

Roadmap for Transformative Action to Achieve Health for All at Net-Zero Emissions

Committee

Howard Frumkin

Chair

Howard Frumkin, MD, DrPH, MPH, Chair, is Professor Emeritus at the University of Washington School of Public Health. A physician-epidemiologist, his career has focused on the health dimensions of climate change, the built environment, nature contact, and sustainability within a Planetary Health framework. He has served as Senior Vice President at Trust for Public Land, Dean of the University of Washington School of Public Health, Head of the “Our Planet, Our Health” initiative at the Wellcome Trust, and Director of the CDC’s National Center for Environmental Health. Dr. Frumkin is author or co-author of more than 300 scientific publications and ten books, including *Making Healthy Places: Designing and Building for Health, Well-Being, and Sustainability* (2nd ed., 2022); *Environmental Health: From Global to Local* (4th ed., forthcoming 2026); *Planetary Health: Protecting Nature to Protect Ourselves* (2020); and *Planetary Health: Safeguarding Human Health and the Environment in the Anthropocene* (2021). He is a member of the National Academy of Medicine and serves on the NAM Commission on Reimagining Systems for a Healthier Climate Future. Dr. Frumkin reports serving on advisory boards or equivalent committees for the Planetary Health Alliance; the Harvard Center for Climate, Health, and the Global Environment; the Medical Society Consortium on Climate Change and Health; the Global Consortium on Climate and Health Education; the Yale Center on Climate Change and Health; and EcoAmerica’s Climate for Health program. All roles are voluntary and unpaid.

Arun Agrawal

Member

Arun Agrawal, PhD, MBA, is the Pulte Family Professor of Development Policy at the Keough School of Global Affairs and the Inaugural Director of the Just Transformations to Sustainability Initiative at the University of Notre Dame. His research and teaching focus on environmental politics, institutional change, and sustainable development, with work examining Indigenous knowledge, community-based conservation, commoning, agrarian change, and the governance of environmental and sustainability transitions. His fieldwork spans more than 20 countries across Asia, Africa, and Latin America, and his research has been supported by numerous public and private funders, including the National Science Foundation, the Guggenheim Foundation, the MacArthur Foundation, the Ford Foundation, the Moore Foundation, and government agencies in the United States and United Kingdom. His work has appeared in *Science*, *Proceedings of the National Academy of Sciences (PNAS)*, *American Political Science Review*, *Current Anthropology*, and multiple journals in the Nature portfolio. Dr. Agrawal serves on the editorial board of *PNAS* and several interdisciplinary journals and has held positions at the University of Michigan, Yale University, University of Florida, McGill University, UC Berkeley, Indiana University, and Harvard University. He is a member of the National Academy of Sciences. Dr. Agrawal reports no relevant financial or other professional relationships directly relevant to the work of this committee.

Mariana J. Alegre Escorza

Member

Mariana Alegre, MSc, MA, is a Lecturer at the Harvard Graduate School of Design, a Tenured Professor at the Pontificia Universidad Católica del Perú (PUCP), and the Founder and Executive Director of Sistema Urbano, a Latin American urban innovation ecosystem. Her work focuses on the intersection of public space, spatial justice, climate resilience, sustainable mobility, and participatory urban governance, with an emphasis on advancing healthier, safer, and low-carbon cities in vulnerable contexts across the Global South. She leads several major initiatives, including *Ocupa Tu Calle*, a public space strategy; *Lima Cómo Vamos*, Peru's leading urban observatory on quality of life; *Clima Urbano*, which promotes socio-ecological urbanism to address the climate emergency; and *Nodal*, a platform designed to equip and connect urban changemakers. Across these efforts, she specializes in designing and implementing multi-stakeholder processes that integrate data, community participation, and public policy to accelerate equitable urban transformation in partnership with local governments. Professor Alegre is a 2025 Loeb Fellow at Harvard University and has been recognized as a Remarkable Woman in Transportation by Women Mobilize Women. She has collaborated with international research networks such as SALURBAL and has published on urban inequality, public space, urban health, and participatory governance. She holds an MSc in City Design and Social Science from the London School of Economics and Political Science, an MA in Human Rights, and a BA in Law from PUCP. Professor Alegre reports no financial or other disclosures relevant to the work of this committee.

