Data was framed as the foundation of an investment case rather than an end in itself.** Hyper-local heat-risk data can help cities target hotspots, model the cooling benefits of interventions and quantify co-benefits. However, projects still need dedicated preparation support to become bankable, as shown by WRI's Urban Heat Solutions Accelerator in Brazil.
- **The session reinforced an integrated, multi-level approach.** Maharashtra's experience showed the value of linking national targets, state plans, city heat action plans and building-level implementation. It also showed the value of shifting from short-term heat-relief spending to permanent changes in building codes and urban planning.
- **Equity was highlighted as a core design principle for financing.** Incentives should act as a nudge rather than a permanent subsidy, and should reach informal settlements, affordable housing and outdoor workers, not only large formal developments. Active solutions such as district cooling should complement passive cooling rather than replace it.



INTERGOVERNMENTAL COMMITTEE ON COOLING (IGCC) MEETING

GLOBAL COOLING PLEDGE IMPLEMENTATION PROGRESS AND MECHANISMS

FACILITATOR	Mr. Hongpeng Lei, Chief of Mitigation Branch, CCD, UNEP
SPEAKERS	Ms. Lily Riahi , Head of Unit, Buildings and Cooling, Mitigation Branch, CCD, UNEP Ms. Myriem Touhami , Head of Unit, Sustainable Investments, Mitigation Branch, CCD, UNEP
COUNTRY INTERVENTIONS	Mauritius, Maldives, Nigeria, Pakistan

DISCUSSION SUMMARY

Mr. Hongpeng Lei opened the session by welcoming the Philippines and The Gambia as new signatories to the Global Cooling Pledge and highlighting continued implementation progress. Around 50 signatories have integrated cooling into their NDCs, 25 National Cooling Action Plans have been published, and around 30 countries are incorporating passive and nature-based cooling into building codes. Progress was also noted on equipment efficiency, inverter air-conditioner uptake and implementation of the Kigali Amendment. The sustainable cooling pathway was highlighted as having the potential to cut cooling-sector emissions by 64% by 2050, expand access to cooling, resilient buildings and urban green spaces for 3 billion people, and generate up to US\$43 trillion in savings.



Ms. Lily Riahi emphasized that the Global Cooling Pledge is moving from political momentum to delivery. She presented EPIC – Enabling Pledge Implementation for Cooling as the mechanism for translating country commitments into implementation support, connecting governments with technical expertise, finance, technology and partners at national and subnational levels. An industry/manufacturing pillar links government and manufacturer commitments to support market access, technology deployment and alignment between supply chains and policy.

The first EPIC cycle received 52 requests from 26 countries across eight thematic areas, with strong demand around National Cooling Action Plans, Minimum Energy Performance Standards, sustainable procurement, building codes and passive cooling. Country and partner dialogues will support cross-ministerial coordination and development of actionable implementation plans. Subnational action was highlighted as central to addressing the impacts of extreme

heat on people, infrastructure and public services. Approximately 300 cities and regions are engaged, including 87 cities in Brazil, 17 in Nigeria, around 40 cities and states in India, and 14 in Kenya.

Ms. Myriem Touhami presented EPIC Deploy as a complementary mechanism focused on financing concrete, innovative and replicable cooling projects. Supported by the Italian Ministry of Environment and Energy Security, the initiative targets projects involving public, private, research and other implementation partners, including applications in hospitals, universities, schools, public facilities, building retrofits and passive cooling. The current call closes on 31 October 2026, with assessment and due diligence planned for 2027. Efforts are also underway to mobilize additional donor and development-finance support and expand the mechanism to more countries.

Maldives highlighted the concern of countries not included in the initial EPIC Deploy phase and asked when broader access could be expected. The response emphasized that the wider EPIC process remains open to country requests and that expressions of interest will inform future phases and donor discussions.

Nigeria emphasized that socially critical cooling needs, particularly in rural healthcare facilities, may not initially be commercially bankable. Using the example of essential cooling needs in rural healthcare, the intervention questioned how conventional bankability criteria should apply where social need is high but commercial viability is limited. In response, Myriem Touhami noted that projects need not be immediately bankable and cited experience from a digitalization programme in which more than US\$45 million in grants had been deployed over successive phases to help projects progress towards bankability. She noted that grant support can supplement bank lending through guarantees or 10–20% capital support, while stressing that projects must remain replicable, maintainable and sustainable.

Pakistan sought clarification on funding criteria and on assessment and certification approaches for passive cooling interventions in buildings. The technical questions referred to subsequent IGCC sessions for further consideration.

KEY RECOMMENDATIONS AND TAKEAWAYS

- 01 Country implementation needs to be coordinated across ministries and delivery partners**, with requests translated into practical joint work plans rather than treated as standalone technical interventions.
- 02 Cooling delivery requires alignment across national policy, cities and regions, industry, technology providers and finance**, so that policy ambition is matched by implementation capacity and market readiness.
- 03 Bankability should be treated as a pathway rather than a prerequisite**, particularly for socially critical projects where targeted public or grant support can bridge viability gaps and enable future scale.
- 04 Replication and long-term sustainability need to be built into project design from the outset**, including local capacity, training, maintenance and arrangements that allow projects to continue beyond initial grant support.
- 05 Expanding access to implementation finance will be critical**, particularly for countries not covered in the initial EPIC Deploy phase and for projects that require blended or concessional support to move towards scale.

KEY OUTCOMES AND FOLLOW UPS

- **Participating countries and representatives of sub-national governments confirmed demand for EPIC as the route from cooling commitments to implementation**, with 52 requests received from 26 countries in the first cycle across eight thematic areas. The next phase will advance received requests to country dialogues and workplan development.
- **Countries continue to act on their Global Cooling Pledge commitments**. The Philippines and The Gambia joined as new signatories, around 50 signatories have integrated cooling into their NDCs, 25 have published National Cooling Action Plans, and around 30 countries are incorporating passive and nature-based cooling into building codes.
- **Sub-national governments are engaged through Beat the Heat** as a key delivery mechanism for addressing the impacts of extreme heat on people, infrastructure and public services with around 300 cities and regions are engaged.
- **Participating countries, including Maldives, Nigeria and Pakistan engaged directly on how EPIC Deploy can reach their priorities**, with the EPIC Deploy call for proposals open until 31 October 2026, and a second phase December 2026. Next step, to follow up on expressions of interest from additional countries in discussions with donors for future phases of EPIC Deploy.
- **Advance discussions with participating financial institutions** (AfDB, AFD, WBG etc.) The potential development of a larger financing facility for sustainable cooling projects implemented via EPIC and EPIC Deploy.

IGCC SESSION 1 - NATIONAL AND MULTI-LEVEL COOLING ACTION PLANS FOR COORDINATED DELIVERY

FACILITATOR	Ms. Gulnara Roll , Head of Sectoral Transitions, Mitigation Branch, Climate Change Division, UNEP
SPEAKERS	Mr. Graeme Maidment, Professor, Heating and Cooling, London South Bank University; Executive Committee Member, UNEP Cool Coalition Mr. Andreas Hermelink, Director, Cool Up Programme, Guidehouse Dr. John Daniel Marcus Knight, Ministry of Environment, Forest and Climate Change (moefcc), India
COUNTRY INTERVENTIONS	India, Somalia, Maldives, Cambodia, Lebanon, Sri Lanka, Uruguay, United Kingdom, Kenya, Ghana, Moldova, Bangladesh, Tunisia, Zimbabwe, Peru, Pakistan, and the Dominican Republic, El Salvador, Saint Lucia, Seychelles, and Armenia
PARTICIPATING ORGANIZATION INTERVENTIONS	Guidehouse (Cool Up Programme), UNDP, SEforALL, African Development Bank, UNIDO and World Bank Group.

DISCUSSION SUMMARY

This session focuses on reviewing the progress and getting feedback on the operationalization of National Cooling Action Plans (NCAPs) as a core commitment under the Global Cooling Pledge from countries and partners on workplan Action Area 2: National and multi-level cooling action and investment plans

Ms. Gulnara Roll, in her Opening remarks, noted that 25 out of 72 pledge signatories have developed NCAPs, utilizing standardized global and regional methodologies facilitated by the Cool Coalition. UNEP highlighted growing demand for implementation support, announcing that the EPIC facility recently received 52 country requests, including 15 specifically for developing or updating NCAPs in nations such as Brazil, Ethiopia, Kenya, and Nigeria.



Mr. Andreas Hermelink, Director, Cool Up Programme, Guidehouse, set the thematic baseline, and presented key findings from the Day 1 and Day 2 technical sessions, emphasizing that an NCAP must function as a continuous planning and governance process rather than a static document. Citing Türkiye's three-year, inter-ministerial development process as an optimal governance model, Guidehouse stressed the necessity of utilizing precise data—such as heat-driven mortality rates—to secure high-level political prioritization. Furthermore, it was noted that financial

architecture must be embedded directly during the NCAP development phase, utilizing demonstration projects to provide financial institutions with tangible confidence to commoditize sustainable cooling investments.

Dr. John Daniel Marcus Knight Ministry of Environment, Forest and Climate Change (moefcc), India delivered a spotlight presentation on its national cooling action plan (ICAP), detailing a 20-year horizon extending to 2037–38. India’s holistic framework connects refrigerant transition, energy efficiency, and the built environment. To align developmental needs with environmental commitments, India established specific targets to reduce cooling demand by 20–25%, refrigerant demand by 25–30%, and cooling energy requirements by 25–40% by 2037–38, alongside a commitment to train and certify 100,000 service sector technicians. India emphasized that its implementation strategy avoids creating parallel administrative structures, relying instead on mapping ICAP recommendations directly onto ongoing government schemes to ensure synergistic deliver.

Thereafter countries were invited to deliver focused interventions, where Member States provided highly detailed accounts of their respective progress, localized challenges, and strategic updates, grounding the global framework in specific national realities. Every country that took the floor offered concrete insights into their NCAP maturity, ranging from comprehensive updates to early-stage developmental requests.

ALL: Participating countries expressed their backing for this workplan area as responding to their needs and engaged on how it should be developed over the next two years.

Bangladesh highlighted its large domestic market and strong private sector manufacturing base. Having successfully completed initial groundwork and technician training, Bangladesh is actively seeking international technical and financial assistance to scale up existing projects into bankable investment pipelines by bringing major manufacturers to the table.

Cambodia highlighted that its NCAP provides the strategic baseline for its NDC 3.0, National Adaptation Plan (NAP), and KIP. Cambodia has adopted a strict priority hierarchy: first reducing unnecessary demand through passive and nature-based solutions, followed by energy efficiency, refrigerant transition, and clean energy. Implementation relies on a cross-ministerial approach involving the environment, energy, construction, planning, industry, and finance ministries. Looking ahead, Cambodia is focusing on four areas: translating passive cooling guidelines into schools and public buildings, engaging real estate developers, deploying district cooling, and developing financing models for low-GWP technologies.

Ghana reported that it has successfully passed its NCAP, which has already enabled the mandatory certification of cooling technicians and the establishment of Minimum Energy Performance Standards (MEPS) for buildings and cooling appliances. Supported by the EPA’s Ozone Unit, Ghana is focusing on lifecycle refrigerant management to safely handle existing refrigerant banks. Furthermore, Ghana has established three Centers of Excellence, is running awareness campaigns in schools and hospitals, and has formed a National Committee on Ozone Depleting Substances to drive an “ECO model”—aligning Energy, Climate, and Ozone mandates.

Kenya detailed its ongoing effort, having already adopted an NCAP, to submit a formal request through the EPIC Facility to update the plan. The primary focus of this update is to systematically integrate execution at the sub-national, county, and city levels, noting that a national plan is only effective if it translates to local action and feeds into the next NDC.

Lebanon announced the imminent mid-October launch of its updated NCAP, which has been approved by the Council of Ministers and supported by the Ministry of Environment. Updating its previous 2020 plan, the new NCAP is designed across three implementation phases (2026–2028, 2028–2031, and 2031–2035) and operationalizes targeted HFC phase-downs of 50% by 2029 and 40% by 2030. These targets directly complement its Kigali Implementation Plan (KIP) and NDC. Lebanon emphasized that implementation proceeds despite severe national crises dating back to 2019, including rising poverty, conflict-damaged infrastructure in the South, and a large refugee population, stressing that cooling is no longer a luxury but a response to a global disaster requiring concessional and blended finance.

Pakistan shared that it developed its initial NCAP based on its NDC recommendations. Utilizing its own national exchequer, Pakistan has completed the first phase of its plan by solarizing federal buildings and is now transitioning to sub-national implementation. Pakistan requested international partnership, technology transfer, and financing to further implement green building codes.

Peru, identifying as a mega-diverse country highly vulnerable to climate impacts, noted its active transition to new refrigeration technologies and safe handling training with support from the Multilateral Fund. Peru's priorities for its upcoming NCAP include scaling MEPS, developing green infrastructure to build heat resilience, and engaging in robust South-South cooperation.

Somalia shared its rapid progression, having drafted its NCAP with UNEP and the Cool Coalition in May, with a full launch scheduled for COP31. Concurrently, Somalia is advancing the "Be Cool Somalia" program targeting passive cooling and cold chains. However, Somalia stressed that fragile and conflict-affected states require much faster turnaround times for technical and financial support from multilateral facilities, noting that its recent EPIC application remains pending.

Sri Lanka noted that while it has a national climate plan, it is preparing to kick off its NCAP dialogue soon. Sri Lanka highlighted a massive opportunity for passive cooling utilizing its natural sunlight, wind patterns, and geomorphology. Green building codes have already been submitted to the legal department, and with the national grid approaching 70% renewable energy, Sri Lanka primarily needs financial and technical support to scale passive cooling in buildings, industries, and schools.

The Dominican Republic highlighted the severe thermal stress impacting outdoor workers, the elderly, and low-income demographics. Building on existing MEPS for domestic refrigerators supported by UNEP and UNIDO, the Dominican Republic emphasized that cooling requires coordination across the energy, tourism, finance, and industrial sectors. They noted an urgent need for reliable baseline data on equipment stocks, energy consumption, and emissions to establish targets that can be aligned with their NDC and adaptation plans.

The Maldives emphasized the unique challenges for Small Island Developing States (SIDS), noting highly dispersed populations and extreme import dependency. While not starting from zero—citing existing MEPS, labeling programs, and "cool schools" initiatives—the Maldives stated that producing an NCAP document is insufficient; the objective must be to establish a practical pathway, coordinated governance, and finance to actually execute projects.

The Republic of Moldova outlined a 12-stage phase-down framework integrated directly into its National Energy and Climate Plan (2025–2030). The plan targets a 10% reduction in HFC consumption by 2029 and an 80% reduction against baselines by 2045. Moldova emphasized the strengthening of customs licensing, technician training, and extended

producer responsibility (EPR) for the end-of-life management of refrigerants. Notably, Moldova clarified that while its National Energy and Climate Plan drives these HFC phase-downs, its current NDC focuses exclusively on CO₂ and methane emissions.

The United Kingdom provided a perspective from temperate climates, announcing the forthcoming publication of the "UK Cooling Outlook" by the end of 2026. Led by the Department for Energy Security and Net Zero, this document coordinates seven government departments and devolved administrations to consolidate evidence on climate risks, cooling demand, and policy gaps. The UK called for increased knowledge exchange among temperate countries facing newly emergent heat risks to protect vulnerable groups and avoid locking into high-energy demand.

