Assessing Approaches to Updating the Social Cost of Carbon

Committee

Maureen L. Cropper

Co-Chair

MAUREEN L. CROPPER (NAS) is a Distinguished University Professor and Chair of the Department of Economics at the University of Maryland. She received a B.A. in economics from Bryn Mawr College (summa cum laude, 1969) and a Ph.D. in economics from Cornell University (1973). She is a Senior Fellow at Resources for the Future and a former Lead Economist at the World Bank. Dr. Cropper has served as chair of the EPA Science Advisory Board Environmental Economics Advisory Committee and as past president of the Association of Environmental and Resource Economists. She is a member of the National Academy of Sciences and a Research Associate of the National Bureau of Economic Research. Her research has focused on valuing environmental amenities (especially environmental health effects), on the discounting of future health benefits, and on the tradeoffs implicit in environmental regulations. Her current research focuses on energy efficiency in India, on the impact of climate change on migration, and on the benefits of collective action in pandemic flu control.

Richard G. Newell

Co-Chair

RICHARD G. NEWELL is the President and CEO of Resources for the Future (RFF), an independent nonprofit that improves environmental, energy, and natural resource decisionmaking through rigorous economic research and analysis. He has held senior government appointments as the administrator of the US Energy Information Administration and as the senior economist for energy and environment on the President’s Council of Economic Advisers. Dr. Newell is an adjunct professor at Duke University, where he was previously the Gendell Professor of Energy and Environmental Economics and Founding Director of its Energy Initiative. He has published widely on the economics of markets and policies for energy and the environment, including issues surrounding global climate change, energy efficiency, and energy innovation. He is a research associate of the National Bureau of Economic Research and a member of the National Petroleum Council, advisory boards of the National Academy of Sciences, and several other institutions. Dr. Newell holds a PhD from Harvard University and an MPA from Princeton's Woodrow Wilson School of Public and International Affairs.

Myles Allen

Member

MYLES ALLEN is Professor of Geosystem Science in the Environmental Change Institute, School of Geography and the Environment and Department of Physics, University of Oxford, and co-Director of the Oxford Martin Programme on Resource Stewardship. His research focuses on how human and natural influences on climate contribute to observed climate change and risks of extreme weather and in quantifying their implications for long-range climate forecasts. He has served on the Intergovernmental Panel on Climate Change 3rd, 4th and 5th Assessments, most recently on the IPCC Synthesis Report Core Writing Team in 2014. Key research contributions include developing the statistical methods used to quantify the size of human influence on climate; the application of Probabilistic Event Attribution to quantify the contribution of human influence to specific individual weather events; and the observation that cumulative emissions of carbon dioxide largely determine global mean surface warming, which implies that a substantial fraction of current fossil carbon reserves cannot be emitted into the atmosphere if warming greater than 2oC is to be avoided. Allen leads the climateprediction.net project, using distributed computing to run the world’s largest ensemble climate modelling experiments, and in 2010 was awarded the Appleton Medal and Prize from the Institute of Physics “for his important contributions to the detection and attribution of human influence on climate and quantifying uncertainty in climate predictions." He received his Doctorate in physics from the University of Oxford.

Maximilian Auffhammer

Member

MAXIMILIAN AUFFHAMMER is the George Pardee Jr. Professor of International Sustainable Development and Associate Dean of Interdisciplinary Studies at UC Berkeley. He joined the faculty at UC Berkeley in 2003. His research focuses on environmental and resource economics, energy economics and applied econometrics. He is a Research Associate at the National Bureau of Economic Research in the Energy and Environmental Economics group, a Humboldt Fellow, and a lead author for the Intergovernmental Panel on Climate Change (IPCC). Professor Auffhammer serves as Co-Editor of the Journal of the Association of Environmental and Resource Economists. His research has appeared in The American Economic Review, the Review of Economic Studies, The Review of Economics and Statistics, The Economic Journal, the Proceedings of the National Academies of Sciences, the Journal of Environmental Economics and Management, The Energy Journal and other academic journals. Professor Auffhammer is the recipient of the 2007 Cozzarelli Prize awarded by the National Academies of Sciences, the 2009 Campus Distinguished Teaching Award and the 2007 Sarlo Distinguished Mentoring Award. Professor Auffhammer received his B.S. in environmental science from the University of Massachusetts at Amherst in 1996, a M.S. in environmental and resource economics at the same institution in 1998 and a Ph.D. in economics from UC San Diego in 2003.