Antonio Andreoni

Member

Antonio Andreoni, PhD, is Professor of Development Economics at SOAS University of London and Co-Founding Director of the SOAS Centre for Sustainable Structural Transformation (CSST). A leading scholar of industrial policy, industrial innovation, and sustainable structural transformation, his work has been published in *World Development*, *Cambridge Journal of Economics*, *Development and Change*, *Structural Change and Economic Dynamics*, *Industrial and Corporate Change*, *BMJ Open*, *Technovation*, *Energy Policy*, and *Oxford Review of Economic Policy*. His books include *Structural Transformation in South Africa* (Oxford University Press, 2021) and *From Financialization to Innovation in UK Big Pharma* (Cambridge University Press, 2022). Dr. Andreoni serves as Editor of *Competition and Change* and has more than 15 years of advisory experience with international organizations such as UNCTAD, UNIDO, UNDESA, ILO, UNDP, the World Bank, and OECD, as well as national governments across Africa and Europe. In 2024, he was appointed to the Presidential Economic Advisory Council of South Africa. He has held honorary positions at UCL, the University of Johannesburg, and Tsinghua University and has received funding from UK Aid, the Open Society Foundation, the Gatsby Foundation, TCOM, and Hyundai Motor Group. He holds a PhD from the University of Cambridge. Dr. Andreoni reports no financial interests or other professional relationships directly relevant to the work of this committee.

Adebisi Oluseun Araba

Member

Debisi Araba, PhD, MPA, MSc, is Managing Director of AKADEMIYA2063, where he leads efforts to expand the generation and use of data, analytics, and mutual learning to support African countries in implementing the African Union's Agenda 2063 and achieving its development goals. His work focuses on public policy, innovation, and strategy at the nexus of food systems, climate resilience, and sustainable development, with particular emphasis on evidence-based policymaking for agricultural transformation. Dr. Araba is also a Visiting Research Fellow at the Centre for Environmental Policy at Imperial College London, where his research explores climate-smart agriculture, food systems resilience, and the translation of scientific insights into policy impact. He previously served as the inaugural Managing Director of the Africa Green Revolution Forum (now the Africa Food Systems Forum) and as the Africa Region Director at the International Center for Tropical Agriculture (CIAT), part of the CGIAR Consortium. Earlier, he was Senior Technical Adviser on Environmental Policy to the Minister of Agriculture and Rural Development in Nigeria. He has advised numerous regional and global institutions, including the African Development Bank, the Africa Climate Summit, and the Global Alliance for Improved Nutrition, and has contributed broadly to policy dialogues on sustainable food systems, environmental governance, and Africa's agricultural potential. Dr. Araba is also a member of the Malabo Montpellier Panel, an expert group supporting African and European governments in advancing agricultural development and food security. He holds a PhD in Environmental Policy from Imperial College London, an MPA from the Harvard Kennedy School, an MSc in Clean Technology from the University of Newcastle Upon Tyne, and a BA in Physical Geography from the University of Ibadan. Dr. Araba reports no financial or other disclosures relevant to the work of this committee.