Tunisia officially announced the launch of its NCAP process, supported by UNEP and the African Development Bank (afdb). Tunisia noted that its kick-off and first steering committee meetings are complete, data collection by engineering firms is underway, and the final NCAP is targeted for delivery in February 2027.

Uruguay advocated for the establishment of regional peer-to-peer working groups in Latin America and the Caribbean to accelerate policy alignment. While Uruguay does not yet have an NCAP, it recently released its second national energy efficiency plan, which formally incorporates all energy efficiency commitments made under the Global Cooling Pledge and its NDC.

Zimbabwe stressed the necessity of tailoring NCAPs to address rural populations, noting that 62% of its citizens live in rural areas. Zimbabwe's priority is exploring adaptation components to address how extreme heat specifically impacts rural livelihoods, agriculture, and medicinal supply chains.

State of Maharashtra (India), with a population of over 125 million and 15 of its 36 districts highly vulnerable to heat stress, drought, and water insecurity—requested technical and financial support to establish a Special Purpose Vehicle (SPV). This SPV would specifically manage regional climate and cooling projects, develop a center of excellence, and implement sustainable cold storage and disaster risk financing.

The Seychelles noted that it has integrated cooling measures into its NDC, Kigali Implementation Plan (KIP), and upcoming National Adaptation Plan (NAP), rather than developing a standalone NCAP. Measures include regional MEPS, tax incentives for efficient cooling appliances and low-GWP refrigerants, and refrigerant bans. Highlighting capacity and financing constraints faced by SIDS, the Seychelles called for greater regional knowledge-sharing and exchange of experiences.

Delegations from **El Salvador**, **Saint Lucia** and **Armenia** offered to share their detailed national updates and implementation requests as written remarks.

KEY RECOMMENDATIONS AND TAKEAWAYS

- 01 Develop NCAPs as iterative, cross-sectoral processes, with finance and coordination built in from the start.** NCAPs should be living processes and not static documents, with financial architecture and investment pipelines integrated directly during the planning phase. Dedicated, cross-ministerial coordinating bodies should align the mandates of the environment, energy, housing and finance ministries throughout the NCAP lifecycle.
- 02 Use concrete health and socio-economic data to set baselines and secure high-level political support.** Data such as heat-related mortality rates and agricultural impacts can establish baselines for cooling interventions and build the case for political backing at the highest level.
- 03 Build sub-national delivery into updated NCAP frameworks.** Provincial and city-level execution strategies should be integrated directly into NCAPs, to ensure localized delivery and accountability.
- 04 Tailor support and exchange to country circumstances.** Create regional peer-to-peer working groups to facilitate knowledge exchange, particularly for Latin America and the Caribbean and among temperate nations facing newly emergent heat risks. Address the administrative bottlenecks specific to fragile and conflict-affected states by ensuring rapid-turnaround technical and financial support mechanisms.
- 05 Put passive cooling first.** Prioritize passive cooling, nature-based solutions and green building codes as foundational elements of national cooling strategies, before relying on active technological interventions.
- 06 Consolidate and streamline access to international climate finance.** Bring together mechanisms such as Article 6, the Multilateral Fund and the EPIC Facility, to reduce fragmentation and help countries scale bankable projects.

KEY OUTCOMES AND FOLLOW UPS

- **Participating countries and representatives of sub-national governments expressed their backing for National Cooling Action Plans (NCAPs) as a core commitment** under the Global Cooling Pledge, and for this workplan area as responding to their needs. Of the 72 Pledge signatories, 25 have developed NCAPs, and 15 of the country requests received through the EPIC Facility are specifically for developing or updating NCAPs, including in Brazil, Ethiopia, Kenya and Nigeria.
- **Participating countries**, including Cambodia, the Dominican Republic, India, Ghana, Lebanon, Maldives, Moldova, Pakistan and Uruguay, **described NCAPs as the strategic baseline** for their wider climate and development planning.
- **Participating countries and representatives of sub-national governments** including Cambodia, Kenya, Pakistan, Zimbabwe and State of Maharashtra **confirmed that a national plan is effective only if it translates into local action.**

- **Participating countries** including Bangladesh, Dominican Republic, Kenya, Lebanon, Maldives, Pakistan, Peru, Somalia, Sri Lanka Tunisia, State of Maharashtra, India are already **engaging UNEP and partners**, and set out where further support is needed
- **Advance the next phase for the received EPIC requests** through country dialogues and workplan development.
- **Support regional and peer exchange:** peer-to-peer working groups in Latin America and the Caribbean, as proposed by Uruguay, with Peru and the Dominican Republic, and knowledge exchange among temperate countries, as proposed by the United Kingdom.

IGCC SESSION 2A - MARKET TRANSFORMATION AND ALIGNMENT WITH THE KIGALI AMENDMENT TO SCALE EFFICIENT COOLING APPLIANCES AND EQUIPMENT

FACILITATOR	Mr. Patrick Blake , United for Efficiency (U4E), Mitigation Branch, CCD, UNEP
SPEAKERS	Mr. Martin Krause , Director, Climate Change Division, UNEP Ms. Avipsa Mahapatra , Climate Campaign Director, Environmental Investigation Agency Ms. Li Xiaoyan , Senior Programme Officer, Montreal Protocol Division, Foreign Environmental Cooperation Center, Ministry of Ecology and Environment (FECO), China
COUNTRY INTERVENTIONS	Bangladesh, Belgium, China, Germany, Ghana, India, Japan, Lebanon, Maldives, Moldova, Nigeria, Pakistan, Philippines, Spain, Sri Lanka, Tunisia, United Kingdom
PARTICIPATING ORGANIZATION INTERVENTIONS	Environmental Investigation Agency (EIA), Montreal Protocol (Ozone) Secretariat, Clean Cooling Collaborative (climateworks Foundation), Danfoss, GREE Electric Appliances, SEforALL, UNDP, GIZ

DISCUSSION SUMMARY

This session focuses on presenting the Manufacturing Platform as part of the workplan Action Area 3. Market Transformation and deployment for sustainable cooling and gaining broad support from countries and partners.



governments clearer supply-side signals and helps identify barriers before they become bottlenecks. A buyers' club to aggregate demand through bulk procurement was also raised.

Mr. Martin Krause opened the session by marking ten years since the adoption of the Kigali Amendment, the session set out to identify which sectors and actions to prioritize in the collective workplan, and who is ready to deliver them. It was noted that the main barrier is coordination rather than technology: cooling demand is rising fastest in markets with the least leverage over what is supplied, while manufacturers lack clear, coordinated policy signals across markets. The Manufacturing Platform was presented as a voluntary, pre-competitive space that does not regulate or certify products or replace government systems, but helps manufacturers define credible improvements, gives

The rapporteur, **Ms. Avipsa Mahapatra** of EIA, reported four priorities from the regional dialogues and roundtables: MEPS and refrigerant GWP limits must reinforce each other; procurement, incentives and innovative finance can build demand before regulation takes full effect; regional harmonization gives manufacturers certainty and smaller markets collective power; and engagement with industry must become more coordinated and ambitious. Speaking for civil

society, she urged that Platform commitments go beyond business as usual and be measurable, transparent, time-bound and verifiable, moving to refrigerants with a GWP as close to zero as possible.

In the Cool Spotlight, **Ms. Li Xiaoyan** showed how China has moved refrigerant policy, efficiency standards and market development forward together. Since ratifying the Kigali Amendment in 2021, China has introduced HFC licensing, production quotas and sector GWP limits, and has revised its room air-conditioner efficiency standard five times since 1989. Between 2018 and 2025, the inverter share of room air conditioners rose from about 70% to about 98% while HCFC-22 use more than halved. R-290 was developed jointly with industry with Multilateral Fund support, demonstrated at scale, and promoted through incentives tied to the highest efficiency grade, retail channels and public awareness. Remaining challenges include the cost gap with HFC units, coordination across government, practical understanding of safe use, and compatibility of standards and certification across countries.

Countries expressed broad support for the Platform. Several showed how efficiency and refrigerant policy are already combined:

ALL: Participating countries expressed their backing for the Manufacturing Platform and the workplan area as responding to their needs and engaged on how it should be developed over the next two years.

The United Kingdom has cut HFC consumption by nearly 70% since 2015 and sees the Platform coordinating MEPS and label updates;

The EU, as **Belgium** described, prohibits the export of equipment banned on its own market;

Lebanon and **Tunisia** are converting manufacturers to R-290; and

Japan and **Spain** shared subsidy and white-certificate schemes. Others focused on the gap between policy and supply.

Ghana took its regulation directly to its main exporters in China and found that brokers were inflating the price of efficient units, and a complementary platform for buyers and importers was suggested in response.

The Maldives and **Bangladesh** stressed that small or price-sensitive markets have little influence over what manufacturers supply.

Philippines, Sri Lanka and **Tunisia** highlighted gaps in enforcement and testing capacity.

The Republic of Moldova and **Nigeria** pointed to public procurement as a demand lever,

Germany called for R-290 supply chains to developing regions.

China committed to encourage its leading manufacturers to join the Platform.

Among partners,

GREE set out time-bound commitments as a member of the Platform and called for clear, progressive regulation and technician training.

The Ozone Secretariat confirmed that the Multilateral Fund is ready to support projects integrating efficiency into Kigali implementation.

The Clean Cooling Collaborative noted that next-generation products combining super-efficiency, ultra-low-GWP refrigerants, dehumidification and demand response are close to launch but not yet available.

Danfoss urged the Platform to look beyond appliances to systems such as district cooling and data centres.

UNDP cautioned that higher up-front costs and logistics barriers in small island states must be addressed.

GIZ stressed that proven working examples already exist.

The session concluded that its inputs will shape the Platform's design and activity streams over the next one to two years.

KEY RECOMMENDATIONS AND TAKEAWAYS

- 01 Treat efficiency and the refrigerant transition as one agenda:** Design MEPS and refrigerant GWP limits together, as China and the EU have done, and use Multilateral Fund support for projects that integrate both.
- 02 Fix coordination, not technology:** The products largely exist. The Platform should align MEPS and label updates with manufacturers' product plans, support regional harmonisation around common references such as the U4E Model Regulation Guidelines, and give industry clear, stable timelines.
- 03 Set an ambitious bar for industry commitments:** Commitments under the Platform should go beyond business as usual and be measurable, transparent, time-bound and verifiable, moving towards refrigerants with a GWP as close to zero as possible.
- 04 Aggregate demand:** Public procurement, buyers' clubs, bulk procurement and direct engagement between importers and manufacturers, as in Ghana, can create early demand and lower prices, especially for small markets.
- 05 Address the constraints of small markets:** Small island developing states and other small markets need targeted solutions on market power, shipping and insurance of charged equipment, warranties, servicing networks and life-cycle refrigerant management.
- 06 Build the capacity that makes standards work:** Support test laboratories, labelling systems, enforcement staff, customs and technician training alongside policy, and build practical confidence in the safe use of flammable refrigerants through standards, product design, training and demonstration.
- 07 Close the cost gap for lower-income buyers:** Use concessional and results-based finance and targeted incentives linked to the highest efficiency levels to address the up-front cost of efficient, low-GWP equipment.
- 08 Pull next-generation solutions to market:** Use the Platform to bring super-efficient, ultra-low-GWP products with effective dehumidification and demand-response capability to market, and consider over time how system-level solutions such as district cooling and waste-heat recovery can be reflected.

KEY OUTCOMES AND FOLLOW UPS

- **Broad support for the Manufacturing Platform was expressed by participating countries across regions**, including the United Kingdom, Ghana, Lebanon, Moldova, the Maldives, Germany, Bangladesh and China, and by partners including Danfoss, the Ozone Secretariat, the Clean Cooling Collaborative, SEforALL and GREE Electric Appliances. EIA called for Platform commitments to go beyond business as usual. No objections were raised.
- GREE Electric Appliances, as a member of the Platform, committed to complete the transition of its air conditioners supplied to global markets to inverter technology by August 2029, progressively increase the share of products meeting U4E efficiency levels, stop using refrigerants with a GWP above 750 in residential air conditioners by October 2028 while advancing ultra-low-GWP solutions, and develop ultra-high-efficiency air conditioners for hot and humid climates, with at least 100 units for field testing by December 2027. GREE will report progress annually.
- **China committed to encourage leading Chinese manufacturers to join the Platform.**
- Participating Countries put forward specific support requests: Tunisia for an upgrade of its accredited national laboratory to test natural-refrigerant appliances, an update of its air-conditioner and refrigerator labels to seasonal performance, and an update of its labelling web platform; Sri Lanka for accredited testing laboratories and energy-manager training; Bangladesh for MEPS enforcement, R-290 transition, blended concessional finance and technician certification; Lebanon for an integrated package covering conversion, customs and market surveillance, laboratories, consumer awareness and incentives; and the Maldives for a focus on small island developing states and small markets through the Platform.
- SEforALL announced marketplace convenings in Nigeria, India, Indonesia and Madagascar over the next year and a results-based financing mechanism for efficient cooling in Africa, starting with a West Africa space-cooling pilot and aiming to raise USD 100 million over five years.
- Lebanon reported that 18 of 47 enterprises have contracted to convert their air-conditioner production lines to low-GWP refrigerants, mainly R-290, and Nigeria expects Lagos State to adopt sub-national appliance standards next year.
- **A buyers' club, or a complementary platform for buyers and importers**, was proposed to aggregate demand alongside the Manufacturing Platform.
- UNEP and U4E to use the session inputs to shape the Manufacturing Platform's design and the activity streams it will take forward over the next one to two years.
- Explore a workstream for small island developing states and small markets covering logistics and insurance for charged equipment, servicing and life-cycle refrigerant management.
- **Follow up on country support requests**, including those from Tunisia, Sri Lanka, Bangladesh, Lebanon and the Maldives, through the EPIC Facility and the Platform.
- **Engage Chinese manufacturers** following China's offer of support, and present the first package of voluntary manufacturer commitments under the Platform at COP31 in Antalya in November 2026.

IGCC SESSION 2B - MARKET TRANSFORMATION TO SCALE PASSIVE COOLING SOLUTIONS

FACILITATOR	Mr. Benjamin Hickman , Programme Management Officer, UNEP Cool Coalition
SPEAKERS	Mr. Satish Kumar , President and Executive Director, Alliance for an Energy Efficient Economy (AEEE) Mr. Peter Rimba Maneno , Deputy Director Climate Change, Ministry of Environment, Climate Change and Forestry, Kenya
COUNTRY INTERVENTIONS	Bangladesh, Cambodia, Ethiopia, Ghana, India (State of Maharashtra, State of Tamil Nadu), Kenya, Lebanon, Maldives, Pakistan, Saint Lucia, Vietnam
PARTICIPATING ORGANIZATION INTERVENTIONS	Alliance for an Energy Efficient Economy (AEEE), ASEAN Centre for Energy, Agence Française de Développement (AFD), Alliance for Climate Justice and Clean Energy (Pakistan), GIZ, German Energy Agency (DENA), Green Climate Fund

DISCUSSION SUMMARY

This session focused on reviewing progress and discussing support for passive cooling solutions and heat resilience to help transform markets, with countries and partners, under workplan Action Area 3: Market transformation and deployment for sustainable cooling.

