

Sabine Fuss

Curriculum Vitae



Employment History

Head of working group "Sustainable Resource Management & Global Change"

Mercator Research Institute on Global Commons and Climate Change, Berlin
April 2013 - current

The mission of MCC is to advance research on the opportunities and challenges of sustainable economic growth in a resource and carbon-constrained world, with a particular focus on avoiding dangerous climate change. By conducting topical assessment reports in close cooperation with international partner institutions, the MCC aims to promote deliberative communication and decision-making at the interface between science, policy and society.

Key Achievements:

- Building up a research group and conducting research focused on land use, climate change mitigation, sustainable development and policy instruments leading to more than 25+ peer-reviewed publications.
- Successful in acquiring and managing projects (NORAD, UBA)
- One finished and one pending PhD supervision (expected to finish on time)

Research Scholar at the Ecosystems Services and Management Program

International Institute for Applied Systems Analysis, Laxenburg, Austria
September 2007 – April 2013

Founded in 1972, the International Institute for Applied Systems Analysis (IIASA) conducts policy-oriented research into problems of a global nature that are too large or too complex to be solved by a single country or academic discipline. Responsibilities at the ESM Program included build-up and leadership of a research group focusing on economic modeling and uncertainty analysis, raising funding (national, international, EU) and networking, project management (Principal Investigator of 9 projects by 2013), student supervision (7 PhD students during duration of employment), service on committees and conference/workshop organization.

Key Achievements:

- Building up a research group and conducting research in economic modeling/uncertainty analysis leading to more than 25 peer-reviewed publications.
- Successful supervision of 7 students

- Successful acquisition & management of projects, mostly under the 7th FP

Research Scholar at the Forestry Program

International Institute for Applied Systems Analysis, Laxenburg, Austria

November 2006 – December 2006

See above for institute description. Responsibilities were research-focused. The project was supposed to develop an integrated framework combining the strengths of real options theory and portfolio selection and apply it to investment in the context of energy-generating capacity.

Key Achievements:

- Publication of a working paper and later a peer-reviewed article, see list of selected publications.

Junior Researcher (Assistant in Onderzoek) at the Economics Faculty

University of Maastricht, Maastricht, The Netherlands

September 2003 – September 2007

The section of the Department of Economics at the University of Maastricht worked at focuses on topics in Macroeconomics, Monetary Economics, Labor Economics, Education, International Economics, Innovation and Growth, and Economic Policy. Responsibilities were both in research and teaching, where teaching involved tutoring methods based on small-scale groups and intensive learning.

Key Achievements:

- Research: decision-making under uncertainty with special focus on applications of tools from finance (option pricing, portfolio selection, etc.) to optimal investment planning in the electricity sector.
- Teaching: undergraduate and graduate courses in economics (economic growth, international trade and international relations).

Education

PhD Defense

University of Maastricht, Maastricht, The Netherlands

April 2008

Young Scientist Summer Program

International Institute for Applied Systems Analysis, Laxenburg, Austria

June – August 2006

Ph.D. candidate

Thesis topic: 'Sustainable Energy Development under Uncertainty'

University of Maastricht /UNU-MERIT, The Netherlands

September 2003 – September 2007

M.Sc. in Economics

Thesis topic: 'Technical Change in the Electricity Sector: Optimum Portfolios in a Vintage Framework'

University of Maastricht, The Netherlands

August 2003

Education Abroad Program

University of California, Santa Barbara

Fall/winter 2002

Doctoral Education

- 09/2003-09/2007 - NAKE diploma (Network of General and Quantitative Economics, see www.nake.nl)
- 08/2005 - METEOR (Maastricht Research School of Economics of Technology and Organizations) PhD training with macroeconomics, microeconomics and econometrics courses (special courses in Bayesian modeling, overlapping generations models, economic growth, environmental economics and evolutionary economics).

Abitur: 1999 (grade: "sehr gut")

Computer Skills

- MS Office, Matlab, GAMS, Mathematica, LATEX

Languages

- German (native)
- English (fluent)
- Dutch (good)
- French (good)
- Spanish (good)

Research Interests

- Natural resource management, energy and agricultural economics (bioenergy, land use implications, water-food-GHG nexus, ESS valuation and tradeoffs)
- Decision-making under uncertainty: portfolio selection, real options theory, stochastic optimization, robustness.
- Integrated assessment with focus on climate change mitigation (focus on the role of negative emission and interaction with other policy goals)
- Reconciling top-down and bottom-up assessments
- Mechanisms for carbon management, climate-compatible development, policy instruments (focus on emissions trading)
- Sustainable development (focus so far on infrastructure investments and food security)

Additional positions

- Guest research scholar at the [Ecosystems Services and Management Program](#) at the [International Institute for Applied Systems Analysis](#).
- Scientific Steering Committee member of the [Global Carbon Project](#)
- Guest Editor for [Special Feature on negative emissions](#) at *Environmental Research Letters*
- Selected expert for [IPCC Special Report on Impacts of Global Warming of 1.5°C above Pre-industrial Levels and related Global Greenhouse Gas Emission Pathways](#).