Zulfiqar A. Bhutta

Member

Zulfiqar A. Bhutta, PhD, FRCPCH, MBBS, is Founding Director of the Institute for Global Health & Development at Aga Khan University, the Inaugural Robert Harding Chair in Global Child Health, and Co-Director of the Centre for Global Child Health at the Hospital for Sick Children (SickKids) in Toronto. He leads research programs based in Toronto, Canada; Karachi, Pakistan; and Nairobi, Kenya, that focus on scaling evidence-based interventions in reproductive, maternal, newborn, child, and adolescent health, including in humanitarian contexts. Dr. Bhutta earned his MBBS from the University of Peshawar, FRCPCH from the Royal College of Paediatrics & Child Health (UK), and his PhD from the Karolinska Institute in Stockholm, Sweden. He is a Fellow of the Royal Society and the International Science Council. His major honors include the 2021 IHME Roux Prize, the 2022 Gairdner Global Health Award, the 2023 Henry G. Friesen International Prize in Health Research, the 2024 Rosen Von Rosentein Prize in Child Health and the 2025 Virchow Prize for Global Health. He has published extensively on climate and health—including climate-related water challenges, human resilience, and financing for women’s and children’s health in climate-vulnerable settings. Dr. Bhutta is a member of the National Academy of Medicine; was a lead author of the NAM special publication *A Research Agenda to Protect Human Health and Build Resilience in the Face of a Changing Climate*; and currently serves on the NAM Commission on Reimagining Systems for a Healthier Climate Future. Dr. Bhutta reports receiving climate research funding in his capacity as Co-Director of the Centre for Global Child Health at the Hospital for Sick Children from the International Development Research Centre and Grand Challenges Canada, and in his capacity as Founding Director of the Institute for Global Health & Development at Aga Khan University from the Wellcome Trust.

Anita Chandra

Member

Anita Chandra, DrPH, MPH, the RAND Distinguished Chair in American Social Policy, Senior Principal Policy Researcher, and Professor of Policy Analysis at the RAND School of Public Policy. She previously served as Vice President and Director of RAND Social and Economic Well-Being, where she oversaw major initiatives at the intersection of social and economic policy, environmental and infrastructure systems, and community well-being. Her research focuses on systems change, program and policy design and implementation, and measurement science in areas including positive health and health equity, civic well-being and community planning, and disaster resilience. Dr. Chandra works closely with federal, state, and local government partners in the United States and internationally to strengthen systems for emergency preparedness and resilience, modernize data systems, and support health-in-all-policies and civic transformation efforts. She earned her DrPH in population and family health sciences from the Johns Hopkins Bloomberg School of Public Health. Dr. Chandra has contributed to multiple National Academies consensus studies, most notably on measuring community resilience. Dr. Chandra reports no financial interests or other professional relationships directly relevant to the work of this committee.

Nair de Sousa

Member

Nair de Sousa, MSc, is the Energy Sustainability Director at the African Circular Business Alliance (ACBA), where she leads the organization's Geosciences and Technology Deployment teams. Her work focuses on advancing low-carbon technologies across multiple sectors supporting governments, businesses, and communities in strengthening their NDCs through circular economy strategies and regulatory frameworks for technology deployment. She conducts assessments of carbon and methane emissions from industrial processes and evaluates opportunities to build carbon markets for reduction, protection, and removal. Ms. de Sousa also leads studies on the geological potential for permanent CO₂ storage in countries such as Angola and Nigeria to support regional infrastructure for carbon capture, transport, and long-term storage. A climate geoscientist and former field and reservoir engineer, she previously contributed to major carbon capture and storage policy efforts in the United States and Europe, gaining expertise in technical, business model, and policy dimensions of industrial decarbonization. She brings this experience to emerging markets across Africa, helping to shape strategies for a resilient, net-zero energy future. Ms. de Sousa holds a BSc in Geology, a postgraduate degree in Research Methods in Geosciences, and an MSc in Reservoir Evaluation and Management, with additional training in financial risk management and sustainability and climate risk. She is a member of the Global Women's Network for the Energy Transition, the African Hydrogen Hub, and the Young African Leaders Initiative, and is a 2021 Mandela Washington Fellow. Ms. de Sousa reports a direct equity/ownership interest in ACBA Energy, a privately held clean-energy startup. She has provided paid consultancy services to Power2Build (2020–2021), the Government of Nigeria (2022–2023), the Government of Angola (2023–2025), the Fossil Fuel Non-Proliferation Treaty (2024–2025), the UNFCCC and IPCC (2024). Ms. de Sousa does not anticipate that these interests will be directly and predictably influenced by the committee's work.