Mr. Benjamin Hickman opened the session by noting that according to the Global Cooling Watch Report, passive, nature-based, low-energy and hybrid solutions can deliver two-thirds of the potential cooling emissions reduction by 2050 while providing affordable thermal comfort and safety for billions. Consultations with countries and partners show that countries face major barriers to market transformation and start from very different points – low awareness among consumers and industry, limited skills among builders, architects and planners, high-upfront cost and few incentives, a lack of local evidence of benefits, complicated mandates across ministries, and technical assistance that is often delivered as fragmented projects. The workplan circulated to countries sets out priority areas that, together can deliver market transformation. Countries were asked whether these challenges and actions match their needs and whether they have other priorities.

Mr Satish Kumar, President and Executive Director, AEEE, India, rapporteur for the session, reported that there is no shortage of building energy codes or pilots, and that the gap lies in demonstrations jointly owned by policy makers, developers and designers, and in implementation and verification of existing codes. He stressed that passive cooling is a critical solution to people living in informal settlements, self-built and rural homes, schools, health facilities and shelters, which codes do not cover and where finance therefore does not reach. He highlighted that available finance is far smaller than the need and cited an Indian programme in which only about 40% of EUR 277 million credit line was used, as an example of setting ambition ahead of market conditions. He closed with three asks i) bring unregulated buildings into view through simple, prescriptive design rules for small and self-built homes, ii) make public housing

programmes carry passive design through specifications and cost norms, and iii) direct concessional and blended finance to where commercial returns are not available.

Mr. Peter Rimba Maneno, Deputy Director Climate Change, Ministry of Environment, Climate Change and Forestry, Kenya, in the Cool Spotlight, set out a three part approach: progressively revising building codes to make passive measures mandatory in public buildings and to incentivize them, mobilizing green mortgages, tax incentives and blended finance and promoting local low-carbon materials, and investing in training for architects, engineers and officials. He also invited partners to join knowledge exchange, technology transfer and co-investment.

Countries confirmed that passive cooling is already reflected in national and sub-national policy, and that the main challenge is implementation. Several demonstrated policies moving into practice.

ALL: Participating countries expressed their backing for this workplan area as responding to their needs and engaged on how it should be developed over the next two years.

Bangladesh asked for technical guidance for hot and humid climates, pilot funding and bankable proposals.

Cambodia emphasized considering passive cooling at the start of design, showing developers measurable benefits and providing incentives that reduce risk and cost. Project starting with an as

Maldives proposed a school demonstration project starting with an assessment of gaps.

Ethiopia reported a cooling roadmap that informs the integration of cooling into its NDC, a 2025 MEPS, a climate finance Guidebook for Cooling and city-level work in Addis Ababa. Ethiopia also noted weak enforcement of standards and limited access to climate finance for small-scale and rural projects and asked for technical assistance on urban heat risk assessments.

Ghana presented a nearly-zero-energy-office built with GIZ using local clay bricks, shading and cross ventilation and asked for guidelines for the African region focused on local materials and for work with universities.

Indonesia raised challenges that apply more widely: eight climatic zones and local cultural practices that require climate-specific solutions, large differences in sub-national capacity, and the fact that more than 90% of its building stock already exists, with few guidelines or financing schemes for passive retrofits. It reported that passive cooling is mandatory under its green building code, which is tied to building permits and for existing buildings, to certificates of fitness with incentives such as additional building coverage for complaint buildings.

Lebanon presented passive cooling as a humanitarian and reconstruction priority, with an opportunity to build back better in homes, shelters and heritage quarters.

Pakistan described its 2023 updated green building code, a green taxonomy offering incentives, and the shift of federal public buildings in Islamabad to solar power and passive cooling, now being replicated at sub-national level.

Saint Lucia asked partners to support a small set of high-visibility demonstrations.

Seychelles raised land scarcity, cost and the need for capacity on building codes.

State of Tamil Nadu, India is scaling a school programme from 3 to 300 schools, but its policy could not be made mandatory because of the additional cost.

State of Maharashtra, India described its 2024 energy conservation and sustainable building code, property tax rebates for cool roofs and a possible floor space index bonus for developers.

Vietnam is preparing a technical guide for low carbon social housing under a programme of at least 1 million units by 2030, and reported a trial with Panasonic combining ceiling fans and air conditioning to raise set points.

Partners reinforced these points.

AFD called for a "passive first but not passive only" approach, with demand reduced through design before active cooling is sized, and "finance but not finance only", combining investment with policy and regulatory work.

ARUP reported a market assessment across five Southeast Asian countries found that evidence must be localized, that public institutions should lead by unlocking supply chains and codes, and that integrating passive measures with other programmes such as disaster relief helps unlock finance.

The Alliance for Climate Justice and Clean Energy cited a study indicating that almost 89% of Pakistan's population could be exposed to deadly heat in the coming decade, and called attention to peak loads on the power grid.

The ASEAN Centre for Energy presented the Roadmap for Extreme Heat Protection in the ASEAN region, developed with UNEP, and three priorities: pilot projects in public facilities such as schools and hospitals, embedding passive cooling in national building codes, and project pipelines that allow pilots to grow into investable programmes across the 11 member states.

To close, **Mr Satish Kumar, President and Executive Director, AEEE**, described AEEE's seven-year programme that has trained more than 10,000 architecture students to design net-zero-energy buildings with passive principles, and India's Housing for All scheme, under which 40 million homes have been built in the past decade and none will have air conditioning, making quality assurance of passive design the next frontier.

Facilitator **Benjamin Hickman**, in closing, highlighted the level of action already under way, the need to tailor solutions to climate, local materials and vulnerable communities including displaced populations and conflict-affected areas, and the significant requests for support being received through the EPIC Facility. Finance was the running theme, with a need to align finance programmes and aggregate projects. Countries were invited to provide written feedback on the work plan.

Lastly, in his closing remarks, to close the day, **Mr. Martin Krause, Director, CCD, UNEP** noted that the Assembly takes place in the context of overshoot and the need to prepare for a warmer world and presented the draft Work Plan 2027-2028 as built on country and city priorities, including 50 requests from 25 countries received through the first cycle of the EPIC Facility. The plan starts with the IGCC flagship initiative, a practical heat resilience roadmap for a warming world, with a launch hoped for at COP32, and gives importance to national cooling action plans and investment plans.

KEY RECOMMENDATIONS AND TAKEAWAYS

- 01 Move from pilots to jointly owned demonstrations**, starting with public buildings and social housing: Develop demonstrations with policy makers, developers, architects and designers, and measure thermal comfort, energy use and cost so that localized evidence can inform codes, procurement and finance. Schools, health facilities, shelters and social housing programmes can set the default through public procurement and help unlock supply chains, but specifications and cost norms are still needed.
- 02 Bring unregulated and existing buildings into view**: Informal, self-built and rural homes fall outside codes and finance, and existing buildings make up most of the stock in many countries. Simple, prescriptive passive design rules carried by states and cities, practical retrofit guidelines and financing schemes, and quality assurance in large public housing programmes are needed.
- 03 Provide tailored technical guidance and build skills**: Develop guidelines, design templates and checklists adapted to local climate, culture and construction, including for hot and humid, island and African contexts, with a focus on local materials. Expand skilling to architects, engineers and construction workers, establish third-party certification for passive cooling solutions, and work with universities so that passive design is taught from first principles.
- 04 Embed passive cooling in codes, planning and procurement from the start of design**, and plan passive and active cooling together: Support sub-national enforcement and verification of impact, address capacity differences between cities and regions, and reduce demand through design before sizing active cooling.
- 05 Align finance with market conditions**: Move from individual projects to aggregated pipelines with blended and concessional finance, use financial and non-financial incentives, explore carbon, adaptation and disaster finance, integrate passive cooling with other programmes, and develop a passive cooling taxonomy. Combine investment with policy and regulatory support and set programme ambition in line with market readiness.
- 06 Strengthen coordination and regional approaches**: Support inter-ministerial coordination, South-South and North-South exchange, regional roadmaps such as the ASEAN roadmap, and a programmatic approach to technical assistance in place of fragmented projects.

KEY OUTCOMES AND FOLLOW UPS

- **Participating countries and representatives from sub-national governments** including Ethiopia, Indonesia, Kenya, Pakistan, Vietnam, States of Maharashtra and State of Tamil Nadu, **expressed their backing for the workplan action area** and confirmed that passive cooling is already reflected in national and sub-national policy and that the main challenge is now implementation.
- **Participating countries and representatives from sub-national governments** including Bangladesh, Ethiopia, Ghana, Indonesia, Lebanon, Maldives, Saint Lucia, The Seychelles, Tamil Nadu and Vietnam **are seeking partnership to move from policy to implementation** through:

i. Demonstrations in schools, public buildings, and social housing, ii) Technical guidance, capacity and certification, iii) Finance, bankable proposals and retrofit financing.

- **Participating partners** including ASEAN Centre for Energy (ACE), AEEE, AFD AND ARUP **backed the action area and offered platforms and expertise.**
- **Advance the next phase for the received EPIC requests through country dialogues and workplan development** and follow up on the country support requests made during the session (Bangladesh, Cambodia, Ethiopia, Ghana, Indonesia, Lebanon, the Maldives, Saint Lucia, the Seychelles, Vietnam and the State of Tamil Nadu). Match these requests with partners that have expressed interest where possible.

ANNOUNCEMENT OF THE GEF-8 NATURE FOR COOLING CHALLENGE PROJECT

FACILITATOR	Mr. Gennai Kamata , Programme Manager, Nature for Cooling Challenge (NCC), UNEP
SPEAKERS	H.E. Adalberto Maluf, National Secretary for Urban Environment, Water Resources and Environmental Quality, Ministry of Environment and Climate Change, Brazil H.E. Pak Sokharavuth, Under Secretary of State, Ministry of Environment, Cambodia Mr. Mollé Bian Donatien, Director of Studies, Materials and Architecture, Ministry of Urban Planning, Housing and Living Environment, Côte d'Ivoire Mr. Manoj Kumar Muthumanickam, Programme Management Officer, UNEP
COUNTRY INTERVENTIONS	Brazil, Cambodia, Côte d'Ivoire
ORGANIZATION INTERVENTIONS	UNEP, Sustainable Energy for All (SEforALL)

DISCUSSION SUMMARY

The session launched the GEF-8 Nature for Cooling Challenge, a multi-country project run by the UNEP Cool Coalition with SEforALL.

Mr. Gennai Kamata, noted that the NCC is a competition that helps cities and developers use nature to provide thermal comfort and to cut cooling demand and emissions from buildings. Its focus is nature in and around buildings, such as green walls, green roofs and trees planted for shade. The project aims at both adaptation to extreme heat and mitigation, because green walls and roofs act as insulation and trees shade buildings, which lowers indoor temperatures, cooling demand and CO2 emissions. It runs for three years (2026–2029) with USD 3 million for global and country activities, co-financed with USD 33 million. One distinctive feature, encouraged by the GEF, is working with real estate developers, since most building development happens in the private sector. The project is therefore developing financial and business incentives to draw developer investment into nature, such as floor area ratio (FAR) bonus programmes. Alongside this, it is building guidelines and a database of nature-based solutions, running design workshops and a study tour, and holding bilateral consultations with landscape designers and engineers. The three countries come from different regions so that the project can build global knowledge on nature-based cooling.

H.E. Adalberto Maluf, National Secretary for Urban Environment, Water Resources and Environmental Quality, Ministry of Environment and Climate Change, Brazil, sees nature-based solutions as one of the most powerful and cost-effective tools against urban heat, and as a way to advance adaptation, biodiversity, public health and social inclusion at the same time. Brazil's aim is to move beyond isolated green projects towards connected green and blue infrastructure that is

part of mainstream urban planning, housing, mobility and climate policy. Brazil has just finished a national strategy for nature-based solutions in cities. Its first priority is expanding green and blue infrastructure such as parks, green corridors and biodiversity connections. The second is climate justice, targeting low-income, informal and vulnerable neighborhoods; this work is supported by the green Resilient Cities programme, with German support for a project bank and investments. The third is scaling up from pilots to systemic change, including bringing nature-based solutions into procurement and setting up monitoring. For Brazil, the value of the Challenge lies in tackling key city barriers: it supports project preparation and feasibility studies, strengthens local technical capacity, and provides tools to identify cooling hotspots and quantify costs and benefits. It also connects project proponents with climate finance institutions and investors.

H.E. Pak Sokharavuth, highlighted that Cambodia's participation is closely aligned with the Pentagonal Strategy Phase I and the Ministry of Environment's Circular Strategy on Environment, under the priority "clean, green and sustainable." It also fits Cambodia's NDC 3.0 and National Cooling Action Plan. Cambodia's approach is to reduce unnecessary cooling demand first and then improve the efficiency of the cooling that is still needed. Cambodia set out four priorities for the Challenge. The first is strengthening the evidence base through heat assessment and hotspot mapping, together with national capacity to measure changes in temperature, cooling demand, electricity use and greenhouse gas emissions. The second is moving from policy to practical demonstrations that combine urban greening, shade, green roofs, permeable surfaces and green corridors with passive building design. The third is using those demonstrations to inform urban planning, green building standards, building codes, environmental impact assessment, public infrastructure and green procurement, while showing that nature-based cooling is bankable. The fourth is strengthening participation from the private sector, including real estate developers, architects, engineers, landscape designers and financial institutions. Cambodia defines success as a pathway from assessment to demonstration, from demonstration to policy, from policy to investment, and finally to replication and scale.

Mr. Mollé Bian Donatien, Director of Studies, Materials and Architecture, Ministry of Urban Planning, Housing and Living Environment, Côte d'Ivoire notes that Côte d'Ivoire is urbanizing rapidly: more than 51% of the population now lives in urban areas, and Greater Abidjan has over 7 million people, about a quarter of the national population. Its cities face urban heat islands, rising temperatures and extreme rainfall, which affect public health, infrastructure and productivity. From Côte d'Ivoire's perspective, urban cooling cannot rely only on air conditioning and must be built into the design of cities, buildings and public spaces from the start. The country already has several practical examples. Banco National Park covers about 3,400 hectares and is presented as "the green heart of Abidjan." The former Akouédo landfill has been converted into an urban park, with containment, leachate treatment and biogas-to-electricity. The Kouto Balafon School is built from local earth, with a reported "+7°C thermal comfort gain." EDGE-certified buildings include Tower F and a city mall, with solar shading, double-skin façades, and energy and water efficiency. Together, these initiatives lay the foundation for a future national strategy.

KEY RECOMMENDATIONS AND TAKEAWAYS

- 01 Adaptation and mitigation:** Nature-based solutions help people adapt to extreme heat and also reduce cooling demand and CO₂ emissions, so they belong in both adaptation and mitigation agendas.
- 02 Demand reduction first:** Urban cooling cannot rely only on air conditioning. Cities should first cut cooling demand through passive and nature-based measures, then make the remaining cooling more efficient (Côte d'Ivoire, Cambodia).
- 03 From pilots to systems:** Isolated pilots need to become connected green and blue infrastructure, built into planning, building codes, procurement and monitoring (Brazil, Cambodia).
- 04 Climate justice:** Vulnerable and low-income neighbourhoods and critical sites such as schools, health centres and markets should be prioritised.
- 05 Private sector and bankability:** Governments "cannot transform our city alone." Scaling up needs private developers, brought in through incentives such as FAR bonuses, and evidence such as heat mapping and quantified benefits to make projects investment-ready and bankable.
- 06 Role of GEF finance:** The GEF can use grants to remove policy barriers and turn cooling plans into investment-ready pipelines. It can also use concessional and blended finance, combined with philanthropic and other grant finance, to tackle market risks.

