

Personal details

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Overview

Dr Brigitte Knopf is a senior researcher at the Potsdam Institute for Climate Impact Research. Her scientific work focuses on low concentration pathways of CO₂ emissions for mitigating climate change. Her main interest is the transformation towards a low carbon economy and the assessment of the economic consequences and technological requirements for mitigation. She coordinated the work-package on "Mitigation at the global level" within the EU project ADAM and is editor of a special issue on the ADAM model comparison. At PIK she is leader of the flagship project LOW-C on the assessment of low stabilization scenarios. Brigitte Knopf holds a PhD in physics and has a background in climate modeling, especially the Indian Monsoon, and in the assessment of uncertainties. In a recent project she is developing long-term scenarios for the energy system in Germany.

Professional Experience

Since 1/2007 Senior Researcher at the Potsdam Institute for Climate Impact Research (PIK) in the Department *Sustainable Solutions* led by Prof. O. Edenhofer.

- 1/2007 – 7/2009: Scientific coordinator of the workpackage „Mitigation at the global level“ of the EU project ADAM (Adaptation and Mitigation Strategies). Responsible for the coordination of the ADAM model comparison of energy-economy models
- Since 1/2008: Leader of the PIK-activity LOW-C for exploring the feasibility of low stabilisation scenarios
- Since 1/2007: Project member of "Climate Change and Justice", funded by Misereor and Munich Re Foundation

- 3/2001 – 12/2006 PhD student at PIK, member of the department for *Integrated Systems Analysis*. Research activities: Modelling the Indian monsoon; Indian monsoon and climate change; uncertainty analysis and uncertainty assessment; Integrated assessment of climate change
- 1/2004 – 12/2006: Project leader of the PIK-project EURECA (*Exploring uncertainty for environmental change related decision making*), a platform for uncertainty
- 11/1999 – 2/2001 Employee in the R&D department of the Phönix SonnenWärme AG, Berlin, Germany. Responsible for the advancement of solar thermal plants

Education and academic degrees

- 11/2006 PhD in Physics (*magna cum laude*), University of Potsdam, Germany. Title: *On Intrinsic Uncertainties in Earth System Modelling*, supervised by Prof. John Schellnhuber
- 7/1999 Diploma in Physics (*Distinction*), University of Marburg, Germany. Title: *Feedback control of a thermosyphonically driven recharge unit of a hot water storage for solar thermal plants* (in german), supervised by Prof. Hans Ackermann
- 10/1993 – 7/1999 Graduate studies in Physics at the Philipps-University of Marburg, Germany. Specialisation: solar energy
- 1984 – 1993 Abitur (German A levels), Albert-Einstein Gymnasium St. Augustin, Germany (grade 1,0), best of the year

Projects

- Since 9/2009 Project member of two projects dealing with the transformation of the German energy system
- Since 1/2007 Project member of “Climate Change and Justice”, funded by Misereor and Munich Re Foundation
- 1/2007 – 7/2009 Scientific coordinator of the workpackage „Mitigation at the global level“ of the EU project ADAM (Adaptation and Mitigation Strategies).