Current Student Supervision

- Since 2013 Johanna Wehkamp (TU Berlin, MCC)
 - PhD project: Institutional and Policy Drivers of Deforestation and New Approaches to REDD+
 - Expected date of completion: end of 2016
- Since 2014 Godefroy Grosjean (TU Berlin, Co-supervision MCC-PIK)
 - PhD project: Reform Options for the European Emissions Trading System
 - Completed: July 2016
- Since January 2016 Anne Gläser (University of Copenhagen & Hohenheim)

- Master project:
- Expected date of completion: September 2016
- Since July 2016 Chollo Song (Korea University)
 - DAAD Fellowship project: Mapping of ecosystems services in South Korea
 - Expected date of completion: September 2016

Additional teaching

- Guest lecture at Hertie School of Governance, Berlin (Seminar „Energy Sustainability & Climate Change“ // Executive Master of Public Administration)

Reviewer

- Expert for 7th Framework Program/H2020 Reviews and ERC grants (proposals and projects)
- Reviewer for journals such as ERL, Climatic Change, Nature Climate Change, Nature Energy, Energy Economics, Journal of Environmental Economics and Management, Renewable and Sustainable Energy Reviews, Energy Policy, Applied Energy, Climate Policy, Journal of Environmental Management
- Reviewer for national projects and evaluations (e.g. UKERC, EPA Ireland, Research Council Norway)
- Review Editor Austrian Panel On Climate Change (APCC) 2014
- [Reviewer for the Convention on Biological Diversity \(CBD\)](#)

Projects

- Energy observation for monitoring and assessment of the environmental impact of energy use, Acronym: EnerGEO (funding: FP7, Grant number: 226364), <http://www.energeo-project.eu/> [finalized]
- Operational Global Carbon Observing System, Acronym: GEOCARBON (funding: FP7, Grant number: 283080), <http://www.geocarbon.net/> [finalized]
- Impacts Quantification of global changes, Acronym: GLOBAL-IQ (funding: FP7, Grant number: 266992), <http://www.global-iq.eu/> [finalized]
- Quantifying projected impacts under 2°C warming, Acronym: IMPACT2C (funding: FP7, Grant number: 282746), <http://www.hzg.de/mw/impact2c/> [not involved anymore]
- Low climate IMPact scenarios and the Implications of required Tight emission control Strategies, Acronym: LIMITS (funding: FP7, Grant number: 282846), <http://www.feem-project.net/limits/> [not involved anymore]
- PARadigm SHifts Modelling and INnovative Approaches, Acronym: PASHMINA (funding: FP7, Grant number: 244766), <http://www.pashmina-project.eu/> [finalized]
- Development and application of a standardized methodology for the Prospective Sustainability assessment of Technologies, Acronym: PROSUITE (funding: FP7, Grant number: 227078), <http://www.prosuite.org/> [finalized]
- Investment in renewable electricity under climate policy uncertainty, Acronym: PURELEC (funding: Norwegian) [finalized]
- The economics of climate change adaptation, Acronym: ECONADAPT (funding: FP7), <http://www.econadapt.eu> [not involved anymore]
- Options Market and Risk-Reduction Tools for REDD+ (funding: NORAD; partners: Environmental Defense Fund, IIASA, London School of Economics) [finalized]
- Globale Treibhausgasemissionspfade bis 2050 (funding: Umweltbundesamt UFOPLAN FKZ 3714 41 1670, partners: PIK) [ongoing]
- Delivering Incentives to End Deforestation: Global Ambition, Private/Public Finance and Zero-Deforestation Supply Chains (funding: NORAD partners:

Environmental Defense Fund, IIASA, London School of Economics)
[ongoing]

