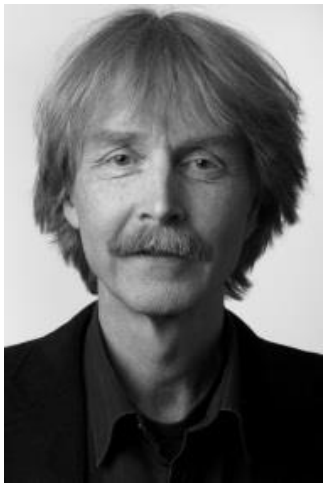
Dr. Jan S. Fuglestvedt



Norway

Candidate for vice-chair, WGI/WGIII

- **Atmospheric chemistry scientist and climate research director**
- **Contributed to WGI, WGIII and SYR (AR5)**
- **Focus on multi-disciplinary research and science-policy interface**

"Working cross-disciplinary makes climate science more policy relevant. Better exchange of knowledge among the working groups will further strengthen the assessment, the relevance of the results and the communications with stakeholders."

Academic qualifications

- Ph.D. in atmospheric chemistry, University of Oslo
- Master of Science in environmental chemistry, University of Oslo

Professional experience

- Current: Research Director at CICERO Center for International Climate and Environmental Research – Oslo, Norway
- Previous: Positions at the Norwegian Environment Agency and Statistics Norway.

IPCC experience

- AR5 WGI: Lead Author (LA), chapter on Anthropogenic and Natural Radiative Forcing. Draft Contributing Author of Summary for Policymakers (SPM). Participated at approval meeting in Stockholm, September 2013.
- AR5 WGIII: Draft Contributing Author for Summary for Policymakers (SPM) and Contributing Author of Technical Summary (TS). Participated at approval meeting in Berlin April 2014.
- AR5 SYR: Member of the Core Writing Team. Participated at approval meeting in Copenhagen September 2014.
- AR5 outreach: A range of outreach activities for both WGI and the Synthesis report incl. special event in Bonn, June 2015, workshop on common metrics in Bonn, April 2012, and several Norwegian outreach activities — often in close collaboration with authors from the other WGs.
- TAR: Contributing Author WGI: Chapter 4 and Chapter 6
- Special report, Aviation and the Global Atmosphere: Contributing Author Chapter 2
- Participated at the following IPCC Expert Meetings on:
    - Climate Change, Food, and Agriculture, Dublin, Ireland, May 2015
    - Scenarios, Laxenburg, Austria, May 2015
    - Science of Alternative Metrics, Oslo, Norway, March 2009
- Other:
    - Active as expert reviewer of several IPCC reports

Other relevant academic work and appointments

- Appointed to the Norwegian Minister of Climate and Environment's Climate Advisory Board.
- CICEROs Principal Investigator in research projects funded by the European Commission
- Heavily involved in the UNFCCC-initiated process on modelling and assessment of contributions to climate change (MATCH) as co-chair of the Scientific Coordination Committee.
- Member of the current Impacts and Science Group (ISG) of the Committee for Aviation Environmental Protection (CAEP) of the International Civil Aviation Organization (ICAO).
- Member of the Expert Panel for the initiative "Global guidance on environmental life cycle impact assessment indicators", which aims to revise and update the frameworks of environmental impact indicators in Life-Cycle Assessment (LCA). Initiated by United Nations Environment Programme (UNEP) and the Society of Environmental Toxicology and Chemistry (SETAC).
- Contributed to WMO/UNEP Ozone Assessment reports as Lead Author, Contributing Author and reviewer.

Research profile

Dr. Jan S. Fuglestvedt is an experienced leader of multi-disciplinary research groups with an extensive network of international collaborators, and his perspectives goes beyond the natural sciences. He has centered his research on atmospheric chemistry and climate interactions, modelling of atmospheric and climatic impacts of different human activities, i.e., impacts by component, source and sector – in particular the climate impact of the transport sectors. This includes studies of methods for, and quantifications of, contributions from sectors, nations and regions to climate change and its potential use in development of climate policies and mitigation strategies. He also works on development and evaluation of emission metrics for comparing different emissions, as a basis for policymaking and international climate agreements. Further, he has actively contributed to research on the effects of short-lived climate forcers and their mitigation potential. His work emphasizes policy-relevant scientific questions, and due to his dual background from both governance and science, he manages to identify such themes and focuses his work around them. Following AR5, he has updated government administration on various issues and topics related to climate change. Selected publications are given in the Appendix.

Through his scientific work, outreach activities and involvement in both WGI and WGIII in AR5, Dr. Fuglestvedt has developed an interest for, and experience with, cross-disciplinary work and sees this as an important direction for policy relevant climate research. He also sees cross-disciplinary and cross-WG interaction as an opportunity with great potential for further strengthening the IPCC. Developing insights across WGs is not only important for the assessment work itself and the relevance of the findings, but also for communication of results in dialogue with stakeholders.

Further information

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Appendix: Selected Publications (out of ca 70 peer-reviewed publications)

ISI h-index: 24. Citations: 1928, Google Scholar h-index: 33

Fuglestvedt, J., and S. Kallbekken: **Climate responsibility: Fair Shares?** *Nature Climate Change* (in press) 2015

Shine, K. P., R. P. Allan, W. J. Collins and J. S. Fuglestvedt: **Metrics for linking emissions of gases and aerosols to global precipitation changes.** *Earth System Dynamics*, 6, 525-540, 2015 doi:10.5194/esd-6-525-2015

Brasseur, G., M. Gupta, B. Anderson, S. Balasubramanian, S. Barrett, D. Duda, G. Fleming, P. Forster, J. Fuglestvedt, A. Gettelman, R. Halthore, S. Jacob, M. Jacobson, A. Khodayari, K. Liou, M. Lund, R. Miake-Lye, P. Minnis, S. Olsen, J. Penner, R. Prinn, U. Schumann, H. Selkirk, A. Sokolov, N. Unger, P. Wolfe, H. Wong, D. Wuebbles, B. Yi, P. Yang, and C. Zhou, 2015: **Impact of Aviation on Climate: FAA's Aviation Climate Change Research Initiative (ACCRI) Phase II.** *Bull. Amer. Meteor. Soc.*, doi:10.1175/BAMS-D-13-00089.1 (in press).