Ana V. Diez Roux

Member

Ana V. Diez Roux, MD, PhD, MPH, is Distinguished Professor of Epidemiology and Director of the Drexel Urban Health Collaborative at Drexel University. From 2014 to 2023, she served as Dean of the Dornsife School of Public Health. Prior to that, she was Chair of the Department of Epidemiology and Director of the Center for Social Epidemiology and Population Health at the University of Michigan. An internationally recognized leader in social epidemiology, Dr. Diez Roux's research focuses on the social determinants of health, neighborhood environments, and urban health, including work documenting the health impacts of climate change-related hazards. She has led major research and training programs in these areas and currently serves as Principal Investigator of the Wellcome Trust-funded SALURBAL Climate Study and the NIH-funded Drexel Center on Extreme Weather Events and Urban Health (CCUH). She has served on numerous editorial boards, review panels, and advisory committees, including as Chair of the EPA Clean Air Scientific Advisory Committee and as a member of the CDC Community Preventive Services Task Force. She currently co-chairs the National Academies' Roundtable on Population Health Improvement. Dr. Diez Roux holds an MD from the University of Buenos Aires and an MPH and PhD from the Johns Hopkins School of Hygiene and Public Health. She was elected to the National Academy of Medicine in 2009. Dr. Diez Roux reports no financial interests or other professional relationships directly relevant to the work of this committee.

Renzo R. Guinto

Member

Renzo R. Guinto, MD, DrPH, is Associate Professor and Lead of the Planetary Health Programme at the SingHealth Duke-NUS Global Health Institute (SDGHI), Duke-NUS Medical School, National University of Singapore. A Filipino physician and pioneer in climate and health, he serves as Convener of Planetary Health Philippines; Chair of the Committee on Environmental Health and Ecology of the Philippine Medical Association; and Member of the National Panel of Technical Experts of the Philippine Climate Change Commission. Dr. Guinto's work spans climate-resilient and low-carbon health systems, the climate-migration-health nexus, climate change and mental health, and other dimensions of the planetary health agenda. An Aspen Institute New Voices Fellow, he serves on the WHO Technical Advisory Group on the Ethics of Climate and Health; the editorial boards of several journals, including The Lancet Planetary Health; the Board of Directors of Health Systems Global; and multiple Lancet Commissions, most notably the Lancet Commission on Sustainable Healthcare. He has been recognized as an Obama Asia-Pacific Leader, named by Tatler Magazine as one of 400 leaders shaping Asia's future, and honored as the inaugural laureate of the Kiyoshi Kurokawa Award for extraordinary contributions to health policy and innovation in the Asia-Pacific region. Dr. Guinto earned his MD from the University of the Philippines Manila and his DrPH from Harvard University. Dr. Guinto reports no financial interests or other professional relationships directly relevant to the work of this committee.

Joyeeta Gupta

Member

Joyeeta Gupta, PhD, LL.M, LL.B, is Professor of Environment and Development in the Global South at the University of Amsterdam and Professor at the IHE Delft Institute for Water Education. She previously served as Professor of Climate Change Policy and Law at the Vrije Universiteit Amsterdam. Dr. Gupta is a recipient of the Spinoza Prize (2023)—the highest academic honor in the Netherlands —and the Amsterdam Impact Prize (2025). She holds a European Research Council Advanced Grant (2021–2026) and is a lifelong member of the Royal Netherlands Academy of Arts and Sciences. She has served on the editorial boards of six scientific journals and was a lead author for the Intergovernmental Panel on Climate Change (1998–2014), contributing to work recognized with the 2007 Nobel Peace Prize, as well as for the Millennium Ecosystem Assessment, which received the Zayed Prize. Dr. Gupta has supervised 33 PhD students and has led or participated in securing more than 60 funded research projects. Dr. Gupta co-chairs the UN Secretary-General’s 10-member, high-level group on Science, Technology, and Innovation for the SDGs and serves as a Commissioner on the National Academy of Medicine’s Commission on Reimagining Systems for a Healthier Climate Future. She was previously a Commissioner on the Global Commission on the Economics of Water (2022–2024) and Co-Chair of the Earth Commission (2019–2024), whose work has been published in *Nature* and *The Lancet Planetary Health* and featured at the World Economic Forum. She also co-chaired UNEP’s Global Environment Outlook-6: Healthy Planet, Healthy People (2016–2019), which received the 2019 Association of American Publishers PROSE Award in Environmental Science. Dr. Gupta reports no financial interests or other professional relationships directly relevant to the work of this committee.