- RESTORE+: Addressing Landscape Restoration on Degraded Land in Indonesia and Brazil (funding: International Climate Initiative 2016, Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB); lead partner: IIASA; others: International Centre for Research in Agroforestry; SELPER Brazil; UNEP-WCMC; World Resources Institute Indonesia; WWF Indonesia; LANDMAPP; Environmental Defense Fund; London School of Economics, Ministry of National Development Planning/National Development Planning Agency; Ministry of Energy and Mineral Resources; Ministry of Environment and Forestry, Agência Brasileira de Cooperação, Ministerio de Relaciones Exteriores; Ministério do Meio Ambiente, Departamento de Conservação de Biodiversidade. [start date: February 2017]

Publications

Peer-reviewed journal articles

Peters, G.P., Andrew, R.M., Canadell, J.G., Fuss, S., Jackson, R.B., Korsbakken, J.I., Le Quéré, C., Nakicenovic, N. (2017): Key indicators to track current progress and future ambition of the Paris Agreement. *Nature Climate Change* 7:118–122.

Minx, J., Lamb, W.F., Callaghan, M.W., Bornmann, L., Fuss, S. (2017). Fast growing research on negative emissions. *Environmental Research Letters* at press: <https://doi.org/10.1088/1748-9326/aa5ee5>.

Fuss, S., Jones, C., Kraxner, F., Peters, G., Smith, P., Tavoni, M., Van Vuuren, D., Canadell, J.G., Jackson, R., Milne, J., Moreira, J., Nakicenovic, N., Sharifi, A., Yamagata, Y. (2016). Research priorities for negative emissions. *Environmental Research Letters* 11(11).

Grosjean, G., Fuss, S., Koch, N., Acworth, W., De Cara, S. (2016). Options to overcome the barriers to pricing European agricultural emissions. *Climate Policy* <http://dx.doi.org/10.1080/14693062.2016.1258630>.

Szolgayová, J., Fuss, S., Kaminski, T., Scholze, M., Gusti, M., Heimann, M., Tavoni, M. (2016). The benefits of investing into improved carbon flux monitoring. *Cogent Economics & Finance* 4: 1239672
<http://dx.doi.org/10.1080/23322039.2016.1239672>

Tietjen, O., Pahle, M., Fuss, S. (2016). Investment risks in power generation: A comparison of fossil fuel and renewable energy dominated markets. *Energy Economics* 58: 174–185.

Schueler, V., Fuss, S., Steckel, J.C., Weddige, U., Beringer, T. (2016). Productivity ranges of sustainable biomass potentials from non-agricultural land. *Environmental Research Letters* 11:074026.

Fuss, S., Chen, C., Jakob, M., Marxen, A., Rao, N.D., Edenhofer, O. (2016). Could resource rents finance universal access to infrastructure? A first exploration of needs and rents. *Environment and Development Economics* 21(6): 691-712.

Koch, N., Grosjean, G., Fuss, S., Edenhofer, O. (2016). Politics matters: Regulatory events as catalysts for price formation under cap-and-trade. *Journal of Environmental Economics and Management* 8: 121–139.

Jakob, M., Chen, C., Fuss, S., Marxen, A., Rao, N.D., Edenhofer, O. (2016). Carbon Pricing Revenues Could Close Infrastructure Access Gaps. *World Development* 84: 254–265.

Fuss, S. (2016). Climate economics: Substantial risk for financial assets. *Nature Climate Change*, DOI: 10.1038/nclimate2989.

Smith, P., Davis, S., Creutzig, F., Fuss, S. et al. (2016). Biophysical and economic limits to negative CO2 emissions. *Nature Climate Change* doi:10.1038/nclimate2870.

