

INDIVIDUAL REPORT to the Land Court of Queensland on “Climate Change – Emissions”

Adani Mining Pty Ltd (Adani) v Land Services of Coast and Country Inc & Ors

EXPERT DETAILS

A/Prof Malte Meinshausen

My business address is 700 Swanston Street, Level 1, Lab 14 Carlton Connect, Department of Earth Sciences, The University of Melbourne, Parkville 3010, VIC.

Summary of experience:

I am an ARC Future Fellow and Associate Professor at the University of Melbourne in the areas of climate change projections, uncertainties, carbon cycle and international climate change policy, and Director of the Australian-German College of Climate & Energy Transitions at the University of Melbourne. I hold the following qualifications:

- Diploma in Environmental Sciences (Dipl. Env. Sc.) from the Swiss Federal Institute of Technology, ETH Zurich, Switzerland.
- M.Sc. of Environmental Change & Management (Distinction) from the University of Oxford, UK.
- PhD in Climate Change & Policy from the Swiss Federal Institute of Technology, ETH Zurich, Switzerland.

A copy of my CV is attached as Appendix A.

INSTRUCTIONS

I have been instructed to prepare an individual expert report on greenhouse gas and climate change issues for the Land Court of Queensland hearing of objections to the grant of Adani’s mining lease (ML) and environmental authority (EA) applications for the mine component (Mine) of the Carmichael Coal Mine and Rail Project (Project).

The scope of this report is the current scientific understanding of climate change, quantification of emissions from the proposed Carmichael Mine (the Mine) and the contribution of those emissions to climate change. This report references the joint report that has been prepared and submitted earlier by Malte Meinshausen and Chris Taylor.

INDIVIDUAL REPORT

1. In our joint report, dated 22nd December 2014, we agreed that the overall scope 1, 2 and 3 emissions from the mine project would result in 4.73 gigatonnes of carbon dioxide (Gt CO₂) emissions over the course of the project lifetime, based on the estimate provided by the project proponent of a total of 2.3 Gt of product coal (see paragraph 17 and Table 1). In our joint report, we indicate the cumulative amount of total global CO₂ emissions that is consistent with a likely chance of staying below the international target of limiting warming to below 2°C (see paragraphs 15 and 16). Thus, the mine’s emissions would equate to around 0.53% to 0.56% of the global carbon budget (see paragraph 18).
2. This individual report is in response to new research that came out after the submission of our joint report. This new research provides regional specifics to the global carbon reserves we mentioned in the joint report (paragraph 16). Furthermore, a factual clarification is provided in regard to how the annual average emissions provided in Table 1 of the joint report were calculated.
3. This new research published after our joint report was completed uses a global energy model for providing geographical detail on the carbon resources of coal, oil and gas that are left unburned, if the international community’s target of staying below 2°C were to be achieved. Under such a 2°C scenario, this research by McGlade and Ekins in the international journal Nature (8th January 2014) indicates that a large proportion of coal stays in the ground in the OECD Pacific region, including Australia. Specifically, 83 Gt of coal, or 93% of current resources is unburnable and must be left in the ground in the OECD Pacific region, which includes Australia, even under the assumption of an uptake of the carbon capture and storage (CCS) technology. Without CCS, 85 Gt or 95% of the reserves are left in the ground to have a 50%:50% chance of staying below 2°C warming. A higher likelihood of staying below 2°C warming (such as a ‘likely’ >66% chance) would increase the fraction of carbon that has to remain in the ground.
4. In other words, this research indicates that between 2011 and 2050 only 4.5 to 6.2 Gt can be produced from OECD Pacific coal mines, which would imply that the Carmichael coal mine project with 2.3 Gt of product coal would consume 37% to 51% of this allowable coal production, if the mine’s carbon were produced and emitted until 2050. Thus, given the already granted licenses for coal mining in Australia and on the basis of this more specific research into the unburnable coal in the OECD Pacific region, it can be concluded that the coal of the Carmichael coal mine project is probably to be characterised as ‘unburnable’ – unless the 2°C warming limit is put into question or the mining leases elsewhere in Australia with a similar amount of product coal production are ceased.
5. There is one additional issue in our joint report, which I wish to clarify. Our Table 1 refers to Annual average emissions of 77,395,516 tonnes of CO₂-e scope 3 emissions.

