

Helen Kay Tope, Ph.D.

Planet Futures
Principal Consultant
Montreal Protocol & Climate Change
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Australia

Nationality: Australian

Languages: English

Qualifications

Ph.D. (Chemistry), Monash University, 1992

Bachelor of Science (Hons.)(Chemistry), First Class, Monash University, 1984

Summary of Experience

Dr Tope has nearly 30 years' experience in environmental policy development, scientific, technical and analytical studies, and emergency response. Her policy development work has focused on ozone layer protection, climate change, air quality, and chemicals and hazardous wastes management, with extensive experience in strategic policy, regulatory and legislative development and public policy processes. She has experience in policy-relevant scientific, technical and data analysis, including managing the development of an inventory of air pollutant emissions for the city of Brisbane.

Since 1995, she has been member of the Montreal Protocol's Technology and Economic Assessment Panel, and co-chair of the Aerosols, Sterilants, Miscellaneous Uses and Carbon Tetrachloride Technical Options Committee (ATOC), the Medical Technical Options Committee (MTOC), and more recently the Medical and Chemicals Technical Options Committee (MCTOC). With these groups, she provides leadership to synthesise policy-relevant technical advice for the Montreal Protocol and other treaty bodies, such as the Kyoto Protocol. Her work with these bodies has been recognised with international awards and acknowledged by the Australian Government. She has considerable professional experience in project management and delivery. She has completed Swinburne University of Technology's Carbon Accounting course.

Planet Futures (previously Energy International Australia), 2006 – present

With Planet Futures, previously Energy International Australia, a small consulting company, Dr Tope is an independent principal consultant providing strategic, policy and technical advice and facilitation services to government, business, and other non-governmental organisations on ozone-depleting substances (ODS), climate change, and other environmental issues.

During 2019-2020, the Australian Government's Department of Agriculture, Water and the Environment engaged Dr Tope and Mr Michael Atkinson, as Planet Futures, to provide a report on Australian non-defence halon uses and to estimate future non-defence halon demand. In 2012, the Australian Government's then Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) engaged Dr Tope and Mr Atkinson, then as Energy International Australia, to conduct a periodic review of Australia's halon essential uses requirements in the civilian sector. In 2010, Dr Tope provided specialist assistance to A-Gas P/L

in the preparation of its tender for the relocation and operation of the National Halon Bank to identify relevant Environment Protection Authority (EPA Victoria) statutory requirements. In 2010, Dr Tope assisted as co-author, with Dr Stephen Andersen and Mr Atkinson, on a project for the United Nations Environment Programme (UNEP) on metrics for identifying technology that minimizes climate and other impacts when replacing ozone-depleting and high global warming potential substances. During 2009, Dr Tope undertook a high-level review of the roles and activities of EPA Victoria relating to the dairy production industry in Victoria. During 2008, Dr Tope worked with the U.S. EPA, the Washington based Institute for Governance and Sustainable Development, and the Australian Departments of Defence and Environment to coordinate and co-author an Australian case study on military leadership in climate change.

In 2016, 2017, 2018, 2019, 2020, and 2021, Dr Tope has provided advisory and other services, to the Ozone Secretariat, the Montreal Protocol parties, the Technology and Economic Assessment Panel and its Medical and Chemicals Technical Options Committee, under contract to the United Nations Environment Programme.

In 2009, Dr Tope successfully completed Australia's first accredited Carbon Accounting course at Swinburne University of Technology.

Montreal Protocol's Technology and Economic Assessment Panel and its Medical and Chemicals Technical Options Committee, 1995-present

Since 1995, under the auspices of the United Nations Environment Programme for the Montreal on Substances that Deplete the Ozone Layer, Dr Tope has been a member of the Technology and Economic Assessment Panel (TEAP), and co-chair of its Aerosols, Sterilants, Miscellaneous Uses and Carbon Tetrachloride Technical Options Committee (ATOC), the Medical Technical Options Committee (MTOC), and more recently the Medical and Chemicals Technical Options Committee (MCTOC). MCTOC is the expert group that provides consensus technical and economic information relating to ODS and HFCs used for aerosols, metered dose inhalers, other medical aerosols, sterilants, process agents, feedstocks, solvents, laboratory and analytical uses, destruction technologies, and carbon tetrachloride and other chemicals with ozone depleting potentials. The committee examines the use and phase-out of, and alternatives to, ODS and HFCs and provides policy-relevant technical advice on these topics.

As co-chair, she contributed valuable analysis and perspective to the phase-out of metered dose inhalers containing CFCs, with her policy skills helping to craft the original concept of national transition strategies to facilitate the global transition from CFC MDIs to CFC-free alternatives. She negotiated consensus among experts who were also stakeholders, including the international pharmaceutical industry sector, to achieve positive environmental outcomes with significant global economic implications, within a complex mix of competing needs relating to patient health, commercial interests, and ozone layer protection.

She has contributed to more than 30 reports for the Montreal Protocol by the TEAP, its Committees or Task Forces. As a member of TEAP, she has been a co-chair or member of several of its Task Forces, including those concerning unexpected emissions of CFC-11, destruction technologies, hydrochlorofluorocarbons, process agents, and hydrofluorocarbons. She is currently co-chair of the TEAP Task Force on Unexpected Emissions of CFC-11. She also worked as a technical reviewer of the Intergovernmental Panel on Climate Change/TEAP *Special Report on Safeguarding the Ozone Layer and Global Climate System*.

