High-level Ministerial Dialogue
Sustainable cooling

Date: 21 July 2023 **Time:** 14:30-15:45

Knowledge Partner: UNEP **Venue:** Ballroom 1, Grand Hyatt Goa, India

Background

Almost 2.5 billion people do not have access to climate-friendly cooling solutions and over 1 billion people are at high risk from extreme heat due to a lack of cooling access – the vast majority living in Africa and Asia. Expanding cooling will protect the most vulnerable communities from extreme heat, keep food fresh and vaccines safe, employees productive and digital economies viable. Yet, we need to prevent cooling-related greenhouse gas emissions from adding fuel to the climate fire.

In 2020, cooling systems were responsible for around 10% of global greenhouse gas emissions. This number is expected to rise to 16% by 2050 if no action is taken to reduce emissions. Estimates suggest that international coordination on "efficient and climate-friendly cooling" could help avoid more than 460 billion tons of greenhouse gas emissions (UNEP/IEA Cooling Synthesis Report 2019).

With proper planning and policy implementation, sustainable cooling can provide a wide range of benefits:

- **Environmental preservation:** Sustainable cooling promotes the use of natural refrigerants, renewable energy sources, and energy-efficient cooling technologies, minimizing the impact on the environment.
- **Energy conservation:** The new system design for the sustainable cooling systems consumes less energy, which reduces the reliance on fossil fuels, lowers energy demand and reduces greenhouse gas emissions, that helps in achieving energy security.
- **Cost-effectiveness:** These solutions are cost-effective in the long run, as they require less maintenance, have a longer life expectancy, and reduce energy bills.
- **Resilience:** These solutions and policies for sustainable cooling offer more reliable and resilient cooling systems, as renewable energy and natural refrigerants are not subject to market volatility or supply-chain disruptions, unlike fossil fuels.
- **Social equity:** Sustainable cooling leads to solutions and technologies that are accessible and affordable to people in low-income communities who are more vulnerable to heatwaves, providing them with comfortable and healthy living conditions.

To facilitate access to sustainable cooling solutions, there is an urgent need for international collaboration to foster public-private deployment for solutions like: district cooling, cold chains, passive cooling, super-efficient cooling appliances, and other measures. Policymakers can incentivize businesses to create energy-efficient cooling products and ensure that sustainable cooling is considered during planning and designing sectors like energy, urban and cities, transport, agricultural, and health services.

This High-Level Ministerial Dialogue will also rally momentum for global action and increased ambition on sustainable cooling, including through the G20 and COP28 processes, Ministers and CEOs will be invited to share their own sustainable cooling journey their aspirations, and how G20 and COP28 processes can amplify

these and enhance global collaboration. This discussion will showcase how G20 and COP28 can make sustainable cooling for all a reality.

Objectives

- Enhance public and private sector commitment to the international collaboration on innovation, investment, technology dissemination and policy deployment to promote sustainable cooling and to provide access to cooling solutions that are energy-efficient, affordable, and environmentally friendly, while fulfilling the cooling needs of the population.

Discussion Questions

- What is the impact of the cooling sector on the energy demand in your country?
- How can we overcome barriers that hinder the widespread deployment of sustainable cooling technologies? What targeted policies, incentives, innovation, and capacity-building efforts are your government/organization putting in place?
- How can platforms like CEM and MI as well as G20 and COP28 processes facilitate the move towards sustainable cooling?
- How can international collaboration be enhanced to promote widespread adoption of sustainable and energy-efficient cooling technologies, while ensuring access and affordability without warming the planet?

Knowledge Partner Representative

- Ms. Lily Riahi, Global Coordinator, Cool Coalition, United Nations Environment Programme
- Ms. Sophie Loran, Global Lead, Communication & Advocacy, United Nations Environment Programme