Fadhel Kaboub

Member

Fadhel Kaboub, PhD, MA, is Associate Professor of Economics at Denison University, President of the Global Institute for Sustainable Prosperity, and a Board Member of the UN High-Level Advisory Board on Economic and Social Affairs at UN-DESA. He also serves as a member of the Independent Expert Group on Just Transition and Development, the Global Solidarity Levies Task Force, the Earth4All 21st Century Transformational Economics Commission, the Independent Expert Group on Just Transition Finance, and the Steering Committee of the Fossil Fuel Non-Proliferation Treaty Initiative. He previously served as Under-Secretary-General for Financing for Development at the Organization of Southern Cooperation in Addis Ababa, Ethiopia. Dr. Kaboub is an expert on designing public policies that enhance monetary and economic sovereignty in the Global South, build resilience, and promote equitable and sustainable prosperity. He is co-author of *Just Transition: A Climate, Energy, and Development Vision for Africa* (2023). His research affiliations have included the Levy Economics Institute, the Harvard Kennedy School, the Economic Research Forum (Cairo, Egypt), Power Shift Africa (Nairobi), the African Forum on Climate Change, Energy and Development (Abuja, Nigeria), and the Center for Strategic Studies on the Maghreb (Tunis, Tunisia). He holds a BS in Economics from the University of Tunis and an MA and PhD in Economics from the University of Missouri-Kansas City. Dr. Kaboub reports no financial interests or other professional relationships directly relevant to the work of this committee.

Vanessa B. Kerry

Member

Vanessa B. Kerry, MD, MSc, is Director of Global and Climate Health Policy in the Department of Environmental Health at the Harvard T.H. Chan School of Public Health and CEO of Seed Global Health. In 2023, she was appointed the first WHO Special Envoy for Climate Change and Health. Dr. Kerry also serves as a Commissioner on the National Academy of Medicine's Commission on Reimagining Systems for a Healthier Climate Future. Her work centers on health system strengthening, global health and climate policy, and cross-sector strategies to build climate-resilient health systems. Dr. Kerry has served as a climate and global health expert for the U.S. National Intelligence Council, is a member of the National Commission on Climate and Workforce Health, and serves on the World Economic Forum's Steering Committee for Climate and Health. She is also a Draper Richards Kaplan Foundation Social Entrepreneur, a World Economic Forum Young Global Leader, and a member of the Council on Foreign Relations. Dr. Kerry serves on the editorial boards of NEJM Evidence and Annals of Global Health and has been appointed to the President's Council for International Activities and the Board of the Jackson School of Global Affairs at Yale University. She holds an honorary degree in Public Service from Northeastern University and is a recipient of the NAM Global Grand Challenge Catalyst Award. She graduated from Yale University and Harvard Medical School, completed her clinical training at Massachusetts General Hospital, and earned her MSc from the London School of Economics and the London School of Hygiene & Tropical Medicine. Dr. Kerry reports no financial interests or other professional relationships directly relevant to the work of this committee.