KEY OUTCOMES AND FOLLOW UPS

- **Formal launch of the GEF-8 Nature for Cooling Challenge:** UNEP/Cool Coalition with SEforALL, Brazil, Cambodia and Côte d'Ivoire, 2026–2029, USD 3 million co-financed with USD 33 million.
- **The Challenge will select the most promising nature-based cooling proposals from the three countries.** Winners get financial and technical support from UNEP and SEforALL.
- **Brazil announced it has just finished its national strategy for nature-based solutions in cities,** with heat mitigation and climate justice at its centre.
- **Cambodia committed to work closely with partners** and share its experience with other countries facing similar problems.
- **Côte d'Ivoire's stated ambition** is to make nature-based cooling "a cornerstone" of its urban and climate policies.
- **GEF-9:** following input from UNEP and others during GEF-9 programming, cooling and extreme heat are now "much more prominent and explicit" in the GEF programming framework. Countries can also program under the Sustainable Cities Integrated Program, which offers incentives on top of their STAR allocation.

IGCC SESSION 3 - MOBILIZING FINANCE FOR HEAT RESILIENCE AND SUSTAINABLE COOLING

FACILITATOR	Ms. Hanane Hafraoui , Programme Lead, Platforms and Country Programmes, UNEP
SPEAKERS	Mr. Jonathan Coony , Global Lead for Green Competitiveness, Finance, Competitiveness & Innovation, World Bank Group Mr. Boon Heong , CEO, Temasek Foundation
COUNTRY INTERVENTIONS	Lebanon, Republic of Moldova, Mauritius, Spain, Viet Nam, Saint Lucia, Sri Lanka, Nigeria (with a Lagos State Government colleague present), Singapore, India (Uttar Pradesh), Maldives, Germany, Bangladesh, Pakistan, and Brazil (COP30 Presidency).
ORGANIZATION INTERVENTIONS	World Bank Group, Temasek Foundation and the Asian Development Bank (ADB).

DISCUSSION SUMMARY

This session focused on reviewing progress and discussing support for mobilizing finance and investment for heat resilience and sustainable cooling, as a core commitment under the Global Cooling Pledge, with countries and partners on workplan Action Area 4: Mobilizing finance and investment for cooling and heat resilience for the implementation of the Pledge.

Ms. Hanane Hafraoui, in her opening remarks, emphasized that the central challenge is now one of implementation. It gave particular attention to project development, bankable pipelines, blended and concessional finance, philanthropic capital, domestic financial institutions, carbon markets and Article 6, and to the specific constraints faced by small markets and small island developing states.

She also highlighted the Cooling Financial Assessment Framework (CFAF) developed by UNEP and the World Bank Group, the need to integrate cooling into existing climate and development finance architecture rather than creating separate financing systems, and estimates that closing cooling-access gaps in developing countries could require US\$400–800 billion.

Mr. Jonathan Coony, Global Lead for Green Competitiveness, Finance, Competitiveness & Innovation, World Bank Group, as the rapporteur, presented key lessons from the Assembly's previous discussions. It emphasized that mitigation and adaptation finance should be treated as integrated objectives, that finance should be embedded at the project design stage, and that domestic and international banks need to be more actively engaged. The World Bank Group noted that no cooling-related Article 6.2 transaction had yet been concluded, while highlighting a Switzerland–Ghana partnership as a promising example. It pointed to



blended concessional finance through the GCF–World Bank cooling facility and to public-private partnerships as means of lowering the cost of capital, particularly for Cooling-as-a-Service. In response to country questions, it confirmed that dedicated climate finance expertise is generally needed and that it is supporting climate finance units in selected countries. It also expressed interest in scaling Cooling-as-a-Service in Nigeria and cautioned that carbon finance is results-based and does not in itself provide upfront capital.

Mr. Boon Heong, CEO, Temasek Foundation, emphasized that philanthropic capital, while small relative to public and private finance, can take on early-stage risk through pilots, with long-term ownership and scale-up passing to governments, the private sector and multilateral institutions. The Foundation highlighted its Global Climate Innovation Challenge, through which approximately US\$15 million in upfront risk capital has helped participating companies mobilize more than US\$500 million in follow-on finance, as well as a hydrogel cooling apparel pilot for outdoor workers. It also presented a smallholder rice programme in Indonesia, where a 50 per cent loan guarantee reduced borrowing rates from 20–50 per cent to approximately 8–10 per cent, and called for co-creation rather than collaboration alone.

Countries confirmed that the central challenge is now implementation: converting national priorities and cooling plans into investment-ready programmes and projects.

ALL: Participating countries and representatives from the sub-national governments expressed their backing for this workplan area as responding to their needs and engaged on how it should be developed over the next two years.

Bangladesh noted that funding windows, including the GCF cooling facility, are available, but that the principal challenge is converting project ideas into fully researched, costed, legally structured and investment-ready proposals. Bangladesh requested technical support from UNEP and international partners to develop bankable projects and improve access to climate finance.

Pakistan highlighted structural barriers and lengthy procedures in accessing carbon and climate finance. Pakistan sought clarification on how Global Cooling Pledge activities would link with existing financing mechanisms, including the Adaptation Fund and the Fund for Responding to Loss and Damage.

Brazil, on behalf of the COP30 Presidency, cautioned against using scarce concessional finance for solutions capable of attracting private investment, which could displace adaptation projects lacking viable business models. Brazil also

highlighted the Global Implementation Accelerator, co-designed by the COP30 and COP31 Presidencies, as a potential avenue to fast-track and mobilize resources for cooling solutions forming part of the COP Action Agenda.

Germany emphasized that Article 6 is an instrument for raising ambition and additionality, and that business-as-usual activities should not qualify. Germany stressed that mitigation outcomes from cooling projects belong to the host country, underlining the need for robust national carbon market frameworks and positive lists that include cooling. It called for active cooling projects to use ultra-low-GWP refrigerants and the most efficient technologies. Germany highlighted its support for Article 6 cooling initiatives in Southern Africa and Ghana, a free online training course, and an Article 6.4 cooling methodology to be submitted by the end of the year. It also proposed bringing cooling into African carbon market alliances to support peer learning.

Lebanon emphasized that its principal challenge is not a lack of strategies. Its updated National Cooling Action Plan already identifies rebates, levies, efficiency incentives and private-sector engagement models; the challenge is converting these into investable programmes capable of attracting capital at scale. Lebanon highlighted blended finance, guarantees, concessional lending and pay-as-you-save financing as market enablers, and identified Article 6 opportunities in refrigerant recovery and destruction, lifecycle refrigerant management and energy efficiency. It called for NCAPs to be transformed into investment platforms with pipelines of bankable projects, supported by partners on project preparation and de-risking.

Maldives emphasized that cooling, while a necessity, is often deprioritized among competing climate priorities in small island developing states and should be mainstreamed into existing funding opportunities. Maldives highlighted the difficulty of moving from small pilots to investment at scale, noting that blended finance can be difficult to access and structure given small project sizes, limited institutional capacity and high transaction costs. It called for simpler, more accessible financing approaches tailored to SIDS circumstances.

Mauritius noted that national teams preparing funding proposals are largely technical. It asked whether dedicated climate finance expertise is required to develop the risk analyses, business models and revenue models expected by financiers.

Nigeria highlighted the success of IFC-supported Cooling-as-a-Service programmes and called for them to be scaled across the country, citing the absorptive capacity of a population of 240 million and of Lagos State. Nigeria questioned whether Article 6, given its complexity and slow pace, can scale cooling finance, and asked whether complementary carbon market mechanisms exist. It also expressed interest in Temasek Foundation's work on rice methane.

Saint Lucia emphasized that the financing challenge is not simply identifying funds. It is determining which mechanisms are viable for households, businesses and public facilities in a small island market, among options such as replacement programmes, on-bill financing, leasing, public procurement and Cooling-as-a-Service. Saint Lucia called for support combining project preparation, financial structuring and implementation capacity with access to capital. Noting that cooling spans NDC-related climate finance, adaptation finance and Montreal Protocol finance, it proposed packaging these into a single coordinated investment programme or consortium drawing on multiple funding sources.

Sri Lanka noted that its cooling plan, initiated with UNDP support, was disrupted by the 2022 financial crisis. Sri Lanka expressed confidence that a national cooling implementation plan could be completed within a short period with UNEP

technical and financial support, building on green building innovation and national policies on green energy and carbon crediting.

Singapore highlighted the Financing Asia's Transition Partnership (FAST-P), announced at COP28. FAST-P is a blended finance initiative bringing together public, private and philanthropic capital, with an ambition to mobilize up to US\$5 billion for green and transition projects in Asia. Singapore noted that it has signed eleven Article 6.2 implementation agreements and stressed that carbon finance should complement other sources of finance for project preparation, capacity building and risk reduction. It highlighted the need for measurable mitigation outcomes and credible methodologies for cooling, and offered to share its experience on bilateral frameworks, environmental integrity requirements and eligibility criteria.

Spain recognized the continued importance of public, multilateral and philanthropic finance, while noting that such funding is often complex and slow. Spain highlighted regulatory innovation as a complement, presenting its white certificate scheme, modelled on the French system, which has stimulated training, measurement and verification, and investment in the energy-savings sector. It encouraged countries to examine the French and Spanish models as complements to, rather than replacements for, subsidies and multilateral support.

The Republic of Moldova highlighted three key barriers: the high upfront costs of efficient and low-GWP technologies, a limited pipeline of investment-ready projects, and weak coordination between climate, energy-efficiency and private finance. It proposed adjustments to import taxation, support for technology transfer and climate-impact labelling, and called for grants, guarantees and blended finance to reduce investment risk. Moldova noted its memorandum of understanding with Japan under the Joint Crediting Mechanism and expressed interest in developing cooling and refrigeration projects under Article 6.2, as well as aligning cooling investments with the GCF and the Adaptation Fund.

Viet Nam emphasized the need to better connect research, government programmes, industry and demonstration projects, noting that existing green building initiatives with IFC and AFD remain limited in scale. Viet Nam proposed that UNEP convene a larger international research and implementation programme towards 2030, to which it could contribute national science and technology funding alongside international partners.

State of Uttar Pradesh, India highlighted the resource-efficiency and emissions-reduction potential of direct-seeded rice and alternate wetting and drying in paddy cultivation. It identified the lack of objective and practical methods for measuring methane reductions as a key barrier and noted that improved methodologies could create incentives for more efficient practices. UNEP noted the relevant work of the Climate and Clean Air Coalition.

Partners reinforced these points.

Asian Development Bank shared its experience supporting 13 countries in Asia and the Pacific to translate adaptation plans into investment programmes and pipelines, assess their economic and financial viability, and match them with appropriate financing. ADB emphasized that the challenge lies in packaging and sequencing instruments, including grants, concessional and blended finance, philanthropy and insurance, according to country context. It also stressed the importance of engaging ministries of finance early, including by prioritizing investment programmes within medium-term expenditure frameworks.

KEY RECOMMENDATIONS AND TAKEAWAYS

- 01** Project development is the central bottleneck. Countries need support to turn plans and NCAPs into bankable, investment-ready projects.
- 02** Finance and financial expertise should be integrated from the project design stage.
- 03** Countries should move from individual projects to aggregated investment pipelines, particularly in small markets and SIDS.
- 04** Financial instruments should be combined and sequenced according to context, rather than relying on any single source.
- 05** Concessional finance should be targeted at de-risking and activities unable to attract commercial capital.
- 06** Ministries of finance and domestic banks should be engaged early.
- 07** Philanthropic capital can de-risk pilots and demonstrate viability for scale-up.
- 08** Cooling should be integrated into existing climate, adaptation and Montreal Protocol finance architecture.
- 09** Article 6 offers opportunities but requires additionality, robust methodologies and host-country frameworks, and does not in itself provide upfront capital.
- 10** Regulatory instruments, such as white certificates, can complement public finance.

KEY OUTCOMES AND FOLLOW UPS

- **Participating countries and representatives from sub-national governments expressed their backing for the workplan Action Area** and confirmed that the central need is turning strategies and cooling plans into investable programmes.
- **Participating countries and representatives from sub-national governments** including Lebanon, The Republic of Moldova, Nigeria, Spain, Vietnam and Lagos State **set out the finance routes they want to pursue**:
 - i) Article 6 and carbon finance
 - ii) Scaling Cooling-as-a-Service
 - iii) Local models and incentives
 - iv) Wider programme and research partnerships
- **Participating countries** including Bangladesh, Lebanon, Saint Lucia, Maldives, The Republic of Moldova and Sri Lanka **requested support to prepare and structure projects** through
 - i) Technical support to develop bankable projects

- ii) Project preparation and de-risking: Lebanon.
- lii) Project preparation, financial structuring and implementation capacity, with access to capital
- iv) Simpler financing approaches suited to SIDS
- v) Grants, guarantees and blended finance
- **Participating countries** including Germany, Singapore and partners including World Bank Group, Asian Development Bank and Temasek Foundation **offered support to this workplan Action Area**
- **Cool Coalition Secretariat to advance exchanges on high-integrity Article 6.2 cooperation for cooling** with interested countries and partners.

IGCC SESSION 4 - A HEAT RESILIENCE ROADMAP FOR NATIONAL AND GLOBAL ACTION

FACILITATOR	Dr. Eleni Myrivili , Global Chief Heat Officer, UNEP
SPEAKERS	Mr. Amit Prothi , Director General, Coalition for Disaster Resilient Infrastructure Mr. Jiro Hiratsuka , Director, Ministry of the Environment, Japan Mr. Manoj Kumar Singh , Chief Executive Officer, State Transformation Commission, Uttar Pradesh, India
COUNTRY AND SUB-NATIONAL INTERVENTIONS	Bangladesh, Belgium, Cambodia, El Salvador, Uttar Pradesh, India, Japan, Lebanon, Singapore, Somalia, Spain, United Kingdom
ORGANIZATION INTERVENTIONS	Coalition for Disaster Resilient Infrastructure (CDRI), SEforALL

DISCUSSION SUMMARY

This session focused on Action Area 1: Flagship Initiative – Heat Resilience Roadmap for a Warming World , and gave countries and partners the opportunity to define what the roadmap should contain and how it should work.



Dr Eleni Myrivili, in her opening framing, presented the draft Heat Resilience Roadmap as a flexible, modular architecture, with the purpose of helping countries organize action around two outcomes – Keeping people safe and keeping systems running. Sustainable cooling was positioned as the main pathway to these outcomes. The roadmap has four modules. Governance for a strong political mandate, a mechanism to coordinate existing fragmented actions across levels of government.

Strategic action areas begin with a risk assessment across five categories – i) health and human well-being, ii) cities, buildings and public space, iii) critical infrastructure, iv) critical economic sectors and institutions, v) disaster preparedness, response and recovery and help countries prioritize. Solutions are organized in a taxonomy of 5 categories (i) behavioral and social, ii) nature-based, iii) passive design and planning, iv) active cooling and policy and v) governance and finance), to which the sustainable cooling hierarchy is applied.

Outcomes go beyond mortality and lost productivity to indicators such as people safe at home, workers protected at workplaces, schools and care facilities, and critical infrastructure ready for extreme heat. Dr. Myrivili stressed that the aim is to connect what countries already do, and not create another plan to report against, and illustrated how a cool

roof programme viewed through a heat resilience lens becomes relevant to adaptation, development, infrastructure, disaster risk reduction, public health and energy funding streams.

