Global Heat Resilience and Sustainable Cooling Roadmap: Protecting people, keeping the lights on, delivering on our climate goals in a warming world

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Ministerial invitation | COP31, Türkiye | From Antalya to Addis Heat now threatens lives, livelihoods, critical infrastructure and economies in every region. Hundreds of thousands of people die from heat every year, and nearly two billion people are vulnerable due to inadequate cooling. When heat peaks, grids are pushed to the limit, and a power failure can quickly become both a public health emergency and an economic shock, disrupting the essential services people depend on.

Countries are already acting through heat-health, cooling, refrigerant and energy efficiency plans. What Ministers lack is a shared way to see, on the hottest day, what will keep people safe and services running, and what that means for energy and emissions.

Ministers are invited to lead that response. Governments are invited to co-create the *Global Heat Resilience and Sustainable Cooling Roadmap* together: a country-led effort, developed with and owned by governments, to protect people, safeguard critical services that depend on reliable power, and protect the climate.

The Roadmap builds on the COP28 Global Cooling Pledge; the COP30 Beat the Heat Implementation Drive, which extend the Pledge to subnational government commitments; and the Intergovernmental Committee on Cooling which convened for the first time at the Singapore Global Cooling Pledge Assembly in September 2026. All countries can participate in the roadmap development process, whether or not they have signed the Pledge. The approach will be designed and tested with countries in 2027, with presentation envisaged for COP32.

Participation is voluntary and nationally determined. Welcoming the Roadmap creates no new commitment, target or obligation. Each country sets its own priorities, ambition and pace. It is offered as a shared deliverable from the COP31 to the COP32 Presidency. The draft *Antalya to Addis Heat Resilience and Sustainable Cooling Declaration* is put forward alongside this invitation. Governments may consider the Declaration and the Roadmap together or separately.

1. Why now: heat resilience and cooling must be planned together

Heat is putting people, services and economies at risk, and the risk is growing. Governments are responding through heat, health, early warning plans; National Cooling Action Plans; Kigali implementation plans; energy efficiency strategies, and more. These efforts are essential, but they are rarely connected through a common assessment of risk and priorities.

Heat-health plans identify who is most at risk, but do not necessarily identify appropriate cooling investments that will protect them, and the implications for greenhouse gas emissions. Cooling plans focus on access, affordability, energy efficiency, renewable energy and reduced emissions but are not necessarily organized around the people, places, and essential services most exposed to extreme heat. What is missing is a way to bring these agendas together, so decisions about heat, cooling and energy infrastructure reinforce rather than undermine one another. No existing plan shows, in one place, what will keep people safe, and services running as temperatures rise and what that means for energy and emissions.

Without this, the default is to install more conventional active cooling solutions. Protection from heat follows purchasing power, not risk. People who cannot afford mechanical ventilation or air conditioning remain vulnerable, as do schools, hospitals, care homes and food systems which underpin community resilience. Grids come under the most strain just as demand peaks, and power outages become health emergencies.

Air conditioning drives more growth in electricity demand than data centres (IEA 2026). Even with Kigali Amendment compliance and business-as-usual efficiency gains, cooling emissions are projected to double by 2050, and 3 billion people will remain unprotected (UNEP 2025).

The question for Ministers has changed. It is no longer "how much cooling do we need?" but "**how do we keep people safe and systems running while meeting our climate goals?**"

2. The opportunity: from ambition to delivery

Countries have already shown what shared ambition can do. Through the Global Cooling Pledge, launched at COP28, 76 countries are working together to expand access to cooling, reduce cooling-related emissions and improve efficiency of cooling equipment. There has been real progress from Pledge Signatories, including:

- A significant increase in signatories (from 7 to 32) integrating passive and nature-based cooling into building codes;
- More than 50 signatories have updated Minimum Energy Performance Standards (MEPS) for room air-conditioners and/or refrigerators, with several markets reporting over 50% inverter AC penetration;
- 32 signatories now include cooling in their Nationally Determined Contributions (NDCs) compared to less than a dozen in 2022.
- The Intergovernmental Committee on Cooling at COP30 has been established by governments globally uniting to strengthen political will and international cooperation
- The Enabling Pledge Implementation for Cooling (EPIC) facility and cooling Manufacturing Platform support implementation; and
- The Secretary-General and the G7 have called for action on extreme heat and sustainable cooling.

Countries want to take the next step. Meaningful progress has been made on expanding access to cooling, improving the energy efficiency of cooling equipment and reducing emissions What governments need now is a clear picture of heat risk and cooling demand: who is most exposed, which measures will protect them, and what those measures mean for the critical systems and the climate.