Moreira, J.R.; Romeiro, V.; Fuss, S.; Kraxner, F.; Pacca, S.A. (2016). BECCS

- potential in Brazil: Achieving negative emissions in ethanol and electricity production based on sugar cane bagasse and other residues. *Applied Energy* 179: 55–63.
- Jakob, M., Chen, C., Fuss, S., Marxen, A., Edenhofer, O. (2015). Development incentives for fossil fuel subsidy reform. *Nature Climate Change* 5: 709–712.
- Wehkamp, J., Aquino, A., Fuss, S., Reed, E.W. (2015). Analyzing the perception of deforestation drivers by African policy makers in the perspective of possible REDD+ policy responses. *Forest Policy and Economics* 59: 7–18.
- Fuss, S., Havlík, P., Szolgayová, J., Schmid, E., Reuter, W.-H., Khabarov, N., Obersteiner, M., Ermoliev, Y., Ermolieva, T., Kraxner, F. (2015). Global food security & adaptation under crop yield volatility. *Technological Forecasting and Social Change* 98: 223–233.
- Jäger, J., Nakicenovic, N., Fuss, S., KC, S. Rovenskaya E., Wagner, F. (2015). Special Issue based on IIASA's 40th Anniversary Conference Guest Editorial. *Technological Forecasting and Social Change* 98: 211-212.
- Edenhofer, O., Jakob, M., Creutzig, F., Flachsland, C., Fuss, S., Kowarsch, M., Lessmann, K., Mattauch, L., Siegmeier, J., Steckel, J.C. (2015). Closing the emissions price gap. *Global Environmental Change* 31: 132–143.
- Fuss, S., Canadell, J.G., Peters, G.P., Tavoni, M., Andrew, R.M., Ciais, P., Jackson, R.B., Jones, C.D., Kraxner, F., Nakicenovic, N., Le Quéré, C., Raupach, M.R., Sharifi, A., Smith, P., Yamagata, Y. (2014). Betting on Negative Emissions. *Nature Climate Change* 850–853 (2014) doi:10.1038/nclimate2392.
- Leclère, D., Havlík, P., Fuss, S., Schmid, E., Mosnier, A., Walsh, B., Valin, H., Hererro, M., Khabarov, N., Obersteiner, M. (2014). Climate change induced transformations of agricultural systems: insights from a global model. *Environmental Research Letters* 12/2014; 9(12). DOI:10.1088/1748-9326/9/12/124018
- Gschwind, B., Lefevre, M., Blanc, I., Ranchin, T., Wyrwa, A., Drebszok, K., Cofala, J., Fuss, S. (2014). Including the temporal change in PM2.5 concentration in the assessment of human health impact: Illustration with renewable energy scenarios to 2050. *Environmental Impact Assessment Review* 52: 62–68.
- Koch, N.T., Fuss, S., Grosjean, G., Edenhofer, O. (2014). Causes of the EU ETS price drop: Recession, CDM, renewable policies or a bit of everything?—New evidence. *Energy Policy* 73: 676–685.
- Szolgayová, J., Golub, A., Fuss, S. (2014). Innovation & risk-averse firms: options on carbon allowances as a hedging tool. *Energy Policy* 70: 227-235.
- Havlík, P., Valin, H., Herrero, M., Obersteiner, M., Schmid, E., Rufino, M.C., Mosnier, A., Thornton, P.K., Bottcher, H., Conant, R.T., Frank, S., Fritz, S., Fuss, S., Kraxner, F., Notenbaert, A. (2014). Climate change mitigation through livestock system transitions. *PNAS* 111(10):3709-3714.
- Kraxner, F., Leduc, S., Fuss, S., Aoki, K., Kindermann, G., Yamagata, Y. (2014). Energy resilient solutions for Japan—a BECCS case study. *Energy Procedia* 61: 2791-2796.
- Andersson, A.M., Elverhøi, M., Fleten, S.E., Fuss, S., Szolgayová, J., Troland, O.C. (2014). Upgrading hydropower plants with storage: timing and capacity choice. *Energy Systems* 5(2): 233-252.
- Kraxner, F., Aoki, K., Leduc, S., Kindermann, G., Fuss, S., Yang, J., Yamagata, Y., Tak, K., Obersteiner, M. (2014). BECCS in South Korea - Analyzing the negative emissions potential of bioenergy as a mitigation tool, *Renewable Energy* 61:102-108.
- Swart, R., Fuss, S., Obersteiner, M., Ruti, P., Teichmann, C., Vautard, R. (2013). Beyond vulnerability assessment. *Nature Climate Change* 3:942–943.
- Sanders, M., Fuss, S., Engelen, P.J. (2013). Mobilizing private funds for carbon capture and storage: An exploratory field study in the Netherlands.