Agenda

Agenda item	Speakers	Timing
Welcome remarks	**Mr. Abhay Bakre**, Director General, Bureau of Energy Efficiency, Ministry of Power	3 minutes
Opening remarks	**H.E Dr. Jitendra Singh**, Hon'ble Minister of Science and Technology, Government of India	7 minutes
Ministerial Intervention: Forging an Actionable Agenda for Sustainable Cooling through G20 and COP28 Moderated by Mr. Abhay Bakre, Director General, Bureau of Energy Efficiency, Ministry of Power	**H.E. Dr. Sultan Al Jaber**, Hon'ble Minister of Industry and Advanced Technology and President COP 28, Government of United Arab Emirates **H.E Dan Jørgensen**, Minister for Development Cooperation and Global Climate Policy, Denmark	12 minutes
Family Photo		
Special remarks	**Ms. Damilola Ogunbiyi,** CEO of SEforALL, Special Representative of the UN Secretary-General for Sustainable Energy for All **Ms. Ligia Noronha**, UN Assistant Secretary-General and Head of UN Environment Programme, New York Office **Mr. Rohit Monserrate,** Mayor of Panaji, India	18 minutes
Panel Reflections: Enabling a Global Transition to Sustainable Cooling Moderated by Ms. Lily Riahi, Global Coordinator, Cool Coalition, UNEP	**Mr. Ravi Purushothaman,** President, Danfoss India **Ms. Rosalinde van der Vlies,** Director, European Commission and Vice-Chair of Mission Innovation Secretariat **Ms. Anna Stephenson,** Deputy Director, UK Department of Energy Security and Net Zero **Mr. Philippe Benoit**, Professor, Colombia University	30 minutes
Closing Remarks	**Ms. Lily Riahi**, Global Coordinator, Cool Coalition, UNEP	5 minutes

Overarching key messages

- A rapid transition to **sustainable cooling is crucial for climate adaptation, reducing emissions, protecting human well-being, and supporting the Just Energy Transition**. Cooling has long been a blind spot but is increasingly recognised as a hotspot for needed action by governments, cities, global institutions.

- Heat-related deaths, GDP losses, and food loss due to lack of sustainable cooling have shed light on the **common challenge we face across the world** and the urgent need to increase access to thermal comfort with sustainable cooling solutions to avoid further warming.

- Increasing the efficiency of new air conditioners is **key to align cooling with the Net Zero Emissions by 2050 Scenario**.

- **Nature-based solutions, energy storage, and renewable technologies** offer viable options for sustainable cooling in various contexts.

- **Collaboration, transparency, and regular progress** review are necessary to accelerate access to sustainable cooling and reduce emissions globally.

Biographies

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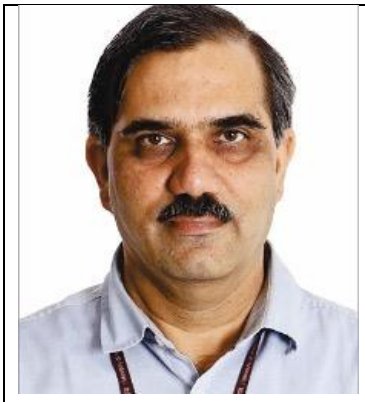
<td>  </td>
<td>Mr. Abhay Bakre, Director General, Bureau of Energy Efficiency (BEE), Ministry of Power, Government of India

Shri Abhay Bakre is a Postgraduate (M. Tech.) in Elect. Engineering from IIT, Kharagpur. He belongs to 1988 Batch of Indian Railways Electrical Engineering Services, Ministry of Railways. He has worked in several Railway projects including Delhi Metro & Kolkata Metro extension projects. He has also worked as Joint Development Commissioner in the Ministry of Micro, Small and Medium Enterprises and was Nodal officer for National Manufacturing Competitiveness Programme.

As the Head of Petroleum Conservation Research Association (PCRA) under the Ministry of Petroleum & Natural Gas he was responsible for initiating fuel conservation policy in the transport sector and appliance sector. Before joining BEE, he worked as Executive Director in the Ministry of Railways, and he was nodal officer for GHG reduction in Indian Railways.</td>
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<td>H.E Dr. Jitendra Singh, Minister of Science and Technology, Government of India

