Curriculum Vitae

Jessica Strefler

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Personal Details

Name:	Jessica Strefler
Nationality:	German
Address:	Potsdam Institute for Climate Impact Research (PIK) Telegrafenberg A56 14473 Potsdam Germany
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Professional Experience

Since 02/2014 **Postdoctoral researcher on carbon dioxide removal technologies**
Potsdam Institute for Climate Impact Research, research domain III Sustainable Solutions, working group Energy Resources and Technologies
- development of integrated assessment models
- carbon dioxide removal technologies

08/2009 - 02/2014 **Research associate on non-CO2 emissions and global energy transformation pathways**
Potsdam Institute for Climate Impact Research, research domain III Sustainable Solutions, working group Global Energy Systems
- development of integrated assessment models
- non-CO2 emissions in global energy systems
- cost-efficient climate protection strategies

09/2007 – 06/2009 **Research associate on stochastic processes**
Humboldt University Berlin
- collective stochastic dynamics
- active Brownian particles

Education

15.07.2014	**Ph.D. in physics (summa cum laude)** ***Technical University Berlin and Potsdam Institute for Climate Impact Research*** Supervisor: Prof. Dr. Ottmar Edenhofer Title of dissertation: "Challenges for low stabilization of climate change: The complementarity of non-CO_2 greenhouse gas and aerosol abatement to CO_2 emission reductions"
11.09.2007	**Diploma in physics** ***Humboldt University Berlin*** Titel of diploma thesis: „Swarming theory in three dimensions based on Active Brownian Particles" Final grade: very good
10/2004 - 09/2007	Studies of physics at Humboldt University Berlin
10/2003 - 09/2004	Studies of physics at University Hamburg
10/2001 - 09/2003	Studies of physics at University Heidelberg

Honors

2015	**Prize for outstanding dissertation** *Friends of the Potsdam Institute for Climate Impact Research e.V.*
2015	**Outstanding poster award** *At the 2015 Integrated Assessment Modeling Consortium Annual Meeting*

Language skills

- German (native)
- English (fluent)

Software and Programming skills

Programming languages:	GAMS, C
Mathematical software:	Matlab, R
Others:	MS Office, LaTex, Windows, Linux

Professional Experience – Research Projects

Since 09/2018	**DIPOL – Deep transformation scenarios for Informing the climate POLicy discourse** *BMBF* Research, project co-lead
Since 09/2017	**START – Strategic Scenario Analysis** *BMBF* Research, work package co-lead
Since 05/2016	**CDR-MIA – Carbon Dioxide Removal - Model Intercomparison Analysis** *Deutsche Forschungsgemeinschaft* Research
Since 05/2016	**CEMICS2 - Contextualizing Climate Engineering and Mitigation: Complement, Substitute or Illusion?** *Deutsche Forschungsgemeinschaft* Research
11/2014 – 05/2016	**CEMICS - Contextualizing Climate Engineering and Mitigation: Complement, Substitute or Illusion?** *Deutsche Forschungsgemeinschaft* Research
09/2011 – 12/2015	**Shared Socio-economic Pathways (SSPs)** Research
10/2011 – 09/2014	**LIMITS - Low climate IMpact scenarios and the Implications of required Tight emission control Strategies** *European Commission. 7th framework program* Research
02/2011 – 01/2014	**AMPERE - Assessment of Climate Change Mitigation Pathways and Evaluation of the Robustness of Mitigation Cost Estimates** *European Commission. 7th framework program* Research
07/2010 – 10/2013	**EMF 27: Global Model Comparison Exercise** Research
01/2010 – 12/2012	**RoSE - Roadmaps towards Sustainable Energy Futures** *Mercator Foundation* Research

Publications (peer reviewed)

2018

Strefler, J., Bauer, N., Kriegler, E., Popp, A., Giannousakis, A., Edenhofer, O. (2018) "Between Scylla and Charybdis: Delayed mitigation narrows the passage between large-scale CDR and high costs". Enivronmental Research Letters 13, 4. http://dx.doi.org/10.1088/1748-9326/aab2ba
Media: Sydney Morning Herald – Western Australia Today – Brisbane Times – Deutsche Welle