Mr. Amit Prothi, Director General, CDRI, as the rapporteur, highlighted that heat must be seen through a development lens, noting damage to railways, roads and hydropower, reduced grid efficiency and equipment lifetime, and the need to design transport and schools for vulnerable users. It described its short practical guidelines on heat in public transport and smart schools, and encouraged countries to share existing practices, such as rail systems designed for much higher temperatures.

Mr. Jiro Hiratsuka, Director, Ministry of the Environment, Japan described the 2023 amendment of its climate change adaptation law to cover heat, a heat stroke alert system with a stricter special alert, designation of cooling shelters in more than 1200 of about 1700 municipalities, a ministerial council chaired by the moe, and the long-running Cool Biz campaign on moderate air conditioning set points. It also presented passive radiative cooling materials, its refrigerant recovery framework, and its international cooperation through the Joint Crediting Mechanism.

Mr. Manoj Kumar Singh, Chief Executive Officer, State Transformation Commission, Uttar Pradesh, India, described how heat had been missing from ups 2047 development plan, how it worked with UNEP to build heat impact into the plans of more than 70 departments, and its interest in working further with UNEP, the Cool Coalition and financial institutions at state level.

In the IGCC session, Countries and sub-national governments confirmed that they are already working on aspects of the roadmap framework, and are ready for a more integrated process that connects existing plans.

ALL: Participating countries and representatives of sub-national governments expressed their backing for the roadmap and engaged on how it should be developed and work in practice over the next two years.

United Kingdom and Belgium stressed that the roadmap should help countries map and strengthen existing plans and connect responsibilities spread across institutions, with Belgium highlighting governance, data integration and securing political attention and UK highlighting the need for decision making under uncertainty.

Singapore called for archetypes, examples and adaptability to national circumstances, and for momentum beyond the Assembly, and offered its experience in urban heat assessment, passive cooling, energy efficiency and simulation.

Lebanon asked that the Roadmap remained people centered, involve communities early in design and use indicators that reflect the realities of those with the least access to cooling, and asked for clarity on co-design mechanisms and timelines.

Cambodia and El Salvador described how heat and cooling are already reflected in their NDCs and national cooling action plans and asked for support to move from planning to implementation, with technical assistance on heat risk, private sector incentives and project preparation.

Chile welcomed the roadmap and highlighted its alignment with their current mitigation and adaptation goals and the importance of regional dialogues in discussing key workplan topics. Chile also highlighted their current work with Article 6.

Spain highlighted the role of municipalities and the need for national and regional governments to support long-term municipal plans.

Bangladesh proposed a formal partnership with UNEP to establish a project preparation and capacity building facility for cooling and heat resilience, and a sub-national heat resilience pilot in Dhaka.

Somalia described its nearly finalized National Cooling Action Plan, its whole-of-government coordination, and a support request being prepared with UNEP.

Saint Lucia said it lacks a dedicated heat risk evidence base and asked for practical heat risk assessments that can be embedded in investment processes and described a tourism sectoral plan and a loss and damage concept brief on health and early action that could be built on.

SEforALL welcomed the roadmap and called for collaboration to close data gaps, citing its data showing 1.2 billion people at high risk from lack of access to cooling across 77 priority countries, and the need for granular local data.

ARUP welcomed the simplicity of the framework and its metrics on people and assets and emphasized co-benefits and the need to express impacts on social and economic terms.

In closing, the **Dr. Myrivili** concluded that countries and sub-national governments are already working on aspects of the framework and are ready for a more integrated process, that many agreed heat and cooling must be addressed together, and that participants support further co-design.

Countries were encouraged to provide written statements, with the aim of having something concrete to show by COP32 in Ethiopia.

KEY RECOMMENDATIONS AND TAKEAWAYS

- 01 Build on existing plans and secure a political mandate:** Help countries map and strengthen what they already have (NDCs, adaptation plans, national cooling action plans, health plans and building policies) and avoid a new plan or reporting burden. A mandate from the highest level and a coordination mechanism, without a new bureaucracy, were seen as key, and countries asked how to engage political leaders.
- 02 Keep the roadmap modular and people-centered:** Provide archetypes and examples that countries can adapt, involve communities from the early stages of design, and use indicators that reflect those with the least access to cooling alongside indicators for assets and critical infrastructure.
- 03 Build the heat risk evidence base:** Support heat risk and vulnerability assessments, particularly for small island developing states and sub-national governments, close gaps in granular local data, and take account of decision-making under uncertainty.

- 04 Integrate infrastructure and sector perspectives and support sub-national implementation:** Include heat in infrastructure planning (transport, power, schools and health facilities) through a development lens, and support cities, states and municipalities with long-term plans, city heat action plans and pilots.
- 05 Connect heat resilience with sustainable cooling, climate commitments and finance:** Integrate heat into NDCs, adaptation and monitoring systems, link it with efficient cooling and low-GWP refrigerants, and position investments such as cool roofs for multiple funding streams, with project preparation support and benefits expressed in social and economic terms.
- 06 Share practice across countries and regions:** Use examples such as Japan's alert system and cooling shelters, Singapore's heat assessment approach and infrastructure guidelines, and promote regional peer-to-peer learning.

KEY OUTCOMES AND FOLLOW UPS

- **Participating countries and representatives of sub-national governments confirmed readiness for a more integrated approach**, and participants supported further co-design of the heat resilience roadmap. Many agreed that heat and cooling must be addressed together. The facilitator requested written statements from all countries.
- **Participating countries and representatives of sub-national governments** including Bangladesh, Cambodia, El Salvador, Saint Lucia, Somalia and State of Uttar Pradesh, **want to take it forward in their own contexts and asked for support.**
- **Participating countries** including Singapore, Japan, **and partners** including ARUP, CDRI and SEforALL **offered their expertise and data in shaping and implementing the roadmap.**
- **UNEP Cool Coalition to advance discussions on the Heat Resilience Roadmap and continue co-designing with countries and partners, and to share the co-design process, collaboration mechanisms and timeline.**

ELEVATING HEAT RESILIENCE AND SUSTAINABLE COOLING IN GLOBAL CLIMATE AGENDA

FACILITATOR

Mr. Calvin Chong, Divisional Director, Energy and Climate Policy Division, Ministry for Sustainability and Environment, Singapore

SPEAKERS

Ms. Alice de Moraes Amorim Vogas, Program Director, COP30 Brazil Presidency

Mr. Volkan Polat, Head of Department at the Climate Change Directorate, Ministry of Environment, Urbanisation and Climate Change, Türkiye

Mr. Leake Tesfahunegn Gebretsadik, GHG Emissions Energy Sector MRV Senior Expert and Desk Head, Ethiopian Environmental Protection Authority, Ethiopia

DISCUSSION SUMMARY

The session convened representatives of the COP Troika for a fireside conversation on elevating heat resilience and sustainable cooling within the global climate agenda and carrying the Assembly's priorities forward to the twenty-first session of the Conference of the Parties (COP31).

Opening the discussion, the moderator, **Mr. Calvin Chong**, drew two reflections from the Assembly's deliberations. First, heat resilience and sustainable cooling must be addressed together, as extreme heat is increasingly a national concern with consequences for economies, food and water security, workers and livelihoods, not solely an environmental one. Second, no single solution exists, and passive, hybrid and active cooling approaches must be complemented by measures that strengthen the resilience of workers, households and vulnerable communities. He invited the panellists to identify one concrete step their countries could take to elevate sustainable cooling and heat resilience, nationally or through the COP process, and to consider how the Troika might maintain continuity on these priorities across successive presidencies.

Ms. Alice de Moraes Amorim Vogas, Programme Director of the COP30 Presidency, noted that the Global Cooling Pledge was a clear example of how the COP process can elevate issues that are widely recognised as important but had not previously been mainstreamed. She recalled that, following the adoption of the Paris AGREement and its rulebook, the international climate regime has entered a phase focused on accelerated implementation, and that the Global Climate Action Agenda had been reshaped to mobilise existing capacity, knowledge and infrastructure in support of delivery. The Beat the Heat Implementation Drive formed part of this response. Ms. Vogas emphasised the need for the negotiation track and the Action Agenda to converge rather than proceed in parallel. She called for better use of the period between cops, including regional climate weeks and the Bonn sessions, to address implementation challenges, and for the creation of spaces in which subnational governments, businesses and practitioners can engage directly with national governments. She further underlined that action on extreme heat and sustainable cooling must explicitly address climate justice, observing that climate policies are not neutral in their social and economic outcomes and that sustained social and political support for the climate regime depends on demonstrating how solutions improve people's well-being. The moderator underscored that sustainable cooling is as much a political issue as a technical one.

Mr. Volkan Polat of the Ministry of Environment, Urbanisation and Climate Change of Türkiye outlined his country's progress on the phase-out of ozone-depleting substances and the phase-down of hydrofluorocarbons (hfc's), beginning with Türkiye's accession to the Montreal Protocol in 1991 and advanced through the 2021 Climate Law and its implementing regulations. He explained that HFC imports are governed through an annual quota allocation and licensing system, and stressed that effective customs enforcement is essential, given that tighter restrictions may increase the risk of illegal trade in refrigerants. Mr. Polat highlighted the contribution of the Cool Up programme to the development of Türkiye's National Cooling Action Plan (NCAP). The NCAP was prepared through a participatory process involving multiple ministries and associations and constitutes the country's first national roadmap addressing both direct and indirect greenhouse gas emissions from cooling, integrating energy efficiency, refrigerant transition and cooling demand management. It is aligned with national climate, energy and development policies and will be implemented in three phases towards 2053:

- In the short term, the focus is on policy, standards, testing infrastructure, safety and financing mechanisms.
- In the medium term, the focus is on market transformation through building retrofits, low-global-warming-potential (GWP) technologies and smart grids.
- In the long term, the focus is on decarbonisation through zero-emission technologies, integrated urban planning, digital solutions and circular systems.

Six priority actions were identified: strengthened building codes, alignment with international standards, mandatory energy audits, safety rules for natural refrigerants, alignment of fluorinated gas (F-gas) legislation with that of the European Union, and a financing mechanism for sustainable cooling.

Turning to COP31, Mr. Polat confirmed that the conference will be held in Antalya from 9 to 20 November 2026. Under the aGREEd arrangements, Türkiye holds the COP presidency and leads the Action Agenda, while Australia holds the presidency of the negotiations, with the two countries working as a single team. A pre-COP meeting in the Pacific will carry the priorities of Pacific and other climate-vulnerable countries to Antalya. The Presidency's approach will be guided by the principles of dialogue, consensus and action, and its agenda is structured around ten priority themes, with finance and technology as cross-cutting enablers. Mr. Polat noted that sustainable cooling is directly linked to several of these themes, notably clean energy, climate resilience, buildings, green industrialization and resilient health systems, and described the associated 2035 targets as "open invitations" to accelerate implementation rather than new obligations. He invited participants to COP31 and expressed Türkiye's support for Singapore's proposal.

Mr. Leake Tesfahunegn Gebretsadik of the Ethiopian Environmental Protection Authority described extreme heat as an immediate reality across Africa and a direct threat to human survival, economic productivity, public health and food security. He highlighted Ethiopia's Green Legacy Initiative, under which billions of seedlings have been planted, as a large-scale nature-based solution to restore degraded land, create microclimates and reduce urban heat. Mr. Gebretsadik cautioned that meeting rising cooling demand with conventional technologies risks "cooling our buildings while overheating our planet", and affirmed Ethiopia's commitment to transition towards sustainable, energy-efficient and climate-friendly cooling in line with the Kigali Amendment to the Montreal Protocol. He stated that heat resilience action must be grounded in national and local realities, action-oriented and adequately financed, and inclusive and collaborative. He called for an integrated approach with five elements:

- Integration of heat risk into National Adaptation Plans (naps).
- Promotion of cooling solutions together with energy efficiency and low-carbon technologies.
- Greater attention to urban planning and nature-based solutions.
- Improved climate and vulnerability information and monitoring.
- Strong cross-sectoral coordination.

He further emphasised the importance of global collaboration in scaling finance for passive and nature-based infrastructure, technology and knowledge transfer, and local cold chain and manufacturing capacity.

In a concluding round, each panellist shared a key takeaway from the Assembly, as reflected below. Owing to time constraints, the question of continuity across successive COP presidencies was not taken up in detail. In closing, the moderator observed that the three countries shared a strong commitment to an implementation-oriented agenda, grounded in alignment with national and local priorities, mutual learning through partnerships and a whole-of-society approach engaging financial institutions, the private sector and local communities.

KEY RECOMMENDATIONS AND TAKEAWAYS

- 01 Address heat resilience and sustainable cooling together, as a national concern.** Extreme heat affects economies, food and water security, workers and livelihoods, and not only the environment. No single solution exists, so passive, hybrid and active cooling need to be complemented by measures that strengthen the resilience of workers, households and vulnerable communities.
- 02 Make cooling a political priority as well as a technical one, grounded in climate justice.** Climate policies are not neutral in their social and economic outcomes, and sustained support for the climate regime depends on showing how solutions improve people's well-being.
- 03 Converge the negotiation track and the Action Agenda, and use the periods between cops.** Regional climate weeks and the Bonn sessions can be used to address implementation challenges. Spaces are needed where sub-national governments, businesses and practitioners can engage directly with national governments.
- 04 Link cooling to the wider COP31 agenda.** Sustainable cooling connects directly to several COP31 priority themes, including clean energy, climate resilience, buildings, green industrialization and resilient health systems, and the 2035 targets were described as "open invitations" to accelerate implementation and not new obligations.

KEY OUTCOMES AND FOLLOW UPS

- The COP30 Presidency, Türkiye and Ethiopia backed an implementation-oriented agenda for heat resilience and sustainable cooling.

- Türkiye confirmed the route to COP31 and Ethiopia affirmed its commitment to sustainable, energy-efficient cooling in line with the Kigali Amendment and called for partnership.
- Cool Coalition Secretariat and the IGCC to work with the Troika presidencies to carry the Assembly priorities into COP31 in Antalya, to explore the use of inter-COP spaces (regional climate weeks and the Bonn sessions) for implementation,



IGCC SESSION 5 – GLOBAL COOLING PLEDGE ASSEMBLY OUTCOMES

FACILITATOR	Mr. Martin Krause , Director, Climate Change Division, UNEP
SPEAKERS	H.E. Adalberto Maluf, National Secretary for Urban Environment, Water, Resources and Environmental Quality, Ministry of Environment and Climate Change, Brazil (Co-Chair) Ms. Somayyah Abdulla Alyammahi, Director of Productivity and Demand Department, Ministry of Energy and Infrastructure, UAE Mr. Calvin Chong, Divisional Director, Energy and Climate Policy Division, Ministry for Sustainability and Environment, Singapore Mr. Noah Horowitz, Senior Director, Clean Cooling Collaborative
COUNTRY INTERVENTIONS	Brazil, United Arab Emirates, Singapore, St. Lucia, Ghana, Pakistan, Lebanon, Bangladesh, Vietnam, Kenya, Armenia, Belgium, Cambodia, Uttar Pradesh and Maharashtra - India, Germany, Zimbabwe, Sri Lanka, El Salvador, Peru
PARTICIPATING ORGANIZATION INTERVENTIONS	Climateworks Foundation / Clean Cooling Collaborative, Danfoss, Sustainable Energy for All, ASEAN Centre for Energy

DISCUSSION SUMMARY

The session reflected on the outcomes of the four-day Global Cooling Pledge Assembly and focused on translating the Assembly's recommendations into the IGCC 2027-2028 work plan. The discussion emphasized a shift from commitments and planning towards country-led implementation, with particular attention to heat resilience, sustainable cooling, finance, market transformation, technology access, national and subnational delivery, and stronger coordination across ministries and stakeholders. The session also highlighted the proposed Global Heat Resilience Roadmap, the Singapore Assembly Outcome Statement, the manufacturing platform and the need to use the IGCC work plan as a pathway to deliver.