I should note that this value has been derived simply by dividing the overall cumulative amount of emissions of 4,653,730,979 tonnes of CO₂-e by 60 years. Given that some parts of the mining proposal refer to higher coal production numbers per year (60 Mt product coal), the annual emissions over the initial project lifetime (30 years) could be substantially higher - e.g. almost twice as high – compared to the average 60yr value in our table (up to 121 MtCO₂ per year).

6. In summary, limitations on coal production, not only coal burning projects, are confirmed by new research to be an essential tool for a successful implementation of the 2°C warming limit.

Reference

McGlade, C. & Ekins, P. The geographical distribution of fossil fuels unused when limiting global warming to 2°C. *Nature* **517**, 187-190 (2015).

EXPERT'S STATEMENT – ADDITIONAL FACTS

I am not aware of any further readily ascertainable additional facts that would assist me to reach a more reliable conclusion.

EXPERT STATEMENT

I confirm the following:

- (a) the factual matters stated in the report are, as far as I know, true;
- (b) I have made all enquiries considered appropriate;
- (c) the opinions stated in the report are genuinely held by myself;
- (d) the report contains reference to all matters I consider significant;
- (e) I understand the duty of an expert to the court and have complied with that duty;
- (f) I have read and understood the Land Court Rules 2000 on expert evidence; and
- (g) I have not received or accepted instructions to adopt or reject a particular opinion in relation to an issue in dispute in the proceeding.



Digitally signed by Malte Meinshausen
DN: cn=Malte Meinshausen, o, ou,
email=malte.meinshausen@gmail.com
, c=AU
Date: 2015.02.05 22:37:36 +11'00'

Malte Meinshausen, Melbourne, 6th February 2015

Appendix A

CV A/Prof. Malte Meinshausen

Current affiliation:

School of Earth Sciences
University of Melbourne
Swanston / Elgin Street
McCoy Building, Room 310
3010 Melbourne, Victoria, Australia

& Potsdam Institute for Climate Impact Research
Telegraphenberg A26
14412 Potsdam, Germany

Director Australian-German College of Climate
& Energy Transitions, www.climate-energy-college.org, Monash Road,
Alice Hoy Building, Room 201
The University of Melbourne
3010 Melbourne, Victoria, Australia

Private address:
91 Westbourne Grove
Northcote, 3070
Victoria, Australia

malte.meinshausen@unimelb.edu.au
Tel: +61 (0) 466988037

Education & Research

- Since Feb 2014: Associate Professor and ARC Future Fellow at the University of Melbourne, School of Earth Sciences.
- Since 2013: Director of the Australian-German College of Climate & Energy Transitions (www.climate-energy-college.org) at the University of Melbourne, launched in October 2013 under the auspices of the then current Australian Ambassador to Germany with 13 PhD students.
- Since 2011: Senior Researcher at the Potsdam Institute of Climate Impact Research, Potsdam.
- 2008-2011: Team Leader of the PRIMAP group at Potsdam Institute for Climate Impact Research.
- Since May 2006: Researcher at Potsdam Institute for Climate Impact Research, Potsdam, Germany.
- Sep 2005 – Apr 2006: Post-Doc, Guest researcher at the National Centre for Atmospheric Research, NCAR, Boulder, USA, Collaboration with Tom Wigley and Reto Knutti.
- 2002 – 2003: Doctoral courses in macroeconomics, microeconomics and econometrics at the Study Centre Gerzensee, Swiss National Bank
- Oct 2002 – Aug 2005: PhD study in the area "International climate policy and economics", Department of Environmental Sciences, ETH, Supervisor: Prof. Dieter Imboden.