Strefler, J., Amann, T., Bauer, N., Kriegler, E., Hartmann, J. (2018) "Potential and costs of carbon dioxide removal by enhanced weathering of rocks". Enivronmental Research Letters 13, 3. http://dx.doi.org/10.1088/1748-9326/aaa9c4

2017

Riahi, K., van Vuuren, D.P., Kriegler, E., Edmonds, J., O'Neill, B.C., Fujimori, S., Bauer, N., Calvin, K., Dellink, R., Fricko, O., Lutz, W., Popp, A., Cuaresma, J.C., Samir, KC., Leimbach, M., Jiang, L.W., Kram, T., Rao, S., Emmerling, J., Ebi, K., Hasegawa, T., Havlik, P., Humpenoeder, F., da Silva, LA., Smith, S., Stehfest, E., Bosetti, V., Eom, J., Gernaat, D., Masui, T., Rogelj, J., **Strefler, J**., Drouet, L., Krey, V., Luderer, G., Harmsen, M., Takahashi, K., Baumstark, L., Doelman, JC., Kainuma, M., Klimont, Z., Marangoni, G., Lotze-Campen, H., Obersteiner, M., Tabeau, A., Tavoni, M. (2017) "The Shared Socioeconomic Pathways and their energy, land use, and greenhouse gas emissions implications: An overview". Global Environmental Change 42, 153-168.
http://dx.doi.org/10.1016/j.gloenvcha.2016.05.009

Kriegler, E., Bauer, N., Popp, A., Humpenoder, F., Leimbach, M., **Strefler, J.,** Baumstark, L., Bodirsky, B.L., Hilaire, J., Klein, D., Mouratiadou, I., Weindl, I., Bertram, C., Dietrich, J.P., Luderer, G., Pehl, M., Pietzcker, R., Piontek, F., Lotze-Campen, H., Biewald, A., Bonsch, M., Giannousakis, A., Kreidenweis, U., Muller, C., Rolinski, S., Schultes, A., Schwanitz, J., Stevanovic, M., Calvin, K., Emmerling, J., Fujimori, S., Edenhofer, O. (2017) "Fossil-fueled development (SSP5): An energy and resource intensive scenario for the 21st century". Global Environmental Change 42, 297-315.
http://dx.doi.org/10.1016/j.gloenvcha.2016.05.015

Rao, S., Klimont, Z., Smith, S.J., Van Dingenen, R., Dentener, F., Bouwman, L., Riahi, K., Amann, M., Bodirsky, B.L., van Vuuren, D.P., Reis, L.A., Calvin, K., Drouet, L., Fricko, O., Fujimori, S., Gernaat, D., Havlik, P., Harmsen, M., Hasegawa, T., Heyes, C., Hilaire, J., Luderer, G., Masui, T., Stehfest, E., **Strefler, J.**, van der Sluis, S., Tavoni, M. (2017) "Future air pollution in the Shared Socio-economic Pathways". Global Environmental Change 42, 346-358.
http://dx.doi.org/10.1016/j.gloenvcha.2016.05.012

2016

Harmsen, M. J. H. M., van den Berg, M., Krey, V., Luderer, G., Marcucci, A. , **Strefler, J.,** van Vuuren, D.P. (2016) How climate metrics affect global mitigation strategies and costs: a multi-model study. Climatic Change 136 (2), 203-216

Rao, S., Klimont, Z., Leitao, J., Riahi, K., van Dingenen, R., Reis, L. A., Calvin, K., Dentener, F., Drouet, L., Fujimori, S., Harmsen, M., Luderer, G., Heyes, C., **Strefler, J.,** Tavoni, M., van Vuuren, D.P. (2016) A multi-model assessment of the co-benefits of climate mitigation for global air quality. Environmental Research Letters 11 (12).