H.E. Adalberto Maluf, National Secretary for Urban Environment, Water, Resources and Environmental Quality, Ministry of Environment and Climate Change, Brazil (Co-Chair) emphasized that heat and cooling should be treated as a multi-level governance issue involving national ministries, cities, utilities, health, civil defence, planning and environmental authorities. Brazil highlighted the proposed Global Heat Resilience Roadmap as an important mechanism for bringing the issue to the attention of finance ministers, mayors, development banks and other decision-makers and for translating the agenda into investments and implementation. Brazil called for heat resilience and sustainable cooling to be embedded in national climate plans and supported the development of a political declaration on heat resilience and sustainable cooling in a warming world towards COP31 and beyond. Brazil also expressed readiness to work with countries and partners through the IGCC 2027-2028 work plan and proposed launching the Global Heat Resilience Roadmap at COP32.



Ms. Somayyah Abdulla Alyammahi, Director of Productivity and Demand Department, Ministry of Energy and Infrastructure, UAE, highlighted the significance of the first formal IGCC meeting and called for the 2027-2028 work plan to move towards clear activities, delivery and results. The UAE stressed the need to elevate extreme heat and sustainable cooling, particularly for affected and vulnerable groups, within the political agenda and to ensure that these issues are reflected in the second Global Stocktake process beginning at

COP31. The UAE also emphasized the importance of keeping supply and demand moving together and highlighted the manufacturing platform as a mechanism for connecting government policy and market demand with industry capacity.

Mr. Calvin Chong, Divisional Director, Energy and Climate Policy Division, Ministry for Sustainability and Environment, Singapore, presented the key messages emerging from the Assembly Outcome Statement. Singapore highlighted three areas of convergence: strengthening an ecosystem for pledge implementation through governments, private sector, academia and local communities; strengthening a shared agenda on heat resilience and sustainable cooling; and prioritising country-led delivery. Mechanisms highlighted included thematic action coalitions, country dialogues, the manufacturing platform, the Nature for Cooling Challenge, and EPIC. Singapore noted that countries had submitted more than 50 requests to the EPIC facility and highlighted priorities including national cooling action plans, passive cooling, green building codes, minimum energy performance standards, district cooling, cold chains, demand flexibility and renewable energy integration.

Mr. Noah Horowitz, Senior Director, Clean Cooling Collaborative emphasized the importance of maintaining a broad implementation ecosystem involving governments, partners and philanthropy. The organization highlighted the need to connect passive design, energy efficiency, cooling access and refrigerant transition and stressed that work across different institutional mandates must remain coordinated. It noted that philanthropic support could contribute to modelling, policy development and programme design and confirmed co-funding support for EPIC. The intervention also highlighted heat and humidity as an important combined risk and called for improved communication systems, metrics and cooling equipment that can better manage humidity.

Several participating countries and representatives of state governments, set out their priorities for the work plan and the support they need.

Participating countries and representatives of sub-national governments confirmed the shift from commitments and planning to country-led implementation and engaged on how the IGCC 2027-2028 work plan can deliver it.

Armenia called for rapid movement from commitments to country-level implementation. Armenia identified heat resilience, energy efficiency, climate-friendly cooling, transition to low-GWP refrigerants and improved building energy performance as key priorities. It emphasized translating Assembly outcomes into measurable actions and strong national policies while strengthening cooperation with international partners and financial institutions.

Bangladesh called for stronger connections between national cooling plans and finance and emphasized that heat resilience should be treated as an adaptation emergency rather than only an energy efficiency objective. Bangladesh proposed a dedicated project preparation facility or window under EPIC to help countries translate cooling priorities into investable project pipelines. Bangladesh also supported development of the Global Heat Resilience Roadmap as a mechanism for amplifying and financing national heat resilience priorities and expressed readiness to work with UNEP and the IGCC to pilot these approaches.

Belgium highlighted the value of the Assembly as an opportunity to learn from practical experiences and realities across countries. Belgium emphasized the importance of learning from experiences around the world and collaborating actively through the global cooling agenda, with an intention to take these messages back to Europe.

Cambodia emphasized that the Assembly marked a shift from commitment to implementation and called for the IGCC to ensure that global cooling commitments result in practical action at national and local levels. Cambodia proposed four priorities for the 2027-2028 work plan: strengthening national capacity and implementation; mobilizing finance and developing bankable projects; accelerating market transformation; and strengthening heat resilience as an integrated global priority. Cambodia highlighted heat risk assessments, heat action plans, passive cooling, urban greening and nature-based solutions, public building demonstrations, connections with the GCF, Adaptation Fund, development banks and private investors, and the manufacturing platform. Cambodia also expressed particular interest in passive cooling, nature-based solutions, heat-resilient urban development and public building demonstrations and highlighted the Nature for Cooling Challenge as an opportunity to demonstrate local implementation.

El Salvador emphasized that sustainable cooling needs to be understood as both a mitigation and adaptation priority, particularly in vulnerable developing countries. El Salvador identified four strategic priorities: improving access to climate finance; strengthening national implementation capacity, including technician training, regulatory enforcement, energy auditing and minimum energy and cooling standards; strengthening data-driven policy formulation and integration with NDCs and naps; and expanding public awareness and cross-sectoral engagement. El Salvador called for expanded technical and financial support facilities and wider dissemination of research, analytical frameworks and practical guidance emerging from the Assembly.



Germany emphasized the importance of bringing energy, climate and ozone institutions together and using the Global Cooling Pledge as a platform to strengthen cross-institutional coordination. Germany identified the manufacturing platform as an important area for concrete follow-up and called for clear criteria and a defined level of ambition for the platform ahead of COP31 and COP32. Germany encouraged the IGCC and partners to be ambitious in taking the initiative forward.

Ghana called for stronger coordination among energy, climate and ozone focal points, describing this as an intentional effort to overcome separate institutional mandates and align towards common climate objectives. Ghana highlighted the manufacturing platform but stressed that supply-side engagement needs to be matched by demand and improved access to technology. It proposed exploring a buyers' club-type approach to aggregate demand and improve access to efficient technologies. Ghana also emphasized passive cooling, integration into building codes and energy efficiency measures, and the importance of local materials and context-appropriate construction approaches.

Kenya, speaking from a subnational perspective, emphasized the importance of decentralizing national cooling action planning so that it translates into tangible actions at subnational level. Kenya noted that national plans developed several years ago may no longer reflect current climate conditions and called for planning to respond to rapidly changing local circumstances. Kenya also emphasized community-based passive designs and the need for financing to enable such solutions to have meaningful impact.

Lebanon emphasized the need to translate commitments into implementation and highlighted EPIC as a mechanism for accelerating support to companies and projects. Lebanon stressed that heat resilience and sustainable cooling should be addressed together, particularly for vulnerable communities. It proposed that the IGCC work plan focus on operationalizing thematic action coalitions, responding to EPIC requests, advancing the Global Heat Resilience Roadmap, showcasing country implementation success stories, and reporting measurable progress on cooling access, heat resilience, energy efficiency and related outcomes.

Pakistan highlighted the different geographical and national circumstances faced by countries while noting the common challenge of extreme heat. Pakistan emphasized that South Asian countries are experiencing temperatures exceeding 45°C in both urban and rural areas and called for country perspectives to be prioritized through regional approaches before developing project proposals. Pakistan also called for support to develop country-specific projects and implementation approaches for addressing extreme heat.

Peru highlighted its ongoing efforts to phase out hcfcs, implement HFC-related schedules, strengthen refrigerant recovery and recycling, adopt standards for lower-impact refrigerants and strengthen certification in the refrigeration and air-conditioning sector. Peru noted that its NDC 3.0 and long-term climate strategy address refrigerant emissions and integrate adaptation priorities, nature-based solutions and passive approaches alongside energy efficiency. Peru emphasized that sustainable cooling is essential for climate justice, public health, food security and resilient development.

Saint Lucia emphasized that the Assembly's strong focus on implementation should lead to existing strategies and commitments being translated into prioritized projects, responsibilities and roadmaps. From a small island developing state perspective, St. Lucia called for regional approaches where market size presents constraints, particularly for testing, compliance systems and refrigerant life-cycle management. It also highlighted the need to account for water scarcity when considering nature-based and green cooling solutions, noting potential trade-offs between maintaining green infrastructure and meeting basic water needs. St. Lucia additionally raised the issue of mould in public and government buildings, linking it to humidity, building design and cooling conditions.

Sri Lanka outlined a concrete domestic implementation pathway following the Assembly. Sri Lanka proposed establishing an interministerial committee, updating its national cooling plan and implementation plan, undertaking a consultation/consolidation process and then moving into implementation through interministerial collaboration. The representative indicated an ambition to complete the process around mid-2027.

Vietnam highlighted the value of existing UNEP and partner support in sustainable cooling and the building sector and emphasized the importance of connecting international support with existing national programmes. Vietnam noted existing national programmes on green buildings and sustainable cooling and initiatives related to low-income social housing, alongside engagement with development partners, financial institutions and the private sector. Vietnam called for the IGCC and EPIC network to connect these existing programmes with appropriate technical, financial and implementation partners, rather than creating additional standalone initiatives.

Zimbabwe highlighted the importance of rural populations and livelihood systems, noting that approximately 62% of the country's population lives in rural areas and that livelihoods are strongly linked to agriculture. Zimbabwe called for greater attention to rural cooling and heat resilience, including nature-based approaches, water stress and the impacts of heat on agricultural systems. It also highlighted the need for better planning through local authorities as smaller business centres develop into urban centres, with opportunities to integrate passive cooling and avoid future planning challenges. Zimbabwe expressed readiness to partner on demonstrations focused on heat stress resilience and livelihoods.

State Maharashtra, India described the Assembly as a useful learning and knowledge-sharing opportunity and highlighted the value of conducting a SWOT analysis of cooling-related measures in the state. The representative also referred to India's environmental clearance framework for large building and infrastructure projects and expressed interest in applying the learning from the Assembly to relevant state-level work.

State of Uttar Pradesh, India emphasized the need for cooling strategies that specifically address poor and resource-constrained communities, including communities living in informal settlements. The representative noted that general population-wide strategies may not be accessible to these communities. Uttar Pradesh also highlighted its collaboration with UNEP on a heat resilience plan as part of its perspective plan for 2047 and expressed interest in moving towards implementation.

Partners reinforced these priorities and offered support for implementation.

ASEAN Centre for Energy emphasized that increasing heat waves are affecting public health, food security, economic productivity and urban systems and that sustainable cooling is therefore a cross-sectoral issue. It called for stronger governance approaches and for the coalition to help move from plans to pilot projects, investment and investment-ready solutions. Priorities highlighted included energy efficiency, low-GWP refrigerants, passive cooling, green buildings, nature-based solutions and affordable access to cooling for vulnerable communities. The ASEAN Centre for Energy also emphasized the importance of public funding, concessional loans and philanthropic capital, alongside frameworks to reduce risk, develop project pipelines and mobilize private investment. It expressed readiness to contribute an ASEAN perspective to the Global Heat Resilience Roadmap

Danfoss reflected on the growth of the Cool Coalition since 2019 and welcomed the Assembly's ability to convene governments and stakeholders around implementation. Danfoss highlighted the value of taking the lessons from the Assembly back to Europe and encouraged stronger engagement from European institutions in the global cooling agenda. It also promoted continued technical learning and practical implementation around energy-as-a-service, district cooling and data centres.

Sustainable Energy for All (SEforALL) highlighted its work at the intersection of climate, energy and development and emphasized the links between heat resilience and cooling. SEforALL highlighted its cooling access data and knowledge products and announced support in response to several EPIC requests. This included support for developing national cooling action plans, particularly for small island developing states, follow-up with Mauritius, support to Kenya and Nigeria through investment roadmaps and related data, analytics and investment



guidelines, and engagement with Madagascar on initial implementation of the Global Cooling Pledge. SEforALL also encouraged countries to use EPIC requests as a mechanism for mobilizing additional support.

KEY RECOMMENDATIONS AND TAKEAWAYS

- 01 On the IGCC 2027-2028 work plan:** The workplan should prioritize measurable delivery, implementation milestones, project pipelines and demonstrable outcomes, supported by stronger data, heat-risk mapping, energy baselines, cooling-access data and measurable indicators to track progress towards the Pledge.
- 02 On Action Area 1 and 5:** Countries broadly emphasized the need to address rising heat, cooling access, energy efficiency, adaptation and resilience as interconnected priorities. The Global Heat Resilience Roadmap, the Singapore Outcome Statement and the proposed political declaration should help carry the agenda into COP31, COP32 and the second Global Stocktake.
- 03 On Action Area 2 and 4:** National cooling priorities need to be translated into investment-ready projects through project preparation support, technical assistance, concessional finance and partnerships with development banks and private investors.
- 04 On Action Area 2:** National cooling action plans should provide clear pathways for implementation at city, county, state and local levels, reflecting changing climate conditions and local needs. Cooling strategies should explicitly address low-income communities, informal settlements, rural populations, small island developing states and other groups with limited access to cooling.
- 05 On Action Area 3:** The manufacturing platform should connect country demand and policy signals with manufacturers and suppliers of efficient, climate-friendly equipment. Clear criteria, ambition and implementation mechanisms are required.
- 06 On Action Area 3:** Passive design, building codes, local materials, urban greening and nature-based cooling should be integrated into national and local implementation, while considering context-specific constraints such as water scarcity and humidity.
- 07 Energy, climate, ozone, health, planning, finance, urban development and other relevant institutions should work together through coordinated national mechanisms.** Regional cooperation can help address market-size constraints, technology access, testing and compliance systems, refrigerant life-cycle management and other shared challenges.

KEY OUTCOMES AND FOLLOW UPS

- **Participating countries and representatives of the sub-national government backed the shift to country-led implementation through the IGCC 2027-2028 work plan and set out their priorities for it.**
- **Participating countries, representatives of the sub-national governments and the Co-Chairs supported the Global Heat Resilience Roadmap** as the way to carry heat resilience and sustainable cooling into national climate plans and the COP process.
- **Participating countries and partners backed the manufacturing platform** and asked for it to be made concrete.
- **Participating countries and sub-national governments** including Bangladesh, El Salvador, Kenya, Pakistan, Saint Lucia, Vietnam, Zimbabwe and the State of Uttar Pradesh, are **engaging in implementation and asked for support.**
- **Participating partners**, including CCC, SEforALL and Danfoss **are backing delivery.**
- **Cool Coalition Secretariat to finalize and operationalize the 2027-2028 work plan** with the priorities raised by countries, turn country requests into support through EPIC, thematic action coalitions and country dialogues (matching them with the partners above), develop criteria and implementation arrangements for the manufacturing platform, and prepare the roadmap, Outcome Statement and country results for COP31 and COP32.