- Kraxner, F., Nordström, E., Havlík, P., Gusti, M., Mosnier, A., Frank, S., Valin, H., Fritz, S., Fuss, S., Kindermann, G., McCallum, I., Khabarov, N., Böttcher, H., See, L., Aoki, K., Schmid, E., Máthe, L., Obersteiner, M. (2013). Global bioenergy scenarios - Future forest development, land-use implications, and trade-offs. *Biomass and Bioenergy* 57: 86–96.
- Svadlenak-Gomez, K., Walzer, C., Badura, M., Kraxner, F., Fuss, S. (2013). Valuing Alpine ecosystems: the recharge.green project will help decision-makers to reconcile renewable energy production and biodiversity conservation in the Alps; *Journal on Protected Mountain Areas Research* 05/2013; DOI:10.1553/ecomont-5-1s59.
- Fuss, S., Reuter, W.H., Szolgayová, J., Obersteiner, M. (2013). Optimal mitigation strategies with negative emission technologies and carbon sinks under uncertainty, *Climatic Change* 118(1): 73-87.
- Heumesser, C., Fuss, S., Szolgayová, J., Strauss, F., Schmid, E. (2012). Investment in irrigation systems under precipitation uncertainty, *Water Resources Management*, 26(11):3113-3137.
- Seebach, L., McCallum, I., Fritz, S., Kindermann, G., Leduc, S., Böttcher, H., Fuss, S. (2012). Choice of forest map has implications for policy analysis: A case study on the EU biofuel target, *Environmental Science & Policy* 22:13-24.
- Lemoine, D.M., Fuss, S., Szolgayová, J., Obersteiner, M., Kammen, D.M. (2012). The influence of negative emission technologies and technology policies on the optimal climate mitigation portfolio, *Climatic Change*, 113(2):141-162.
- Reuter, W.H., Szolgayová, J., Fuss, S., Obersteiner, M. (2012). Renewable energy investment: Policy and market impacts, *Applied Energy* 97:249-254.
- Reuter, W.H., Fuss, S., Szolgayová, J., Obersteiner, M. (2012). Investment in wind power and pumped storage in a real options model, *Renewable and Sustainable Energy Reviews* 16(4):2242-2248.
- Szolgayová J, Fuss S, Khabarov N, Obersteiner M (2012). Robust energy portfolios under climate policy and socioeconomic uncertainty, *Environmental Modeling and Assessment* 17(1-2):39-49.
- Fuss, S., Szolgayová, J., Khabarov, N., Obersteiner, M. (2012). Renewables and climate change mitigation: Irreversible energy investment under uncertainty and portfolio effects *Energy Policy*, 40:59-68.
- Strauss, F., Heumesser, C., Fuss, S., Szolgayová, J., Schmid, E. (2011). Optimal irrigation management strategies under weather uncertainty and risk, *Journal of the Austrian Society of Agricultural Economics* 20(2):45-54.
- Szolgayová, J., Fuss, S., Khabarov, N., Obersteiner, M. (2011). A dynamic CVaR-portfolio approach using real options: An application to energy investments, *European Transactions on Electrical Power* 21(6):1825-1841.
- Fuss, S., Szolgayová, J., Golub, A., Obersteiner, M. (2011). Options on low-cost abatement and investment in the energy sector: New perspectives on REDD, *Environment and Development Economics* 16(4):507-525.
- Fuss, S., Szolgayová, J. (2010). Fuel price and technological uncertainty in a real options model for electricity planning, *Applied Energy* 87(9):2938-2944.
- Zhou, W., Zhu, B., Fuss, S., Szolgayová, J., Obersteiner, M., Fei, W. (2010). Uncertainty modeling of CCS investment strategy in China's power sector, *Applied Energy* 87(7):2392-2400.
- McCallum, I., Fritz, S., Khabarov, N., Fuss, S., Szolgayová, J., Rydzak, F., Havlík, P., Kraxner, F., Obersteiner, M., Aoki, K. (2010). Identifying and quantifying the benefits Of GEOSS, *Earthzine*, posted on 12 July 2010 in Articles, Earth Observation, Economy, GEOSS/ICEO News.
- Fuss, S., Johansson, D.J.A., Szolgayová, J., Obersteiner, M. (2009). Impact of climate policy uncertainty on the adoption of electricity generating technologies, *Energy Policy* 37(2):733-743.

- Fuss, S., Szolgayová, J., Obersteiner, M. (2008). A real options approach to satellite mission planning, *Space Policy* 24(4):199-207.
- Szolgayová, J., Fuss, S., Obersteiner, M. (2008). Assessing the effects of CO2 price caps on electricity investments - A real options analysis, *Energy Policy* 36(10):3974-3981.
- Fortin, I., Fuss, S., Hlousková, J., Khabarov, N., Obersteiner, M., Szolgayová, J. (2008). An integrated CVaR and real options approach to investments in the energy sector, *The Journal of Energy Markets* 1(2):61-85.
- Fuss, S., Szolgayová, J., Obersteiner, M., Gusti, M. (2008). Investment under market and climate policy uncertainty, *Applied Energy* 85(8):708-721.