Chris E. Forest

Member

CHRIS E. FOREST is Associate Professor of Climate Dynamics, Earth and Environmental Systems Institute Associate, and Associate Director for Network for Sustainable Climate Risk Management (SCRiM) at Pennsylvania State University. He joined the faculty in the Department of Meteorology at The Pennsylvania State University in 2008 after 12 years as a Research Scientist at MIT working in the Joint Program on the Science and Policy of Global Change. He served as a Lead Author on the Climate Change Science Program SAP1.1 Report examining the estimates of temperature trends in the atmospheric and surface climate data and contributed to the IPCC AR4 Working Group 1 Chapter 11. He was an IPCC AR5 Lead Author on Chapter 9, "Evaluation of Climate Models" in Working Group 1. Dr. Forest was elected to serve on the Electorate Nominating Committee (ENC) through February 2018 for the Atmospheric and Hydrospheric Sciences Section of the American Association for the Advancement of Science (AAAS). Dr. Forest graduated from the University of Wisconsin-Madison in 1990 with a B.S. in Applied Math, Engineering, and Physics and from the Massachusetts Institute of Technology in 1996 with a Ph.D. in Meteorology.

Inez Y. Fung

Member

INEZ Y. FUNG (NAS) is a professor of atmospheric sciences at the University of California, Berkeley. She studies the interactions between climate change and biogeochemical cycles, particularly the processes that maintain and alter the composition of the atmosphere. Her research emphasis is on using atmospheric transport models and a coupled carbon-climate model to examine how CO2 sources and sinks are changing. She is also a member of the science team for NASA's Orbiting Carbon Observatory. Dr. Fung is a recipient of the American Geophysical Union's Roger Revelle Medal, and appears in a new NAS biography series for middle-school readers, Women's Adventure in Science. She is a fellow of the American Meteorological Society and the American Geophysical Union, as well as a member of the National Academy of Sciences, the American Academy of Arts and Sciences, and the American Philosophical Society. She received her B.S. in applied mathematics and her Ph.D. in meteorology from MIT.

James K. Hammitt

Member

JAMES HAMMITT is Professor of Economics and Decision Sciences at the Harvard T.H. Chan School of Public Health, Director of the Harvard Center for Risk Analysis, and an affiliate of the Toulouse School of Economics. Professor Hammitt's research concerns the development and application of quantitative methods—including benefit-cost, decision, and risk analysis—to health and environmental policy. Topics include management of long-term environmental issues with important scientific uncertainties, such as global climate change and stratospheric-ozone depletion, evaluation of ancillary benefits and countervailing risks associated with risk-control measures, and characterization of social preferences over health and environmental risks using revealed-preference, stated-preference, and health-utility methods. He received his Ph.D. in public policy from Harvard University.

Henry D. Jacoby

Member

HENRY D. JACOBY is the William F. Pounds Professor of Management (Emeritus) in the M.I.T. Sloan School of Management and former Co-Director of the M.I.T. Joint Program on the Science and Policy of Global Change, which is focused on the integration of the natural and social sciences and policy analysis in application to the threat of global climate change. An undergraduate mechanical engineer at the University of Texas at Austin, he holds a Ph.D. in Economics from Harvard University where he also served on the faculties of the Department of Economics and the Kennedy School of Government. He has been Director of the Harvard Environmental Systems Program, Director of the MIT Center for Energy and Environmental Policy Research, Associate Director of the MIT Energy Laboratory, and Chair of the MIT Faculty. He currently serves on a U.S. National Academies Committee to Advise the U.S. Global Change Research Program.

Robert Kopp

Member

ROBERT KOPP is an Earth system scientist and climate/energy policy expert. He serves at Rutgers University as an associate professor in the Department of Earth & Planetary Sciences and as Associate Director of the Rutgers Energy Institute. He is also a member of the Rutgers Institute of Earth, Ocean, and Atmospheric Sciences and the Rutgers Climate Institute, and is affiliated with graduate programs in Atmospheric Sciences, Geological Sciences, Oceanography, Statistics, and Planning and Public Policy. His research focuses on understanding uncertainty in past and future climate change, with major emphases on sea-level change and on the interactions between physical climate change and the economy. He is a lead author of Economic Risks of Climate Change: An American Prospectus (Columbia University Press) and served as the lead scientist for the the technical analysis underlying the Risky Business Project. He also served on the Maryland Climate Change Commission’s sea-level rise expert group and was a contributing author to both Working Groups 1 and 2 of the Intergovernmental Panel on Climate Change’s Fifth Assessment Report. Prior to joining the Rutgers faculty, he served as an AAAS Science & Technology Policy Fellow in the U.S. Department of Energy’s Office of Policy & International Affairs and as a Science, Technology & Environmental Policy postdoctoral research fellow at Princeton University. He is a Leopold Leadership Fellow and a recipient of the International Union for Quaternary Research (INQUA)’s Sir Nicholas Shackleton Medal and the American Geophysical Union’s William Gilbert Medal. He received his Ph.D. in geobiology from Caltech and his undergraduate degree in geophysical sciences from the University of Chicago.