Dr Jitendra Singh is the Minister of State (Independent Charge) for Science and Technology. He is a physician known for his work on diabetes and endocrinology. He has been a professor, a consultant, clinical practitioner, author of eight books, and a newspaper columnist as also the ex-chairman for the National Scientific Committee Diabetes and the Research Society for the Study of Diabetes in India.</td>
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	With an M.B.B.S. degree from Stanley Medical College, Chennai and M.D. from Government Medical College, Jammu, Dr Singh has authored several books including Monograms on Diabetes and World Book Fair best seller, "Diabetes Made Easy". He is also the author of chapters on diabetes in text books for Post Graduate Course (Medicine) and runs a syndicated weekly column "Tales of Travesty", popularly read and regularly published for three decades.
	**H.E Dr. Sultan Ahmed Al Jaber, COP28 President-Designate, UAE Special Envoy for Climate Change, and Minister of Industry and Advanced Technology** H.E. Dr Sultan Al Jaber is a Minister of State in the United Arab Emirates Cabinet and COP28 UAE President Designate, Managing Director and Group Chief Executive Officer of the Abu Dhabi National Oil Company (ADNOC Group) and Chairman of Masdar. In January 2023, Dr Al Jaber was appointed COP28 UAE President Designate, where he is tasked with convening global consensus around raising ambition to achieve the goals of the Paris Agreement and translate those goals into practical action. He has been UAE Special Envoy for Climate since November 2020 and previously served in the role from 2010 to 2016. Dr. Al Jaber has over 20 years' experience across the energy spectrum and has played a leading role in the country's energy diversification.
	**H.E Dan Jørgensen, Minister for Development Cooperation and Global Climate Policy, Denmark** H.E Dan Jørgensen is a member of The Danish Parliament (Folketinget) for The Social Democratic Party in Funen greater constituency from 18 June 2015. He is currently the Minister for Development Cooperation and Global Climate Policy from 15 December 2022. Prior to this, he served as the Minister for Climate, Energy and Utilities 27 June 2019 – 14 December 2022. He was tasked with the job of achieving the world's most ambitious climate target: to reduce Denmark's greenhouse-gas emissions by 70 percent by 2030 and achieve climate neutrality by 2050. He has also previously served as the Minister for Food, Agriculture and Fisheries, 12 December 2013 – 28 June 2015; Vice-chairman of the parliamentary group of the Social Democratic Party 2017 – 2019 and Member of the European Parliament, 20 July 2004 – 11 December 2013. He studied MSc Political Science, Aarhus University, 2004.

Ms. Damilola Ogunbiyi, CEO of SEforALL, Special Representative of the UN Secretary-General for Sustainable Energy for All

United Nations Secretary-General António Guterres announced in October 2019 the appointment of Damilola Ogunbiyi of Nigeria as his Special Representative for Sustainable Energy for All and Co-Chair of United Nations-Energy.

Ms. Ogunbiyi was the first woman to be appointed as Managing Director of the Nigerian Rural Electrification Agency. She is also responsible for implementing the Nigerian Off Grid Electrification Programme and successfully negotiating the Nigerian Electrification Project, to rapidly construct solar mini-grids and deploy solar home systems across Nigeria. She also developed the Energizing Economics Initiative and Energizing Education Programme, which provide sustainable and affordable off grid power solutions. Before joining the Federal Government of Nigeria, Ms. Ogunbiyi was the first woman to be appointed as the General Manager of the Lagos State Electricity Board.

Ms. Ogunbiyi is a globally respected leader with a broad and diverse international network in the area of energy development, which includes key relationships with leading multilateral and bilateral partners and the private sector. She is also one of the Commissioners for the Global Commission to End Energy Poverty.

Ms. Ligia Noronha, UN Assistant Secretary-General and Head of UN Environment Programme, New York Office

Ms. Ligia Noronha began her role as United Nations Assistant Secretary- General and Head of the New York Office at UNEP on 1 April 2021. In this role she works in establishing and maintaining critical links with the Permanent Missions of Member States to the United Nations, the United Nations Secretariat, other UN System organizations and entities headquartered in New York, major groups, civil society organizations, academia and the private sector. Through her leadership of the New York Office, she seeks to promote effective integration of the environmental dimension in the UN System, in the inter-agency mechanisms and in the intergovernmental processes while raising awareness of emerging environmental issues and the outcomes of the United Nations Environment Assembly.

An economist with over 30 years of international experience in the field of sustainable development, Ms. Noronha previously served as Director of UNEP's Economy Division based in Paris and Nairobi, leading UNEP's work on climate mitigation and energy transitions; on inclusive green economies, circularity and sustainable consumption and production, as well as on trade and