Book chapters

- Kraxner, F.; Leduc, S.; Serrano Leon, H.; Fuss, S.; Patrizio, P.; Yowargana, P. (2016). Expanding renewable energy within the Alpine ecological network. In: Plassmann et al. (Eds.), [Alpine Nature 2030 - Creating \[ecological\] connectivity for generations to come](#) (book). Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB).
- Kraxner, F., Fuss, S., Krey, V., Best, D., Leduc, S., Kindermann, G., Yamagata, Y., Schepaschenko, D., Shvidenko, A., Aoki, K., Yan, J. The role of bioenergy with carbon capture and storage (BECCS) for climate policy. V. 3. P. 1466-1483. In: Yan J (Ed) 2015, *The Handbook of Clean Energy Systems*. John Wiley & Sons, Ltd.
- Schepaschenko, D., Kraxner, F., See, L., Fuss, S., McCallum, I., Fritz, S., Perger, C., Shvidenko, A., Kindermann, G., Frank, S., Tum, M., Schmid, E., Balkovic, J., Günther, K. Global biomass information: from data generation to application. Vol. 1. Pp. 11-33. In: Yan J (Ed) 2015, *The Handbook of Clean Energy Systems*. John Wiley & Sons, Ltd.
- See, L., Kraxner, F., Fuss, S., Perger, C., Schill, C., Aoki, K., Leduc, S., McCallum, I., Forsell, N., Fritz, S. The potential of crowdsourcing for the renewable energy sector. V.1. P. 721-735. In: Yan J (Ed) 2015, *The Handbook of Clean Energy Systems*. John Wiley & Sons, Ltd.
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- Fritz, S., Fuss, S., Havlík, P., Szolgayová, J., McCallum, I., Obersteiner, M., See, L. (2012). The value of determining global land cover for assessing climate change mitigation options, In: *The Value of Information: Methodological Frontiers and New Applications in Environment and Health*, R Laxminarayan, MK Macauley (eds) Springer, Dordrecht, Netherlands pp.193-230.
- Kuik, O. and Fuss, S. (2011). Renewables in the energy market: A financial-technological analysis considering risk and policy options, In: *Financial Aspects in Energy: A European Perspective*, A Dorsman, W Westerman, MB Karan, O Arslan (eds) Springer, Heidelberg, Germany pp.33-50.
- Fuss, S. (2010). Forestry carbon sequestration: Alternative perspective, In: *Smart Solutions to Climate Change: Comparing Costs and Benefits*, B. Lomborg (ed.) Cambridge University Press, Cambridge, UK pp.133-141.
- Ortiz-Moctezuma, M.B., Pivovarchuk, D., Szolgayová, J., Fuss, S. (2010). Development of transportation infrastructure in the context of economic growth, In: *Dynamic Systems, Economic Growth, and the Environment*, J. Crespo Cuaresma, T. Palokangas, A. Tarasyev (eds) Springer-Verlag, Heidelberg, Germany pp. 259-289.
- Fuss, S., Khabarov, N., Szolgayová, J., Obersteiner, M. (2009). The effects of climate policy on the energy technology mix: An integrated CVaR and Real Options Approach. In: *Modeling Environment - Improving Technological Innovations under Uncertainty*, A. Golub and A. Markandya (eds) Routledge,

London, UK.

van Zon, A. and Fuss, S. (2008). Risk, embodied technical change and irreversible investment decisions in UK electricity production: An optimum technology portfolio approach, In: *Analytical Methods for Energy Diversity and Security*, M. Bazilian, F. Roques (eds) Elsevier BV, Amsterdam, Netherlands pp.275-302.