Annexes

ANNEX 1: ASSEMBLY PROGRAMME

15 September

Day 1 – From Science to Country and City Priorities for Cooling and Heat Resilience Action

09:30 – 10:00 OPENING OF THE GLOBAL COOLING PLEDGE ASSEMBLY

MC: Dr. Graeme Maidment, Professor, Heating and Cooling, London South Bank University; Executive Committee Member, UNEP Cool Coalition

Room: Grand Ballroom

Speakers:

- Mr. Melvyn Ong, Permanent Secretary, Ministry for Sustainability and the Environment, Singapore
- H.E. Adalberto Maluf, National Secretary of Urban Environment, Water Resources and Environmental Quality, Ministry of Environment and Climate Change, Brazil
- Ms. Somayyah Abdulla Alyammahi, Director of Productivity and Demand Department, Ministry of Energy and Infrastructure, UAE
- Mr. Hongpeng Lei, Chief, Mitigation Branch, Climate Change Division, UNEP

10:00 – 10:30 SINGAPORE'S HEAT RESILIENCE APPROACH & BEAT THE HEAT STUDY TOUR

Speakers: Ms. Petrina Leo, Deputy Director, Climate Adaptation and Heat Resilience Policy Office, Energy and Climate Policy Division, Ministry for Sustainability and Environment

Room: Grand Ballroom

11:00 – 12:30 EXTREME HEAT & SUSTAINABLE COOLING: EVIDENCE-BASED DECISION MAKING

Format: Expert panel discussion

Room: Grand Ballroom

Moderator: Ms. Lily Riahi, Head of Unit, Buildings and Cooling, Mitigation Branch, Climate Change Division, UNEP

Panellists:

- Dr. Winston Chow, Co-Chair of the Intergovernmental Panel on Climate Change's (IPCC) Working Group II
- Dr. Jason Lee, Director, Heat Resilience & Performance Centre, National University of Singapore
- Dr. Eleni Myrivili, Global Chief Heat Officer, UNEP
- Dr. Omar Abdelaziz, Associate Professor, The American University in Cairo

Respondents:

- Ms. Andrea Voigt, Vice President, Danfoss Group
- Mr. Noah Horowitz, Senior Director, Clean Cooling Collaborative

13:30 – 14:30 Parallel Sessions: Regional Country & Partner Dialogues

13:30 – 14:30 AFRICA DIALOGUE: HEAT RESILIENCE AND COOLING ACTION

Facilitators: Dr. Graeme Maidment, Professor, Heating and Cooling, London South Bank University; Executive Committee Member, UNEP Cool Coalition and Mr. Patrick Blake, Programme Manager, UNEP United for Efficiency

Speakers:

Countries

- Mr. Elie Mansour, Project Manager at Lebanon's National Ozone Unit, Lebanon
- Mr. Hubert Nsoh Zan, Manager, Energy Efficiency Regulation, Energy Commission, Ghana
- Ms. Somayyah Al Yammahi, Director of Productivity and Demand Department, UAE
- Ms. Uboho Ekpo, Assistant Chief Scientific Officer, National Council on Climate Change, Nigeria
- Mr. Alain Wilmart, Senior Expert on Ozone and F-Gas, Climate Change Department, Federal Ministry of Environment
- Ms. Sarah Robinson, International Innovation Lead – Buildings and Cooling, Science and Innovation for Climate and Energy, Department of Net Zero and Energy Security, UK

Partners

- Mr. Anderson Moreira do Vale Alves, Senior Technical Advisor on Cooling, UNDP
- Ms. Tilly Lenartowicz, Senior Officer, Sustainable Cooling and Energy Efficiency, SEforALL

13:30 – 14:30 ASIA-PACIFIC DIALOGUE: HEAT RESILIENCE AND COOLING ACTION

Facilitators: Mr. Hongpeng Lei, Chief of Mitigation Branch, Climate Change Division, UNEP and Ms. Lily Riahi, Head of Unit, Buildings and Cooling, Mitigation Branch, Climate Change Division, UNEP

Speakers:

Countries

- H.E. Dr. Chhan Sopha, MLMUPC, Cambodia
- Mr. Calvin Chong, Divisional Director, Energy and Climate Policy, Ministry of Sustainability and the Environment, Singapore
- Dr. John Daniel Marcus Knight, Scientist E, Ministry of Environment, Forest and Climate Change, India
- Ms. Miruza Mohamed Deputy Director General, Ministry of Climate Change, Environment and Energy, Maldives
- Ms. Lana Rose A. Manaligod, Assistant Director, Department of Energy, Philippines
- H.E. Pak Sokharavuth, Under Secretary of State, Ministry of Environment, Cambodia

Partners

- Mr. Mark Low, Director of Design Strategy and Climate & Sustainability, lead at ISI Land, ISI Group Developer
- Mr. Shaun Seow, CEO, Philanthropy Asia Alliance (PAA)

13:30 – 14:30 LATIN AMERICA & CARIBBEAN DIALOGUE: HEAT RESILIENCE AND COOLING ACTION

Moderator: Mr. Nathan Borgford-Parnell, Science Affairs Coordinator (Lead), UNEP, CCAC

Speakers:

- H.E. Adalberto Maluf, National Secretary of Urban Environment, Water Resources and Environmental Quality, Ministry of Environment and Climate Change, Brazil
- Ms. Dawn Pierre-Nathaniel, Chief Sustainable Development and Environment Officer, Sustainable Development & Environment Division, Department of Sustainable Development, Saint Lucia
- Mr. Sebastián Wainberg, Advisor, Energy Demand, Access and Efficiency Area, National Energy Directorate, Ministry of Industry, Energy and Mining, Uruguay

15:00 – 16:30 Parallel Sessions: Regional Country & Partner Dialogues

15:00 – 16:30 AFRICA DIALOGUE: HEAT RESILIENCE AND COOLING ACTION (continues)

Breakout Discussions:

Group I – National and Multi-level Cooling Action

Facilitator: Mr. Andreas Hermelink, Director, Cool Up Programme, Guidehouse

Group II – Market Transformation: Scaling passive and transforming markets for efficient, climate-friendly cooling

Facilitator: Ms. Tilly Lenartowicz, Senior Officer, Sustainable Cooling and Energy Efficiency, SEforALL and Mr. Patrick Blake, Programme Manager, UNEP United for Efficiency

Group III – Mobilizing finance and investment for implementation

Facilitator: Mr. Rashane Sala-Ngarm, Senior Officer for Regional Partnerships and Cooperation, AFD and Mr. Jonathan Coony, Global Lead for Green Competitiveness, Finance, Competitiveness & Innovation, World Bank Group

15:00 – 16:30 ASIA-PACIFIC DIALOGUE: HEAT RESILIENCE AND COOLING ACTION *(continues)*

Breakout Discussions:

Group I – Implementing the ASEAN Passive and EE roadmap and testing passive and active technologies in public buildings **Facilitators:** Ms. Claire Oei, Climate and Nature Lead at the Philanthropy Asia Alliance (PAA), Temasek and Mr. Rio Jon Piter Silitonga, Senior Officer, for Energy Efficiency, ASEAN Centre for Energy (ACE)

Group II – Scaling heat-resilient public and social infrastructure in South and Central Asia

Facilitator: Mr. Cynan Houghton, Deputy Regional Program Director, Tara Climate Foundation

Group III – Scaling Heat Resilience in Schools in Indian Ocean and Pacific SIDS

Facilitator: Mr. Alejandro Garcia Macias, Cities and Climate Change Technical Advisor, UN ESCAP

15:00 – 16:30 BEAT THE HEAT TRAINING: URBAN HEAT PLANNING AND INTEGRATION INTO POLICY FRAMEWORKS

Facilitator: Dr. Eleni Myrivili, Global Chief Heat Officer, UNEP

Speakers:

- Ms. Shi Hui Phua, Urban Specialist, World Bank Group
- Mr. Rajroshan Sawhney, Google
- Ms. Iphigenia Keramitsoglou, National Observatory of Athens
- Mr. Ander Zozaya, Lead Project Management and Research Translation, Singapore-ETH Centre (SEC)
- Mr. Md Tanvir Hasan Rezaul, Cox's Bazar Development Authority (coxda), Bangladesh

16:30 – 17:00 Transportation to site visit

Participants gather at the meeting point (bus bay). Transport is arranged as part of the tour.

17:00 – 18:15 SITE VISIT: HEAT RESILIENCE & PERFORMANCE CENTRE (HRPC)

17:00 – 18:15 SITE VISIT: BCA BRADDELL CAMPUS *(option B)*

16 September

Day 2 – From Priorities to Solutions, Partnerships and Scale

08:30 – 08:45 WORLD OZONE DAY OPENING

09:00 – 10:30 Parallel Sessions: Implementation Roundtables and Beat the Heat Training

09:00 – 10:30 MARKET TRANSFORMATION: EFFICIENT, CLIMATE-FRIENDLY COOLING APPLIANCES

Facilitator: Mr. Patrick Blake, Programme Manager, UNEP-United for Efficiency

Speakers:

Countries

- Dr. Daniel Collin G. Jornales, Chief Science Research Specialist, Energy Utilization Management Bureau, Department of Energy, Philippines
- Mr. Hubert Nsoh Zan, Manager of Energy Efficiency Inspection & Enforcement, Energy Commission of Ghana
- Ms. Li Xiaoyan, Senior Programme Officer of the Montreal Protocol Division, Foreign Environmental Cooperation Center of the Ministry of Ecology and Environment, China
- Mr. Michael Ivenso, Director of Energy, Transportation, and Infrastructure, National Council on Climate Change of Nigeria
- Mr. Pei Chen NG, Principal Engineer, Carbon Mitigation Division, National Environment Agency, Singapore

Partners

- Dr. Baolong Wang, Secretary of IIR Commission E1 (Air Conditioning) and Co-Chairperson for the IIR Working Group on Dehumidification in Air Conditioning, International Institute of Refrigeration (IIR)
- Ms. Miki Yamanaka, Senior Manager, Global Policy Relations, Corporate Sustainability Office, Daikin
- Mr. Noah Horowitz, Senior Director, Clean Cooling Collaborative
- Ms. Stephanie Egger Haysmith, Montreal Protocol (Ozone) Secretariat
- Dr. Steven Zeng, Director, China Program, CLASP

09:00 – 10:30 NATIONAL AND MULTI-LEVEL COOLING ACTION: FROM PLANS TO IMPLEMENTATION AND INVESTMENT

Facilitator: Dr. Omar Abdelaziz, Associate Professor, The American University in Cairo

Speakers:

Countries

- H.E. Adalberto Maluf, National Secretary of Urban Environment, Water Resources and Environmental Quality, Ministry of Environment and Climate Change, Brazil
- Dr. John Daniel Marcus Knight, Scientist E, Ministry of Environment, Forest and Climate Change, India

Partners

- Mr. Alok K Singh, Global Lead, Built Environment Decarbonization, World Bank Group
- Mr. Anderson Moreira do Vale Alves, Senior Technical Advisor on Cooling, UNDP
- Mr. Andreas Hermelink, Director, Cool Up Programme, Guidehouse
- Ms. Anjali Mahendra, Director, Global Research, WRI Ross Center for Sustainable Cities
- Ms. Devika Panse, Sustainable Cooling Analyst, SEforALL
- Mr. Mostafa Hasaneen, Senior Sustainable Energy Expert, RCREEE
- Ms. Wei Han, Program Director, Energy Foundation China

09:00 – 10:30 BEAT THE HEAT TRAINING: IMPLEMENTING NATURE-BASED PASSIVE COOLING SOLUTIONS

Facilitator: Ms. Srinidhi Ravishankar, Cooling Policy Specialist, UNEP

Speakers:

- Ms. Dimple Rana, Heat Resilience Leader, Arup
- Dr. Bakan Jagadhish Sudhakar, CEO, Tamil Nadu Green Climate Company, State of Tamil Nadu State, India (TBC)
- Ms. Jia Xin Chum, Director of Landscape, APAC, Henning Larsen, Ramboll Group
- Ms. Maricris F. Veloso, Officer in Charge - Education Affairs Unit, Quezon City, the Philippines

11:00 – 12:30

Parallel Sessions: Implementation Roundtables and Beat the Heat Training

11:00 – 12:30

MARKET TRANSFORMATION: SCALING PASSIVE COOLING IN BUILDINGS

Facilitator: Ms. Gulnara Roll, Head of Sectoral Transition Section, Mitigation Branch, Climate Change Division UNEP and Mr. Gennai Kamata, Associate Programme Officer, Buildings and Urban Energy, UNEP, globalabc

Speakers:

Countries and States

- Mr. Cédric Bozonnat, Counsellor for Energy, Transport and Sustainable Development, Regional Economic Service, for Singapore and ASEAN countries, French Embassy in Singapore
- Mr. Muhammad Nur Fajri Alfata, Ministry of Public Works, the Republic of Indonesia
- Mr. Sebastián Wainberg, Advisor, Energy Demand, Access and Efficiency Area, National Energy Directorate, Ministry of Industry, Energy and Mining, Uruguay
- Mr. Bakan Jagadhish Sudhakar, Tamil Nadu, India - Department of Environment, Climate Change and Forests

Partners

- Mr. Akash Goenka, Senior Specialist, Buildings & Urban Cooling, NRDC
- Mr. Alok K Singh, Global Lead, Built Environment Decarbonization, World Bank Group
- Mr. Lem Yang Lim, Senior Director, Singapore Green Building Council
- Mr. Rashane Sala-Ngarm, Senior Officer for Regional Partnerships and Cooperation, AFD
- Mr. Rio Jon Piter Silitonga, Research Analyst for Energy Efficiency, ASEAN Centre for Energy (ACE)
- Mr. Satish Kumar, Director, Alliance for Energy Efficient Economy (AEEE)
- Mr. Shiro Akiyama, General Manager, SPACECOOL

11:00 – 12:30

MARKET TRANSFORMATION: SUSTAINABLE COOLING, CLEAN ENERGY AND DEMAND FLEXIBILITY

Facilitators: Mr. Dimitris Karamitsos, Senior Sustainable Finance Specialist, BASE and Mr. Luis Munuera, Programme Lead on Energy, UNEP

Speakers:

Countries

- Mr. Deepak Sakaria, Energy Transition Advisor, Ministry of Energy & Infrastructure UAE
- Mr. Guillermo Lopez Alonso, Technical Adviser Subdirector-General for Energy Efficiency and Access to Energy, DG for Energy Planning and Coordination, Secretary of State for Energy, Ministry for Ecological Transition and Demographic Challenge
- Ms. Nawsheen Sooruth, Engineer/Senior Engineer, Energy Efficiency Management Office, Mauritius
- Ms. Stela Drucioc, Head, Air and Climate Policy Directorate, Ministry of Environment, Republic of Moldova

Partners

- Ms. Andrea Voigt, Vice-President, Public & Industry Affairs, Sustainability, Communications and Interim Head of Corporate Public Affairs, Danfoss
- Mr. Coenrad Ehlers, General Manager, Energy Partners
- Dr. Graeme Maidment, Professor, Heating and Cooling, London South Bank University; Executive Committee Member, UNEP Cool Coalition
- Mr. Jonathan Coony, Global Lead for Green Competitiveness, Finance, Competitiveness & Innovation, World Bank Group
- Mr. Mostafa Hasaneen, Senior Sustainable Energy Expert, RCREEE
- Mr. Simon Benmarraze, Head of Energy Planning and Modelling, IRENA
- Ms. Violet Chen, Director, Industry Development, Energy Market Authority (EMA), Singapore

11:00 – 12:30

BEAT THE HEAT TRAINING: FINANCING AND IMPLEMENTING URBAN HEAT AND COOLING RESILIENCE

This session explores the financing opportunities and investment approaches for heat resilience initiatives.