The Roadmap is that step. It builds on the Pledge and the evidence behind it and is open to every country on equal terms. Heat resilience and sustainable cooling can be achieved together; through integrated planning, smart design, nature-based solutions, efficient equipment, resilient cold chains and cleaner refrigerants, countries can keep people safe and still cut emissions. The Roadmap will help each country apply these measures to address its own heat risks, based on current and future grid capacity, energy demand from critical services, and budget constraints.

3. Three outcomes: protect people, safeguard critical services, protect the climate

Protect people (thermal safety and comfort). People stay safe, healthy and productive during extreme heat: whether at home, at work, at school, in hospital, or in transit.

Safeguard critical services (system resilience). The services a country provides depend on keeping them operational under heat stress, including healthcare, food, energy, water, transport, and the workforce.

Deliver on climate goals (mitigation and adaptation). The first two outcomes contribute to progress reported against the *Belém Adaptation Indicators* adopted at COP30, without compromising the emissions targets in NDCs,

Together, these three outcomes form the heat trilemma connecting adaptation with mitigation; protecting people directly; safeguarding the energy systems on which health, critical services, and

economic activity depend; and ensuring that no measure locks in high-emission cooling or deepening the climate challenge. This framing sets a shared ambition which enables each country to determine their own priorities, ambition and pace of progress within a common framework.

4. What the Roadmap will give countries

Three principles guide the Roadmap:

- **Start from risk:** base decisions on heat exposure, cooling demand and grid capacity.
- **Reduce demand first:** use passive, nature-based, low-energy solutions wherever feasible, and strengthen heat acclimatisation and incorporate behavioral changes to adapt.
- **Meet remaining needs sustainably:** use efficient equipment, low-GWP refrigerants and clean energy.

The Roadmap provides a common four-step method that each country applies to their own context, with a clear output at each stage.

Step	The question	What the country gets
1. Understand heat risk, cooling demand and grid capacity	Who and what is most exposed to extreme heat, now and in the future? What does increasing cooling demand mean for the grid?	**Heat and cooling profile:** an integrated picture of heat risk, cooling demand and grid capacity
2. Identify your archetype*	How does your heat trilemma profile compare with your capacity to respond (governance, technology, finance)? Which countries face similar challenges?	**Archetype and peer group:** a basis for sharing lessons and identifying relevant solutions with similar countries
3. Choose measures	Which heat resilience and sustainable cooling solutions suit your context, and what should come first?	**Heat Resilience and Sustainable Cooling Pathway:** prioritised measures drawn from a shared solutions menu
4. Project definition, preparation and financing	What is needed to turn priority measures into implementable projects that attract finance?	**Project portfolio:** early wins, indicative costs and financing options

***Note:** Archetypes are groups of countries with similar exposure and capacity. They help countries share lessons and help partners target support. They are descriptive, not rankings.

5. How we get started: led by countries

Ministers set the direction. A Ministerial Advisory Group with countries from different regions, signatories and non-signatories together, would guide the work and speak for the Roadmap in the run-up to COP32.

Builds on what exists. The Roadmap works through the Intergovernmental Committee on Cooling (IGCC) and the Global Cooling Pledge community of practice including its various delivery mechanisms set up by countries (see: Singapore Cooling Assembly Outcome Document). Non-signatories can participate as IGCC partners. No new governance structure is created. Each government names a focal point, UNEP serves as secretariat and technical partner, leveraging the Cool Coalition, and working with a scientific group to develop the Roadmap.

The Roadmap is developed openly and tested in practice. The method is developed through an open consultation in 2027. Following COP31, where Ministers are invited to welcome the proposal, any country or partner can submit data, indicators, case studies and comments. A first draft of the archetypes and solutions menu follows in early 2027. In mid-2027, anchor countries from different regions and income levels test the method on real data, and regional exchanges check that the archetypes work in different contexts. A second open consultation reviews the revised version in late 2027. At COP32, the Ministerial Advisor Group reports back and the Roadmap is presented as a first-edition framework any country can use, to be refined as data and national experience grow.

6. An invitation to Ministers

We invite Ministers to take five visible steps at this Ministerial:

1. **Welcome the proposal** to develop the Roadmap as a voluntary, country-led effort, to be presented at COP32.
2. **Name a national focal point** to take part in the co-design, if not a member of IGCC.
3. **Join the Ministerial Advisory Group** or nominate a representative.
4. **Offer your country as an anchor country** for 2027, if it suits your national priorities.
5. **Consider the draft Antalya to Addis Heat Declaration**, put forward alongside this invitation, together with the Roadmap or separately.

Partners and funders are invited to back the effort with expertise and investment. Welcoming or taking part in the Roadmap does not require or imply signing the Global Cooling Pledge and creates no target or obligation for any country. The Roadmap is open to all countries on equal terms.

Heat resilience cannot be delivered by one ministry, one sector, or one solution. The Roadmap gives governments a shared way to decide what to deliver, protect people, keep systems running, and meet growing cooling needs without deepening the climate challenge.