Reports and Working Papers

- Godefroy, G., Fuss, S., Koch, N., Acworth, W., De Cara, S. (2016). Agriculture: sleeping beauty of EU climate policy? Overcoming barriers to implementation, DOI: 10.13140/RG.2.1.1482.9841.
- Koch, N., Reuter, W.H., Fuss, S., Grosjean, G. (2016). Permits vs. Offsets Under Investment Uncertainty (January 5, 2016). Available at SSRN: <http://ssrn.com/abstract=2711321> or <http://dx.doi.org/10.2139/ssrn.2711321>
- Jakob, M., Chen, C., Fuss, S., Marxen, A., Rao, N., Edenhofer, O. (2015). Using Carbon Pricing Revenues to Finance Infrastructure Access. *FEEM Nota di Lavoro* #94. Available at: <http://www.feem.it/userfiles/attach/201511241149154NDL2015-094.pdf>
- Fuss, S., Chen, C., Jakob, M., Marxen, A., Edenhofer, O. (2015). Could Resource Rents Finance Universal Access to Infrastructure? A first exploration of needs and rents, *FEEM Nota di Lavoro* #83. Available at: <http://www.feem.it/userfiles/attach/201511231216534NDL2015-093.pdf>
- Koch, N., Grosjean, G., Fuss, S., Edenhofer, O. (2015). Politics Matters: Regulatory Events as Catalysts for Price Formation under Cap-and-Trade (May 6, 2015). Available at SSRN: <http://ssrn.com/abstract=2603115> or <http://dx.doi.org/10.2139/ssrn.2603115>
- Laing, T., Palmer, C., Taschini, L., Wehkamp, J., Fuss, S., Reuter, W.H. (2015). Understanding the Demand for REDD+ Credits. *Grantham Research Institute on Climate Change and the Environment Working Paper Series*, WP 193, London, UK.
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- Elverhøi, M., Fleten, S.E., Fuss, S., Heggedal, A.M., Szolgayová, J., Troland, O.C. (2009). Evaluation of hydropower upgrade projects—a real options approach. *MPRA paper* 23005.
- Fuss, S. (2009). [A Perspective Paper on Forestry Carbon Sequestration as a Response to Climate Change](#), Copenhagen Consensus Center, Frederiksberg, Denmark.
- Golub, A., Fuss, S., Szolgayová, J., Obersteiner, M. (2009). Effects of Low-cost Offsets on Energy Investment - New Perspectives on REDD. *FEEM Nota di Lavoro* #17. Available at: <http://www.feem.it/userfiles/attach/Publication/NDL2009/NDL2009-017.pdf>
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Selected Presentations & Discussion Panels (last 4 years)

14 November 2016 Speaker at Side Event "The Global Carbon Budget 2016 and its implication for meeting global warming targets", COP22 07-18 Nov 2016, Marrakech, Morocco.

03 November 2016 Input on effectiveness and costs of CDR, *Climate Engineering Modeling Workshop* 03-04 Nov 2016, FEEM, Milan, Italy.

23 June 2016 The role of BECCS in climate change mitigation: potentials and limits, *UKCCSRC BECCS Specialist Meeting* 23-24 June 2016, Imperial College, London.

- 10 May 2016** Bio-CCUS: global perspective, *First IEA Bioenergy Task 41 workshop on Bio-CCUS*, 10 May 2016, Oslo, Norway [remotely]
- 10 May 2016** Negative Emissionen in ambitionierten Stabilisierungspfaden. *SWP-IASS Event "Negative Emissionen" zur Erreichung globaler Klimaziele?* 10 May 2016, Stiftung Wissenschaft und Politik, Berlin.
- 05 May 2016** Negative Emissions, *Workshop on Peak Emissions and Deep Decarbonization; The Global Carbon Project and Stanford University*, 4-5 May 2016, Stanford, US. [remotely]
- 28 April 2016** Herausforderungen an die 1.5°C Forschung aus Sicht der negativen Emissionen, *Jahrestagung des Deutschen Klimakonsortiums*, Berlin, Germany.
- 26 April 2016** Introduction to negative emissions and geoengineering, *CAN Europe workshop on 1.5°C and 2050 pathways*, Brussels, Belgium. [remotely]
- 27 January 2016** From Risk to Uncertainty, Official Side Event "Pathways to Sustainability: Dealing with Uncertainty" to the 2nd German Future Earth Summit, 27-29 January 2016, Berlin, Germany.
- 15 January 2016** Ursachen der weltweiten Kohlerenaissance, ihre Auswirkungen auf Klima und menschliche Gesundheit, *Vortragsreihe der Globalisation and Health Initiative*, RWTH Aachen, Germany.
- 14 December 2015** Negative emissions in a multi-objective world: harnessing CDR potentials under sustainability concerns, [David Bradford Seminars in Science, Technology and Environmental Policy](#), Princeton University, USA.
- 28 November 2015** The EU Emissions Trading System: ex post analysis & reform options, *1st Turkish-German Frontiers of Social Science Symposium*, 26-29 November 2015, Istanbul, Turkey.
- 06 November 2015** Market designs for fostering dynamic efficiency of the EU ETS, *Energy Policy Exchange Forum*, November 4-7th 2015 Tsinghua University, Beijing, China.
- 10 September 2015** No North without South, no South without North: the urgent need for an integrated view on global forests, side event of the *XIV World Forestry Congress*, Durban, 7-11 September 2015 [co-organized with IIASA, WWF-International, SB-RAS, ICRAF-ASB, NRCAN, CAF, USDA-FS, KU, BK21+ELEC, INPE]
- 02 September 2015** The Need for Negative Emissions, [Workshop on negative emissions: Bridging societal and mitigation needs](#), September 2-5, 2015, Hokkaido University, Japan.
- 09 July 2015** Keynote at the "Our Common Future under Climate Change" Conference, Paris. France.
- 01 July 2015** Discussion Panel on "Die Ökologie-Enzyklika des Papstes – Schöpfungsverantwortung, integrale Entwicklung und Armutsbekämpfung", Katholischen Akademie, Berlin, Germany.
- 17 June 2015** "Betting on negative emissions", Keynote at [TCCS-8](#), Trondheim.
- 06 June 2015** Building a Finance Bridge for Private Investment in Forest Carbon, SBSTA 42, Bonn, Germany.
- 25 May 2015** "Negative emissions through bioenergy: a geographically explicit BECCS study on Russia," at the 17th IBFRA Conference, Rovaniemi, Finland.
- 21 January 2015** "A multiple objective approach to negative emissions", Keynote