William Pizer

Member

WILLIAM PIZER is Professor at Duke University, in the Sanford School of Public Policy. His current research examines how public policies to promote clean energy can effectively leverage private sector investments, how environmental regulation and climate policy can affect production costs and competitiveness, and how the design of market-based environmental policies can be improved. From 2008 until 2011, he was Deputy Assistant Secretary for Environment and Energy at the U.S. Department of the Treasury, overseeing Treasury’s role in the domestic and international environment and energy agenda of the United States. Prior to that, he was a researcher at Resources for the Future for more than a decade. He has written more than two dozen peer-reviewed publications, books, and articles, and holds a Ph.D. and Master's degree in economics from Harvard University and Bachelor's degree in physics from the University of North Carolina at Chapel Hill.

Steven Rose

Member

STEVEN ROSE is a Senior Research Economist in EPRI's Energy and Environmental Research Group. Steve's research focuses on long-run modeling of energy systems and climate change drivers, mitigation, and potential risks, as well as the economics of land-use and bioenergy as they relate to domestic and international climate change and energy policy. Steve was a lead author for the IPCC's Fifth and Fourth Assessment Reports, and the U.S. National Climate Assessment. In addition, Steve co-chairs the bioenergy modeling subgroup of Stanford University's Energy Modeling Forum (EMF), and serves on the federal government's U.S. Carbon Cycle Science Program Carbon Cycle Scientific Steering Group and EPA's Science Advisory Board panel on Carbon Dioxide Emissions from Biogenic Sources. Some current research interests and areas of publication include energy-water-land linkages, climate change risks and responses, the role of bioenergy in long-run climate management, mitigation institutions, offset mitigation investment risks and incentives, bioelectricity emissions, the economics of REDD+ and agricultural productivity, trade-offs between mitigation and temperature, and the marginal costs of climate change. Steve received his Bachelor of Arts degree in economics from the University of Wisconsin-Madison and his doctorate in economics from Cornell University.

Richard L. Schmalensee

Member

RICHARD SCHMALENSEE is the Howard W. Johnson Professor of Management Emeritus and Professor of Economics Emeritus at Massachusetts Institute of Technology. He was the John C. Head III Dean of the MIT Sloan School of Management from 1998 through 2007 and was a member of the President's Council of Economic Advisers from 1989 through 1991. He was formerly director of the MIT Center for Energy and Environmental Policy Research and a member of the MIT Energy Council. Schmalensee is a Fellow of the Econometric Society and the American Academy of Arts and Sciences. He has served on the executive committee of the American Economic Association and as a director of several corporations, and he is currently Chairman of the Board of Resources for the Future. His research and teaching have focused on industrial organization economics and its applications to business decision-making and public policy. He was the 2012 Distinguished Fellow of the Industrial Organization Society. Schmalensee holds an S.B. and a Ph.D. in economics from MIT.

John P. Weyant

Member

JOHN P. WEYANT is Professor of Management Science and Engineering, Director of the Energy Modeling Forum (EMF) and Deputy Director of the Precourt Institute for Energy Efficiency at Stanford University. He is also a Senior Fellow of the Precourt Institute for Energy and the Freeman-Spolgi Institute for International Studies at Stanford. He was a National Science Foundation Post-Doctoral Fellow at Harvard's Kennedy School of Government. His current research focuses on analysis of global climate change policy options, energy efficiency analysis, energy technology assessment, and models for strategic planning. He currently serves as co-editor of the journal Energy Economics. Weyant has been a convening lead author or lead author for the Intergovernmental Panel on Climate Change for chapters on integrated assessment, greenhouse gas mitigation, integrated climate impacts, and sustainable development, and most recently served as a review editor for the climate change mitigation working group of the IPCC's forth and fifth assessment reports. He was also a founder and serves as chairman of the Scientific Steering Committee of the Integrated Assessment Modeling Consortium (IAMC), an eight year old collaboratory with 53 member institutions from around the world. He has been active in the U.S. debate on climate change policy through the Department of State, the Department of Energy, and the Environmental Protection Agency. In California, he is a member of the California Air Resources Board's Economic and Technology Advancement Advisory Committee (ETAAC) which is charged with making recommendations for technology policies to help implement AB 32, The Global Warming Solutions Act of 2006. Weyant was awarded the US Association for Energy Economics; 2008 Adelmann-Frankel award for unique and innovative contributions to the field of energy economics. Weyant was honored in 2007 as a major contributor to the Nobel Peace prize awarded to the Intergovernmental Panel on Climate Change and in 2008 by Chairman Mary Nichols for contributions to the to the California Air Resources Board's Economic and Technology Advancement Advisory Committee on AB 32. Prof. Weyant earned a B.S./M.S. in Aeronautical Engineering and Astronautics, M.S. degrees in Engineering Management and in Operations Research and Statistics all from Rensselaer Polytechnic Institute, and a Ph.D. in Management Science with minors in Economics, Operations Research, and Organization Theory from University of California at Berkeley.