Emani B. Kumar

Member

Emani B.V. Kumar, MURP, BEng, is Deputy Secretary General of ICLEI – Local Governments for Sustainability and the Founding Director of ICLEI South Asia. Since joining ICLEI in 2001, he has provided strategic leadership for the organization's work across South Asia and Southeast Asian countries overseeing major projects and research initiatives that advance sustainable and climate-resilient development throughout the region. In his role as Deputy Secretary General, Mr. Kumar works closely with ICLEI offices across Asia Pacific to ensure cohesive implementation of regional agendas and to guide advocacy and engagement across the Asia-Pacific. Mr. Kumar serves as Lead Director for several major regional initiatives, including the Asia LEDS Partnership and the Climate and Development Knowledge Network. He co-chairs the Asia-Pacific Localization Partnership for Sustainable Cities (APLP-CITIES) and the Asia-Pacific Regional Coordination Committee for the Making Cities Resilient 2030 (MCR2030) campaign. He holds degrees in Environmental Management (Bradford University, UK), Environmental Planning (CEPT University, Ahmedabad), and Civil Engineering (Delhi University). With more than three decades of experience, Mr. Kumar has worked extensively on climate policy and planning, water conservation, local governance, renewable energy, energy efficiency, social accountability, and systems management. Prior to joining ICLEI, he held positions at the Confederation of Indian Industry (CII), Development Alternatives (DA) and the National Institute of Urban Affairs (NIUA). He currently serves on the National Academy of Medicine's Commission on Reimagining Systems for a Healthier Climate Future. Mr. Kumar reports no financial interests or other professional relationships directly relevant to the work of this committee.

Desta Mebratu

Member

Desta Mebratu, PhD, MSc, is an Extraordinary Professor at the Centre for Sustainability Transitions at Stellenbosch University and a Visiting Professor at the Addis Ababa College of Technology and Built Environment. A United Nations retiree since 2016, he continues to provide technical advice and support to organizations including the Royal Academy of Engineering and various UN agencies. Dr. Mebratu brings more than 37 years of experience in sustainability and sustainable industrial development, working extensively with universities and the United Nations. At the UN Environment Programme (UNEP), he served as Head of the Business and Industry Program and as Deputy Director for Africa. A chemical engineer by training with a specialization in industrial environmental economics, he has published widely in peer-reviewed journals and books on sustainability and sustainable industrial development. He is a Fellow of the African Academy of Sciences (FAAS) and was recognized in 2023 by the Royal Academy of Engineering as one of its Engineering Icons for his contributions to engineering for sustainability. Dr. Mebratu reports leading the program on eliminating open waste burning from Africa on behalf of the Royal Academy of Engineering's Engineering X initiative since 2021, which culminated in the endorsement of the Regional Roadmap for Transformative Action on Eliminating Open Waste Burning from Africa by the African Ministerial Conference on the Environment (AMCEN) in 2025.

Wei Peng

Member

Wei Peng, PhD, is Assistant Professor of Public and International Affairs and the Andlinger Center for Energy and the Environment at Princeton University. Her research uses computational modeling to quantify the social, political, and environmental tradeoffs of climate policy. Dr. Peng leads the Health Effects of Deep Decarbonization (HEALED) project, examining how deep decarbonization pathways influence health outcomes. Her work has been published in *Nature*, *Nature Climate Change*, *Nature Sustainability*, *PNAS*, and other leading journals, and has been featured in national and local media, including PBS and NPR. She served as a co-author of the Fifth National Climate Assessment and as a planning committee member for the National Academies' workshop on macroeconomic implications of decarbonization policies and strategies. Before joining Princeton, Dr. Peng was Assistant Professor of International Affairs and Civil and Environmental Engineering at Pennsylvania State University. She received a BS in Environmental Sciences from Peking University and a PhD in Science, Technology, and Environmental Policy from Princeton University, and completed a Giorgio Ruffolo Postdoctoral Fellowship and Research Associateship at the Harvard Kennedy School. Dr. Peng reports no financial interests or other professional relationships directly relevant to the work of this committee.