at the 3rd International Workshop on Future Earth in Asia, Research Institute for Humanity and Nature (RIHN), Kyoto, Japan.

19 October 2014 “The role of BECCS and negative emissions in global climate change mitigation scenarios” at World Bioenergy Symposium 2014 and ICBTS 2014 in Changsha, China.

11 October 2014 “REDD+BECCS: Synergies between Bioenergy-based Climate Change Mitigation and REDD+” at IUFRO World Congress 2014, Salt Lake City, USA.

07 October 2014 “Spatial modeling of ecological-economic tradeoffs: renewable energy production & biodiversity conservation in the Alps”, at IUFRO World Congress 2014, Salt Lake City, USA.

29 April 2014 [Keynote at IIASA Alumni Day](#), Laxenburg, Austria.

20 March 2014 “Spatial modeling of ecological-economic tradeoffs: renewable energy production & biodiversity conservation in the Alps”, *2nd GLP Open Science Meeting*, Humboldt University, Berlin, Germany.

06-07 December 2013 “BECCS as a climate change management tool: opportunities, uncertainty and caveats” at *GCP-IIASA-MCC-NIES [workshop on negative emissions](#)*, Tokyo, Japan.

19 June 2013 “A geographically explicit analysis of BECCS potential in Indonesia” at the International Energy Workshop, International Energy Agency, Paris, France, 19-20 June 2013.

13 June 2013 “Negative Emissions Potential for BECCS” at the IIASA-IEA-USP Workshop on Bio-energy & CCS (BECCS): Options for Brazil, University of São Paulo, Brazil, 13-14 June 2013.

28 May 2013 “Forests in the mitigation portfolio of a changing world” at the Global Forest Carbon Working Group’s Workshop “Future of Global Forests”, IIASA, Laxenburg, Austria, 27-29 May 2013.

18 March 2013 “Bioenergy Combined with Carbon Capture and Storage – Joining Top-Down and Bottom-Up Research to Address Policy Questions” at *NIES-IGES-IIASA Workshop*, National Institute for Environmental Studies, Tsukuba, Japan.

13-14 March 2013 “Urban Growth Strategies Under Uncertainty” at *Global Carbon Project Workshop on Linking Climate Compatible Urban Development Resilience*, hosted by Asian Institute of Technology, Bangkok, Thailand.

04 December 2012 “[REDD+BECCS: Challenges, Opportunities, Co-Benefits](#)” at *Side Event by IIASA, IEA and Indonesia’s REDD+ Task Force, COP18*, Doha, Qatar.

24 October 2012 “[Food Security in an Uncertain World](#)” Keynote at *IIASA’s 40th Anniversary Conference*, International Institute for Applied Systems Analysis, Vienna Hofburg, Austria.

21-24 September 2012 “BECCS Status & Gaps” at *Bioenergy, CCS and BECCS: Options for Indonesia Workshop*, Jakarta, Indonesia.

18-21 June 2012 “Bioenergy in mitigation portfolios: the role of uncertainty” at *International Energy Workshop*, University of Cape Town, South Africa.

25-29 March 2012 “Design of Bioenergy Mandates under Food Security Constraints” at *Planet under Pressure*, London, UK.

23-24 February 2012 “Agricultural Price Volatility under Climate Change

The Impact of Multiple Objectives on Commodity Prices” at *123rd EAAE Seminar*, Dublin, Ireland.

24-27 January 2012 “Introduction to the Value of Information & Portfolio Applications to Mitigation Strategies” at *Final EUROGEOSS Conference 2012*, at CSCI, Madrid, Spain.