Fuglestvedt, J. S., Dalsoren, S. B., Samset, B. H., Berntsen, T., Myhre, G., Hodnebrog, O., Eide, M. S., and Bergh, T. F.: **Climate Penalty for Shifting Shipping to the Arctic,** *Environmental Science & Technology*, 48, 13273-13279, 10.1021/es502379d, 2014.

Fuglestvedt, J. S., Samset, B. H., and Shine, K. P.: **Counteracting the climate effects of volcanic eruptions using short-lived greenhouse gases,** *Geophysical Research Letters*, 41, 8627-8635, 10.1002/2014gl061886, 2014.

Grewe, V., Froemming, C., Matthes, S., Brinkop, S., Ponater, M., Dietmueller, S., Joeckel, P., Garny, H., Tsati, E., Dahlmann, K., Sovde, O. A., Fuglestvedt, J., Berntsen, T. K., Shine, K. P., Irvine, E. A., Champougny, T., and Hullah, P.: **Aircraft routing with minimal climate impact: the REACT4C climate cost function modelling approach (V1.0)**, *Geoscientific Model Development*, 7, 175-201, 10.5194/gmd-7-175-2014, 2014.

Lund, M. T., Berntsen, T. K., and Fuglestvedt, J. S.: **Climate Impacts of Short-Lived Climate Forcers versus CO_2 from Biodiesel: A Case of the EU on-Road Sector**, *Environmental Science & Technology*, 48, 14445-14454, 10.1021/es505308g, 2014.

Borken-Kleefeld, J., Fuglestvedt, J., and Berntsen, T.: **Mode, Load, And Specific Climate Impact from Passenger Trips**, *Environmental Science & Technology*, 47, 7608-7614, 10.1021/es4003718, 2013.

Collins, W. J., Fry, M. M., Yu, H., Fuglestvedt, J. S., Shindell, D. T., and West, J. J.: **Global and regional temperature-change potentials for near-term climate forcers**, *Atmospheric Chemistry and Physics*, 13, 2471-2485, 10.5194/acp-13-2471-2013, 2013.

Hodnebrog, O., Etminan, M., Fuglestvedt, J. S., Marston, G., Myhre, G., Nielsen, C. J., Shine, K. P., and Wallington, T. J.: **Global warming potentials and radiative efficiencies of halocarbons and related compounds: A comprehensive review**, *Reviews of Geophysics*, 51, 300-378, 10.1002/rog.20013, 2013.

Joos, F., Roth, R., Fuglestvedt, J. S., Peters, G. P., Enting, I. G., von Bloh, W., Brovkin, V., Burke, E. J., Eby, M., Edwards, N. R., Friedrich, T., Froelicher, T. L., Halloran, P. R.,

Holden, P. B., Jones, C., Kleinen, T., Mackenzie, F. T., Matsumoto, K., Meinshausen, M., Plattner, G. K., Reisinger, A., Segschneider, J., Shaffer, G., Steinacher, M., Strassmann, K., Tanaka, K., Timmermann, A., and Weaver, A. J.: **Carbon dioxide and climate impulse response functions for the computation of greenhouse gas metrics: a multi-model analysis**, *Atmospheric Chemistry and Physics*, 13, 2793-2825, 10.5194/acp-13-2793-2013, 2013.

Tanaka, K., Johansson, D. J. A., O'Neill, B. C., and Fuglestvedt, J. S.: **Emission metrics under the 2 degrees C climate stabilization target**, *Climatic Change*, 117, 933-941, 10.1007/s10584-013-0693-8, 2013.

Daniel, J. S., Solomon, S., Sanford, T. J., McFarland, M., Fuglestvedt, J. S., and Friedlingstein, P.: **Limitations of single-basket trading: lessons from the Montreal Protocol for climate policy**, *Climatic Change*, 111, 241-248, 10.1007/s10584-011-0136-3, 2012.

Lund, M. T., Berntsen, T., Fuglestvedt, J. S., Ponater, M., and Shine, K. P.: **How much information is lost by using global-mean climate metrics? an example using the transport sector**, *Climatic Change*, 113, 949-963, 10.1007/s10584-011-0391-3, 2012.

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Odemark, K., Dalsoren, S. B., Samset, B. H., Berntsen, T. K., Fuglestvedt, J. S., and Myhre, G.: **Short-lived climate forcers from current shipping and petroleum activities in the Arctic**, *Atmospheric Chemistry and Physics*, 12, 1979-1993, 10.5194/acp-12-1979-2012, 2012.

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Myhre, G., Fuglestvedt, J. S., Berntsen, T. K., and Lund, M. T.: **Mitigation of short-lived heating components may lead to unwanted long-term consequences**, *Atmospheric Environment*, 45, 6103-6106, 10.1016/j.atmosenv.2011.08.009, 2011.

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changes in ozone and methane caused by the transport sector, *Atmospheric Environment*, 45, 387-394, 10.1016/j.atmosenv.2010.10.001, 2011.

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