Publications

- Edenhofer, O., **Knopf, B.**, Leimbach, M., Bauer, N. (Eds). The Economics of Low Stabilization, The Energy Journal, Volume 31 (Special Issue 1), 2010
- Edenhofer, O., **Knopf, B.**, Barker, T., Baumstark, L., Belleprat, E., Chateau, B., Criqui, P., Isaac, M., Kitous, A., Kypreos, S., Leimbach, M., Lessmann, K., Magné, B., Scriciu, S., Turton, H., van Vuuren, D.P. (2010). The economics of low stabilization: exploring its implications for mitigation costs and strategies. The Energy Journal, Volume 31 (Special Issue 1). The Economics of Low Stabilization, 2010
- **Knopf, B.**, Edenhofer, O., Flachsland, Chr., Kok, M.T.J., Lotze-Campen, H., Luderer, G., Popp, A. van Vuuren, D.P. (2010). Managing the low-carbon transition – from model results to policies. The Energy Journal, Volume 31 (Special Issue 1). The Economics of Low Stabilization, 2010
- Edenhofer, O., **B. Knopf**, G. Luderer, J. Steckel, T. Bruckner (2010). More heat than light? On the economics of decarbonization. In: Rübhelke, D. (Ed.). Sustainable Energy. London, Routledge Publishers, in press
- Flachsland, C., Luderer, G., Steckel, J., **Knopf, B.**, Edenhofer, O. (2010): International Emissions Trading and the Global Deal. Contribution to the "Research and Forum on Economics of Climate Change – Towards a Low-Carbon Economy in China". Earthscan, in press.
- Edenhofer, O., **B. Knopf**, G. Luderer. Weltklimagipfel in Kopenhagen: Notwendige Eckpfeiler für eine neue Architektur *ifo Schnelldienst*, 19/2009
- **Knopf, B.**, O. Edenhofer, T. Barker, N. Bauer, L. Baumstark, B. Chateau, P. Criqui, A. Held, M. Isaac, M. Jakob, E. Jochem, A. Kitous, S. Kypreos, M. Leimbach, B. Magné, S. Mima, W. Schade, S. Scriciu, H. Turton, D. van Vuuren (2009) The economics of low stabilisation: implications for technological change and policy. In M. Hulme, H. Neufeldt (Eds) Making climate change work for us - ADAM synthesis book, Cambridge University Press
- Lüken, M.; Bauer, N.; **Knopf, B.**; Leimbach, M.; Luderer, G.; Edenhofer, O. (2009): The role of technological flexibility for the distributive impacts of climate change mitigation policy. Paper presented at the International Energy Workshop, May 28, 2009, Venice, Italy
- H. Neufeldt, D. P. van Vuuren, M. Isaac, **B. Knopf**, O. Edenhofer, W. Schade, E. Jochem, F. Berkhout. Reaching the 2°C Target: Technological Requirements, Economic Costs and Policies. *CEPS policy brief, No 188, 15 May 2009*
- Edenhofer O., **B. Knopf**, M. Kalkuhl. CCS: Ein wirksamer Beitrag zum Klimaschutz? *ifo Schnelldienst*, 3/2009
- Ottmar Edenhofer, Gunnar Luderer, Christian Flachsland, Hans-Martin Füssel, Alex Popp, Georg Feulner, **Brigitte Knopf**, Hermann Held. A Global Contract on Climate Change. Policy Paper prepared for the Conference 'A Global Contract based on Climate Justice: The Need for a New Approach Concerning International Relations', 11/2008

- **B. Knopf**, O. Edenhofer, T. Barker, H. Turton, S. Scricciu, M. Leimbach, L. Baumstark, A. Kitous (2008) Report on first assessment of low stabilisation scenarios. *Report on EU Project ADAM, July 2008*
- O. Edenhofer, **B. Knopf**, G. Luderer, B. Hare. Climate policies will stimulate technology development. *Nature* 453, 155 (8 May 2008) | doi:10.1038/453155b
- **Brigitte Knopf**, Kirsten Zickfeld, Michael Flechsig, Vladimir Petoukhov. Sensitivity of the Indian Monsoon to human activities. *Advances in Atmospheric Sciences*, 25 (6), 932-945, 2008
- **Brigitte Knopf**, Michael Flechsig, and Kirsten Zickfeld. Multi parameter uncertainty analysis of a bifurcation point. *Nonlinear Processes in Geophysics*, 13, 531-540 , 2006
- Kirsten Zickfeld, **Brigitte Knopf**, Vladimir Petoukhov and Hans-Joachim Schellnhuber Is the Indian summer monsoon stable against global change? *Geophysical Research Letters*, 32, L15707, doi: 10.1029/2005GL022771, 2005
- Werner von Bloh, Christine Bounama, Klaus Eisenack, **Brigitte Knopf**, and Oliver Walkenhorst. Estimating the biogenic enhancement factor of weathering using an inverse viability method *Ecological Modelling*, 216, 245-251, 2008
- **Brigitte Knopf**, Hermann Held and Hans-Joachim Schellnhuber. Forced versus Coupled Dynamics in Earth System Modelling and Prediction. *Nonlinear Processes in Geophysics*, 12, 311-320, 2005
- **Brigitte Knopf**. On Intrinsic Uncertainties in Earth System Modelling. *PhD thesis, Universität Potsdam, 2006*

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