Room: Grand Ballroom 3

Facilitator: Ms. Elsa Lefevre, Programme Manager, Beat the Heat, UNEP

Speakers:

- Mr. Hamza Abdullah, Analyst, Urban Climate Finance, CCFLA
- Ms. Nicolette Loo, Senior Planner, Urban Redevelopment Authority (URA), Singapore
- Ms. Anjali Mahendra, Director of Global Research, WRI Ross Center for Sustainable Cities
- Dr. Joy Shrikant Thakur, Scientist, Environment and Climate Change Department, State of Maharashtra, India
- Ms. Christina Muniandy, Urban Climate Resilience Manager, C40 Cities
- Mr. Benjamin Hickman, Programme Manager, Be Cool, UNEP

Participants gather at the meeting point (bus bay). Transport is provided as one continuous tour: PARKROYAL venue → Punggol Digital District → Sentosa → hotel. There is no separate bus service from Punggol to the hotel or from the hotel to Sentosa.

14:00 – 15:30 SITE VISIT: PUNGGOL DIGITAL DISTRICT

16:00 – 17:30 SITE VISIT: SENTOSA

17 September

Day 3 – High-Level Segment & IGCC Meeting: Co-designing the 2027-2028 Implementation Workplan

09:00

– 09:20 HIGH-LEVEL OPENING FROM THE HOST

MC: Dr. Graeme Maidment, Professor, Heating and Cooling, London South Bank University; Executive Committee Member, UNEP Cool Coalition

Speakers:

- H.E. Grace Fu Hai Yien, Minister for Sustainability and the Environment, Singapore
- Mr. Martin Krause, Director, Climate Change Division, UNEP

09:20 – 10:15 COOL LEADERS AWARDS CEREMONY

Presenter: Mr. Martin Krause, Director, Climate Change Division, UNEP

Official group photo and media moment

Fireside chat with the award recipients

Moderator: H.E. Adalberto Maluf, National Secretary for Urban Environment, Water, Resources and Environmental Quality, Ministry of Environment and Climate Change, Brazil (Co-Chair)

10:15 – 10:20 OFFICIAL OPENING OF THE IGCC BY CO-CHAIRS

Speakers:

- H.E. Eng. Sharif Al Olama, Undersecretary for the Energy and Petroleum Sector, Ministry of Energy and Infrastructure, United Arab Emirates (Co-Chair)
- H.E. Adalberto Maluf, National Secretary for Urban Environment, Water, Resources and Environmental Quality, Ministry of Environment and Climate Change, Brazil (Co-Chair)

10:20 – 10:40 PROGRESS AND VISION

Special Remarks:

- H.E. Hiroshi Ishikawa, Ambassador Extraordinary and Plenipotentiary of Japan to Singapore, highlighting Japan's progress on the Global Cooling Pledge and next steps in advancing sustainable cooling and heat resilience toward COP31
- Ms. Banu Aslan, Director General of Professional Services at the Ministry of Environment, Urbanization, and Climate Change, COP31 Türkiye Presidency

11:10 – 11:45 GLOBAL COOLING PLEDGE PROGRESS AND IMPLEMENTATION MECHANISMS

Speakers:

- Mr. Hongpeng Lei, Chief, Mitigation Branch, Climate Change Division, UNEP
- Ms. Lily Riahi, Head of Unit, Buildings, Cooling and Energy and Head of Cool Coalition, Mitigation Branch, Climate Change Division, UNEP
- Ms. Myriem Touhami, Head of Unit, Sustainable Investments, Mitigation Branch, Climate Change Division, UNEP

11:45 – 12:45 IGCC SESSION 1 - NATIONAL AND MULTI-LEVEL COOLING ACTION: PLANS FOR COORDINATED DELIVERY

Facilitators: Ms. Gulnara Roll, Head of Sectoral Transition Section, Mitigation Branch, Climate Change Division, UNEP and Mr. Alok K Singh, Global Lead, Built Environment Decarbonization, World Bank Group

Cool Spotlight: Dr. John Daniel Marcus Knight, Scientist E, Ministry of Environment, Forest and Climate Change, India

Facilitated discussion with countries, cities and partners

Guiding Questions:

- What progress has been made in developing and implementing National Cooling Action Plans, and what are the key successes, lessons learned and challenges, including governance, monitoring and evaluation, and financing?
- How can NCAPs and cooling investment roadmaps be better integrated with NDCs, kips, naps and other national planning frameworks and subnational action?
- What are the priorities for collaboration and delivery, and which countries and partners are interested in working with UNEP to co-design and advance implementation under this action area?

13:30 – 15:00 IGCC SESSION 2A: MARKET TRANSFORMATION AND ALIGNMENT WITH THE KIGALI AMENDMENT TO SCALE EFFICIENT COOLING APPLIANCES AND EQUIPMENT

Facilitators: Mr. Martin Krause, Director, Climate Change Division, UNEP and Ms. Avipsa Mahapatra, Climate Campaign Director, Environmental Investigation Agency, US

Cool Spotlight: Ms. Li Xiaoyan, Senior Programme Officer of the Montreal Protocol Division, Foreign Environmental Cooperation Center of the Ministry of Ecology and Environment, China

Facilitated discussion with countries, cities and partners

Guiding Questions:

- What progress has been made in accelerating the uptake of super-efficient, low- and ultra-low-GWP appliances and equipment and LRM, and what policy, finance, procurement, industry and capacity-building measures are needed?
- How can the Manufacturing Platform better connect demand and supply and support industry engagement, including through MEPS, procurement and industry commitments?
- What support and partnerships are needed, and which countries and partners are interested in working with UNEP to co-design and advance implementation under this action area?

15:30 – 17:00 IGCC SESSION 2B: MARKET TRANSFORMATION TO SCALE PASSIVE COOLING SOLUTIONS

Facilitators: Mr. Benjamin Hickman, Regional Programme Lead, Be Cool, UNEP and Mr. Satish Kumar, President and Executive Director, Alliance for an Energy Efficient Economy (AEEE)

Cool Spotlight: Mr. Peter Rimba Maneno, Deputy Director Climate Change, Ministry of Environment, Climate Change and Forestry, Kenya

Facilitated discussion with countries, cities and partners

Guiding Questions:

- What are the main challenges and enabling conditions for scaling passive cooling through policy, planning, building codes, procurement and finance, and how can governments, cities, real estate and other market actors work together to strengthen the passive cooling ecosystem?

- How can passive and active cooling approaches be integrated to improve the resilience and efficiency of critical infrastructure?
- What are the priorities for collaboration and delivery, and which countries and partners are interested in working with UNEP to co-design and advance implementation under this action area?

17:00 – 17:15 Day 3 – Wrap Up

Speaker: Mr. Martin Krause, Director, Climate Change Division, UNEP

Opening remarks from H.E. Jakob Brix Tange, Ambassador of Denmark to Singapore and Mr. Martin Krause, Director, Climate Change Division, UNEP.

18 September

Day 4 – Shaping the Next Phase of Cooling Action

Room: Grand Ballroom

09:00 – 09:25 ANNOUNCEMENT OF THE GEF-8 NATURE FOR COOLING CHALLENGE PROJECT

Facilitators: Mr. Gennai Kamata, Programme Manager, Nature for Cooling Challenge, UNEP and Mr. Manoj Kumar Muthumanickam, Programme Management Officer, UNEP

Speakers:

- H.E. Adalberto Maluf, National Secretary for Urban Environment, Water, Resources and Environmental Quality, Ministry of Environment and Climate Change, Brazil
- H.E. Pak Sokharavuth, Under Secretary of State, Ministry of Environment, Cambodia
- Mr. Mollé Bian Donatien, Director of Studies, Materials and Architecture, Ministry of Urban Planning, Housing and Living Environment, Côte d'Ivoire

09:25 – 10:30 IGCC SESSION 3 – MOBILIZING FINANCE FOR HEAT RESILIENCE AND SUSTAINABLE COOLING

Facilitator: Ms. Hanane Hafraoui, Programme Lead, Platforms and Country Programmes, UNEP

Cool Spotlight: Mr. Boon Heong, CEO of Temasek Foundation

Facilitated discussion with countries, cities and partners

Guiding Questions:

- What are the main barriers to mobilizing finance for cooling and heat resilience, and what business models could help make these investments more viable and attractive to investors?
- What financing approaches, including Paris AGREement Article 6.2 and alignment with the GEF, Adaptation Fund, among others, can help scale investment in cooling and heat resilience?
- What are the priorities for collaboration and delivery, and which countries and partners are interested in working with UNEP to develop financing approaches and partnerships under this action area?

11:00 – 12:30 IGCC SESSION 4 – A HEAT RESILIENCE ROADMAP FOR NATIONAL AND GLOBAL ACTION

Facilitators: Ms. Eleni Myrivili, Global Chief Heat Officer, UNEP and Mr. Amit Prothi, Director General, Coalition for Disaster Resilient Infrastructure

Cool Spotlight: Mr. Jiro Hiratsuka, Director, Ministry of the Environment, Japan and Mr. Manoj Kumar Singh, CEO of the State Transformation Commission, Uttar Pradesh, India

Facilitated discussion with countries, cities and partners

Guiding Questions:

- How are extreme heat and sustainable cooling interconnected, and what does this mean for how we design and implement heat resilience and cooling action?
- What are the key successes, lessons and approaches from countries and cities in strengthening heat resilience and advancing sustainable cooling?

- How can national and global action on heat resilience and sustainable cooling be strengthened, including through frameworks such as the Belém Indicators and naps, and international processes such as the Global Stocktake?

13:30 – 14:00 ELEVATING HEAT RESILIENCE AND SUSTAINABLE COOLING IN GLOBAL CLIMATE AGENDA

Moderator: Mr. Calvin Chong, Divisional Director, Energy and Climate Policy Division, Ministry for Sustainability and Environment, Singapore

Speaker:

- Ms. Alice de Moraes Amorim Vogas, Program Director, COP30 Brazil Presidency
- Mr. Volkan Polat, Head of Department at the Climate Change Directorate, Ministry of Environment, Urbanisation and Climate Change, Türkiye
- Ms. Simret Terefe Leggese, Lead, Environment and Climate Change Policy and Strategy and Planning Division, Ministry of Planning and Development, Ethiopia

14:00 – 15:00 IGCC SESSION 5 - GLOBAL COOLING PLEDGE ASSEMBLY OUTCOMES

Facilitator: Mr. Martin Krause, Director, Climate Change Division, UNEP

Speakers:

- H.E. Adalberto Maluf, National Secretary for Urban Environment, Water, Resources and Environmental Quality, Ministry of Environment and Climate Change, Brazil (Co-Chair)
- H.E. Eng. Sharif Al Olama, Undersecretary for the Energy and Petroleum Sector, Ministry of Energy and Infrastructure, United Arab Emirates (Co-Chair)
- Mr. Noah Horowitz, Senior Director, Clean Cooling Collaborative

16:30 – 17:30 Parallel Sessions: Masterclasses

16:30 – 17:30 COOLING AS A SERVICE (CAAS), DISTRICT COOLING AND DATA CENTER COOLING

This masterclass segment will consist of a sequence of three short sessions led by BASE and Danfoss, covering Cooling as a Service (caas), district cooling and data centres.

16:30 – 17:30 COOLING EMISSIONS – HOW TO MEASURE THEIR IMPACTS AND PLAN MITIGATING AND ADAPTATION INTERVENTIONS

18:30 – 21:00 High-Level Reception

Hosted by the H.E. Grace Fu, Minister for Sustainability and the Environment, Singapore

ANNEX 2: PARTICIPATING COUNTRIES, CITIES AND ORGANISATIONS

PARTICIPATING COUNTRIES

- Armenia
- Bangladesh
- Belgium
- Bhutan
- Brazil
- Brunei Darussalam
- Burkina Faso
- Cambodia
- Chad
- Chile
- China
- Comoros
- Côte d'Ivoire
- Denmark
- Djibouti
- Dominican Republic
- El Salvador
- Eswatini
- Ethiopia
- Fiji
- France
- Germany
- Ghana
- India
- Indonesia
- Japan
- Kenya
- Kiribati
- Lao PDR
- Lebanon
- Madagascar
- Maldives
- Mauritius
- Micronesia
- Republic of Moldova
- Nepal
- Nigeria
- Pakistan
- Peru
- Philippines
- Saint Lucia
- Seychelles
- Singapore
- Somalia
- South Sudan
- Spain
- Sri Lanka
- The Gambia
- Timor-Leste
- Togo
- Tunisia
- Türkiye
- United Arab Emirates
- United Kingdom
- Uruguay
- Viet Nam
- Zimbabwe

PARTICIPATING CITIES

- Antalya, Türkiye
- Campinas, Brazil
- Cox's Bazar, Bangladesh
- Fortaleza, Brazil
- Greater Chennai Corporation, India
- Iloilo, Philippines
- Kisumu, Kenya
- Lagos State, Nigeria
- Maharashtra, India
- Phnom Penh, Cambodia
- Quezon City, Philippines
- Tamil Nadu, India
- Uttar Pradesh, India

PARTICIPATING ORGANISATIONS

- A-Gas
- Asian Development Bank (ADB)
- Agence Française de Développement (AFD)
- AIPH
- Al Tafawq Project Management Services
- Alliance for an Energy Efficient Economy (AEEE)
- AMBIATOR
- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
- Arup
- ASEAN Centre for Energy (ACE)
- Basel Agency for Sustainable Energy (BASE)
- BDA Partners
- E3G
- Ecotechx
- Energy Foundation China
- Energy Partners Refrigeration
- Environmental Investigation Agency (EIA)
- Esri Inc
- Ethical Trading Initiative Bangladesh
- EY Singapore
- Fondation CHANEL
- German Development Agency (GIZ)
- Global Heat Reduction Initiative
- Gluckman Consulting (IMPACT-F)
- Mabill Technologies
- Montreal Protocol Ozone Secretariat
- National Institute of Urban Affairs (NIUA)
- National Observatory of Athens
- Natural Resources Defense Council (NRDC)
- Philanthropy Asia Alliance (PAA)
- Ramboll Group (incl. Henning Larsen)
- Regional Center for Renewable Energy and Energy Efficiency (RCREEE)
- Sequoia
- Siemens
- Singapore-ETH Centre
- SPACECOOL

- C40 Cities
- CAEA
- Carboncare innolab
- CDRI
- Cities Climate Finance Leadership Alliance
- CLASP
- Clean Cooling Collaborative
- Climate and Clean Air Coalition (CCAC)
- Climate Policy Initiative
- Climateworks Foundation
- Coldhubs
- Cool Roof Rating Council
- Cool Up Programme, Guidehouse
- Daikin
- Danfoss
- Google
- GREE Electric Appliances
- Gresham House
- Grundfos
- HEAT gmbh
- Heat Resilience & Performance Centre (HRPC)
- Hitachi, Ltd.
- Institute for Global Decarbonization Progress (igdp)
- International Finance Corporation – World Bank Group
- International Institute of Refrigeration (IIF/IIR)
- International Renewable Energy Agency (IRENA)
- ISI Group
- Johnson Controls
- Kaer
- London South Bank University (LSBU)
- Sustainable Energy for All (SEforALL)
- TARA Climate Foundation
- Temasek Foundation
- The American University in Cairo
- Tsao
- United Nations Development Programme (UNDP)
- United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP)
- University of Birmingham
- University of Hong Kong
- VF Corporation
- William and Flora Hewlett Foundation
- WILO
- World Bank Group
- World Green Building Council
- World Resources Institute (WRI)