2015

Lucas, P.L., Nielsen, J, Calvin, K., McCollum, D.L., Marangonid, G., **Strefler, J.,** van der Zwaan, B.C.C., van Vuuren, D.P. (2015) Future energy system challenges for Africa: Insights from Integrated Assessment Models. Energy Policy 86, 705-717

Gernaat, D., Vuuren, D.P.V., Berg, M. van den, Calvin, K., Lucas, P., Luderer, G., Otto, S.A.C., Rao, S., **Strefler, J.** (2015) Understanding the contribution of non-CO2 gases in deep mitigation scenarios. Global Environmental Change, accepted for publication

2014

Strefler, J., Luderer, G., Kriegler, E., Meinshausen, M. (2014) Can air pollutant controls change global warming? Environmental Science & Policy 41, 33–43. doi:10.1016/j.envsci.2014.04.009

Strefler, J., Luderer, G., Aboumahboub, T., Kriegler, E. (2014) Economic impacts of alternative greenhouse gas emission metrics: a model-based assessment. Climatic Change. doi:10.1007/s10584-014-1188-y

Klein, D., Luderer, G., Kriegler, E., **Strefler, J.,** Bauer, N., Leimbach, M., Popp, A., Dietrich, J.P., Humpenöder, F., Lotze-Campen, H., Edenhofer, O. (2014) The value of bioenergy in low stabilization scenarios: an assessment using REMIND-MAgPIE. Climatic Change 123, 705–718. doi:10.1007/s10584-013-0940-z

2013

Rose, S.K., Richels, R., Smith, S., Riahi, K., **Strefler, J.,** Vuuren, D.P. van (2013) Non-Kyoto radiative forcing in long-run greenhouse gas emissions and climate change scenarios. Climatic Change 1–15. doi:10.1007/s10584-013-0955-5

Steckel, J.C., Brecha, R.J., Jakob, M., **Strefler, J.,** Luderer, G. (2013) Development without energy? Assessing future scenarios of energy consumption in developing countries. Ecological Economics 90, 53–67. doi:10.1016/j.ecolecon.2013.02.006

Selected Talks

1. Carbon dioxide removal in 1.5°C scenarios. Research Days Potsdam Institute for Climate Impact Research, Potsdam. 21 Feb 2018
2. How delayed climate action narrows the decision space between large-scale CDR and high mitigation costs. Tenth Annual Meeting of the IAMC, Recife. 5 December 2017
3. How reluctant climate action narrows the decision space between large-scale CDR and high mitigation costs. Climate Engineering Conference 2017, Berlin. 10 October 2017
4. Rein in die Atmosphäre, raus aus der Atmosphäre? Lange Nacht der Wissenschaften, Potsdam. 24 June 2017
5. The role of CDR in 1.5°C pathways: CDR requirements, portfolios, and constraints. 1.5°C Workshop, Kiel. 24 November 2016
6. Risks and opportunities of carbon dioxide removal technologies. HITEC day geoengineering, FZ Jülich. 08 June 2016
7. The carbon story of mankind and deep decarbonisation opportunities. Key Note at 11th CO2 GeoNet Open Forum, Venice. 09 May 2016

8. Risks and opportunities of carbon dioxide removal technologies. Research Days Potsdam Institute for Climate Impact Research, Potsdam. 26 Jan 2016
9. The role of carbon dioxide removal technologies for achieving long-term climate policy objectives: an analysis of the larger portfolio of CDR options. Eighth Annual Meeting of the IAMC, Potsdam. 17 Nov 2015
10. Integrated Assessment of mitigation and carbon dioxide removal technologies. Climate engineering research symposium, Berlin. 10 Jul 2015
11. Integrated assessment of enhanced weathering. International Energy Workshop, Abu Dhabi. 4 June 2015
12. Methane emissions from natural gas production. RWE background discussion, Potsdam. 6 May 2015
13. The role of aerosol emissions and control in achieving ambitious climate protection targets. International Energy Workshop, Cape Town. 20 Jun 2012.

Reviews

Journals:

Nature, Environmental Research Letters, Climatic Change

Reports:

Negative Emission Technologies: What Role in Meeting Paris Agreement Targets? (2018) EASAC

Special Report on Energy & Air Quality. (2016) World Energy Outlook

Integrated Assessment of Black Carbon and Tropospheric Ozone. (2011) UNEP/WMO

Assessment Reports

As Contributing Author:

Chapter 4: Economic Growth, Human Development, and Welfare. (2018) International Panel on Social Progress.

Biomasse im Spannungsfeld zwischen Energie- und Klimapolitik. Strategien für eine nachhaltige Bioenergienutzung (2019). Stellungnahme der Acatech.