Her work has been honoured with a United Nations Environment Programme TEAP Champions Award 2007, a US EPA Best-of the Best Stratospheric Ozone Layer Protection Award 2007, and a US EPA Stratospheric Ozone Layer Protection Award 1997. She has received acknowledgement from the United Nations Environment Programme for her contributions to

the scientific and technical reports that earned the Intergovernmental Panel on Climate Change the 2007 Nobel Peace Prize shared with Al Gore. On the occasions of the 25th (2012) and 30th (2017) Anniversaries of the Montreal Protocol, she was honoured with personal awards from the United Nations Environment Programme for her valuable contributions towards protection of the ozone layer and, also in 2017, shared in a United Nations Environment Programme Technical Leadership Award as a member of the Technology and Economic Assessment Panel. On the occasion of the 25th Anniversary of the Montreal Protocol (2012), she was also one of seven Australians recognised by the Australian Government for their leadership in protecting the world from ozone layer depletion through their contributions to the Montreal Protocol, the global phase-out of ozone-depleting substances, and Australia's successful phase-out of those substances.

Environment Protection Authority (EPA Victoria), 1991-2006

From 2005-2006, Dr Tope was senior team leader for strategic global issues, a role which involved oversight of the team responsible for climate change and ozone layer protection policy development. She managed Victoria's ozone layer protection program from 1999-2006, during which time she oversaw the review of Victoria's statutory policy for ozone layer protection, introducing innovative statutory measures to control emissions of methyl bromide.

Dr Tope managed the review of Victoria's Industrial Waste Strategy, which provided the strategic policy framework for hazardous industrial wastes in Victoria, with a new strategy released in 1998, *Zeroing in on Waste – Pathways to Cleaner Production for Victorian Industries*. She also led the statutory reviews of Prescribed Waste and Transport Regulations (in 1997-1998, and again in 2000). These projects required the management of complex public consultation processes, with competing interests and sensitive negotiations.

Dr Tope's strategic policy expertise was also sought at the national level where she represented EPA Victoria in numerous national policy development processes (including National Ozone Protection Program Review, PCB Management Plan Review, National Profile on Chemicals Management Infrastructure in Australia).

Dr Tope also acted in short-term management roles, including as Acting Manager Office of the Chairman, Acting Manager Waste Management, and Acting Manager Policy Coordination Unit.

Dr Tope has broad experience in policy-relevant scientific, technical and data analysis, including managing the development of inventories of air pollutant emissions for the city of Brisbane (1994-1995), for the city of Auckland, New Zealand (1995-1996), and was advisor to an emissions inventory developed for Hong Kong.

Dr Tope also trained as an emergency responder to hazardous environmental incidents, working alongside Victoria's emergency services.

Advisory Committee Member Centre for Green Chemistry, Monash University, 2002, 2004-2011

As Member of the Advisory Committee, Dr Tope provided strategic advice on sustainability and environmental issues for the Centre for Green Chemistry, which until 2011 had been the academic and research focus for green and sustainable chemistry in Australia.

**Korovian Club Committee, Korowa Anglican Girls' School, Glen Iris, Victoria, 2014-present
President, 2020-present**

Dr Tope is a committee member of the Korovian Club, the alumni association of Korowa Anglican Girls' School, representing more than 8,000 past students. From 2020, as President, she led a strategic review of the Club's roles and functions within the school community, to shape the contemporary purpose of the Club.

Selection of Publications:

Arnold, D.P., Brown, R.F.C., Nitschinsk, L.J., Perlmutter, P., Tope, H.K., *Aust. J. Chem.*, 1994, 47, 975-978.

Brown, R.F.C., Perlmutter, P., Tope, H.K., *Aust. J. Chem.*, 1995, 48, 1447-1452.

Contributor to *Protecting the Ozone Layer: Lessons, Models, and Prospects*, edited by Le Prestre, P.G., Reid, J.D., Morehouse, E.T. Jr., Kluwer Academic Publishers, 1998.

1999 Report of the HFC and PFC Task Force of the Technology and Economic Assessment Panel: The Implications to the Montreal Protocol of the Inclusion of HFCs and PFCs in the Kyoto Protocol, United Nations Environment Programme.

Contributor to *Protecting the Ozone Layer: The United Nations History*, Stephen O Andersen and K Madhava Sarma, published in association with United Nations Environment Programme, Earthscan, 2002

Contributor to *Industry Genius: Inventions and People Protecting the Climate and Fragile Ozone Layer*, Stephen O Andersen and Durwood Zaelke, Greenleaf Publishing Limited, 2003

United Nations Environment Programme, 2018 Assessment Reports of the Medical and Chemicals and the 2014, 2010, 2006, 2002 and 1998 Assessment Reports of the Medical and previously the Aerosols, Sterilants, Miscellaneous Uses and Carbon Tetrachloride Technical Options Committees (<https://ozone.unep.org/science/assessment/teap>).

United Nations Environment Programme, Report of the Technology and Economic Assessment Panel, September 2018, Volume 1, Decision XXIX/4 TEAP Task Force Report on Destruction Technologies for Controlled Substances (Addendum to the May 2018 Supplemental Report – Revision.)

United Nations Environment Programme, Report of the Technology and Economic Assessment Panel, September 2019, Volume 1: Decision XXX/3 Task Force Report on Unexpected Emissions of Trichlorofluoromethane (CFC-11), Final Report.

United Nations Environment Programme, Report of the Technology and Economic Assessment Panel, May 2021, Volume 3: Decision XXXI/3 Task Force Report on Unexpected Emissions of Trichlorofluoromethane (CFC-11).

Review Editor for *SPARC Report on the Mystery of Carbon tetrachloride*, Q. Liang, P.A. Newman, and S. Reimann (Eds.), SPARC Report No. 7, WCRP-13/2016, 2016 (<http://dx.doi.org/10.3929/ethz-a-010690647>).