	sustainable finance; on extractives, and the nexus of environment, pollution and health. During her tenure, Ms. Noronha positioned the Economy Division as a centre for integrated actions in support of the 2030 Agenda. Prior to joining UNEP, Ms. Noronha worked as Executive Director at The Energy and Resources Institute (TERI) in New Delhi; she served as Secretary of the Asian Energy Institute and as Coordinator of the Renewable Energy and Energy Efficiency Partnerships (REEEP) and worked with the International Development Research Centre (IDRC), Canada. She holds a Master's degree in Economics from the University of Mumbai, as well as a Master's degree in Sea Use Law, Economics and Policy and a Ph.D. from the London School of Economics. Ms. Noronha is married with three children.
	**Mr. Rohit Monserrate, Mayor of Panaji, India** Rohit Monserrate is a politician who currently serves as the Mayor of the Corporation of the City of Panaji (CCP). Rohit Monserrate has held the position of Mayor since March 2021 after winning the elections to the civic body. The Mayor and Deputy Mayor positions are elected annually, and Monserrate is expected to continue serving as Mayor for a third year. The CCP has jurisdiction over both Panaji and Taleigao, excluding areas under the Taleigao panchayat. In terms of the CCP's budget, a surplus of Rs 1.72 crore was presented at a special meeting. The budget includes projected total receipts (capital and revenue) of Rs 99.8 crores and total expenditure of approximately Rs 98.09 crore.
	**Mr. Ravi Purushothaman, President, Danfoss India** Ravichandran Purushothaman is President of Danfoss India, the Indian subsidiary of global major in climate and energy solutions. With experience spanning over 28 years, Purushothaman has worked extensively in building businesses in India, Asia Pacific and Europe. Mr. Ravichandran was a Senior Director for Power Electronics, Asia Pacific. He is among the key members who developed the new growth strategy for Danfoss India. Having been with Danfoss since 2002, an important aspect of Ravichandran's role will be to establish support to the India market growth and ensure the company's continued growth expansion in the country. With over 25 years of experience, Mr Ravichandran has held roles spanning across sales and distribution, business development, project management, change management, and general management functions in the India and Asia Pacific. He is an electronics and communication engineer who completed his management education program from IIM, Ahmedabad. He has

	participated in strategic leadership and international business programs in European business schools.
	**Ms. Rosalinde van der Vlies, Director, European Commission and Vice-Chair of Mission Innovation Secretariat** Ms. Rosalinde van der Vlies, is the Director of the Clean Planet Directorate in the European Commission's, Directorate-General for Research and Innovation. Before her appointment as Director, Ms van der Vlies was the Head of Coordination & Interinstitutional Relations Unit, and acting Head of Communication & Citizens Unit. Previously she held positions in Directorate-General Environment, Directorate-General Justice and Home Affairs, and in the private office of Janez Potočnik, the European Commissioner for the environment. Before joining the European Commission, she worked as a competition lawyer in an international law firm in Brussels and was a part-time teacher at the Catholic University in Brussels.
	**Ms. Anna Stephenson, Deputy Director, UK Department of Energy Security and Net Zero** Dr Anna Stephenson is the Deputy Director for Engineering and Research at the UK Government Department for Energy Security and Net Zero, where she leads a team of specialist engineers, scientists and policy and delivery professionals to drive and inform the transition to a net zero energy system. In addition, she leads on international engagement on energy innovation via Mission Innovation and IEA, and the Disruptive Innovation theme of the £1billion Net Zero Innovation Portfolio. She is a chartered chemical engineer, having worked in BEIS, its predecessor DECC, and FCDO in engineering roles, as well working as a process engineer for an energy from waste company prior to this. Anna started her career in academia, completing her PhD and a post-doctoral research at the University of Cambridge Chemical Engineering and Biotechnology Department, in the field of biofuels from microalgae.

Mr. Philippe Benoit, Professor, Colombia University

Philippe Benoit is an Adjunct Senior Research Scholar at the Center on Global Energy Policy at Columbia University SIPA. Philippe has had a distinguished career in energy, development, and climate policy. His experience spans a wide spectrum of regions, including the emerging economies of Asia and Latin America, developing countries in Sub-Saharan Africa, North America, and Europe. He has over 25 years of experience in working on energy, finance, and development in both the private and public sectors. From 2011-2016 Philippe served as head of the Energy Environment and Energy Efficiency Divisions at the International Energy Agency. In addition to his time at the IEA, he worked for over 15 years at the World Bank, including as energy sector manager for Latin America and the Caribbean, and at Société Générale as a director in the Energy Project Finance Department.

Philippe has managed over 50 publications in the areas of clean energy, development, and climate change while at the IEA and the World Bank. He holds a J.D. from Harvard Law School, a B.A. in economics and political science from Yale University, and a masters in trade law from the University of Paris.

Ms. Lily Riahi, Global Coordinator, Cool Coalition, UNEP

Lily serves as the coordinator of the Cool Coalition, an official outcome of the UN Climate Action Summit in 2019, working with countries and industry to accelerate the transition to sustainable cooling and cold chain. At UNEP since 2014, she also oversees UNEP's urban energy work and previously the district energy portfolio where she successfully unlocked over $200 million in direct investments for energy infrastructure globally.

Previously Lily has worked as an energy advisor at REN21, Environmental Defense Fund, ICLEI and the German parliament- where she participated in the set-up of the IRENA. She is also the report author of a UNEP flagship 'District Energy in Cities: Unlocking the Potential of Energy Efficiency and Renewable Energy". She has a master's degree in Renewable Energy Policy from York University and a bachelor's degree in political science from the University of Toronto.