- 1995 – 1999 & 2000 – 2001: Diploma course "Environmental Sciences" at the ETH Zurich. Scholarship by Studientiftung des dt. Volkes. Diploma thesis (*with distinction*) on "Long-term stratospheric chlorine loading prediction" at the Institute for Atmospheric and Climate Science, ETH Zurich, Supervisor: Prof. Thomas Peter
- 1999 – 2000: MSc Environmental Change & Management, University of Oxford, UK. MSc Thesis on "The climatic effect of temporary carbon storage under the Clean Development mechanism of the Kyoto Protocol" (*MSc with distinction*)

Professional experience

- 2008 Co-Founder of non-profit organization Climate Analytics gGmbH (www.climateanalytics.org), assisting Small Island States and Least Developed Countries with scientific and technical advice during international climate change negotiations under the UNFCCC.
- Since 2005: Scientific & Technical Advisor for German Ministry of Environment on international climate policy. Member of the German delegations to IPCC meetings and UNFCCC negotiations.
- Since 2000 Freelance consultancy for government bodies and environmental NGOs on climate policy issues

Publications

Articles in peer-reviewed journals

Friedlingstein, P., **M. Meinshausen**, V. K. Arora, C. D. Jones, A. Anav, S. K. Liddicoat and R. Knutti (2014). "Uncertainties in CMIP5 Climate Projections due to Carbon Cycle Feedbacks." *Journal of Climate* 27(2): 511-526.

Rogelj, J., D. L. McCollum, A. Reisinger, **M. Meinshausen** and K. Riahi (2014). "Probabilistic cost estimates for climate change mitigation (vol 493, pg 79, 2013)." *Nature* 506(7488): 396-396.

Rogelj, J., **M. Meinshausen**, J. Sedlacek and R. Knutti (2014). "Implications of potentially lower climate sensitivity on climate projections and policy." *Environmental Research Letters* 9(3).

Smith, S. J., T. M. L. Wigley, **M. Meinshausen** and J. Rogelj (2014). "Questions of bias in climate models." *Nature Climate Change* 4(9): 741-742.

Strefler, J., G. Luderer, E. Kriegler and **M. Meinshausen** (2014). "Can air pollutant controls change global warming?" *Environmental Science & Policy* 41: 33-43.

Heinke, J., S. Ostberg, S. Schaphoff, K. Frieler, C. Mueller, D. Gerten, **M. Meinshausen** and W. Lucht (2013). "A new climate dataset for systematic assessments of climate change impacts as a function of global warming." *Geoscientific Model Development* 6(5): 1689-1703.

Khodayari, A., D. J. Wuebbles, S. C. Olsen, J. S. Fuglestedt, T. Berntsen, M. T. Lund, I. Waitz, P. Wolfe, P. M. Forster, **M. Meinshausen**, D. S. Lee and L. L. Lim (2013). "Intercomparison of the capabilities of simplified climate models to project the effects of aviation CO₂ on climate." *Atmospheric Environment* 75: 321-328.

Luderer, G., R. C. Pietzcker, C. Bertram, E. Kriegler, **M. Meinshausen** and O. Edenhofer (2013). "Economic mitigation challenges: how further delay closes the door for achieving climate targets." *Environmental Research Letters* 8(3).

Hof, A. F., C. W. Hope, J. Lowe, M. D. Mastrandrea, **M. Meinshausen** and D. P. van Vuuren (2012). "The benefits of climate change mitigation in integrated assessment models: the role of the carbon cycle and climate component." *Climatic Change* 113(3-4): 897-917. doi: 10.1007/s10584-011-0363-7

Gregory, J. M., D. Bi, M. A. Collier, M. R. Dix, A. C. Hirst, A. Hu, M. Huber, R. Knutti, S. J. Marsland, **M. Meinshausen**, H. A. Rashid, L. D. Rotstayn, A. Schurer and J. A. Church (2013). "Climate models without preindustrial volcanic forcing underestimate historical ocean thermal expansion." *Geophysical Research Letters* 40(8): 1600-1604.

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., Frölicher, 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. (2013), "Carbon dioxide and climate impulse response functions for the computation of greenhouse gas metrics: a multi-model analysis", *Atmos. Chem. Phys.*, 13, 2793-2825, doi:10.5194/acp-13-2793-2013.

Rogelj, J., D. L. McCollum, A. Reisinger, **M. Meinshausen** and K. Riahi (2013). "Probabilistic cost estimates for climate change mitigation." *Nature* 493(7430): 79-83. (HTML)

Frieler, K., **M. Meinshausen**, A. Golly, M. Mengel, K. van der Merwe, S. Donner, O. Hoegh-Guldberg (2012) "Limiting global warming to 2°C is unlikely to save most coral reefs", *Nature Climate Change*, doi:10.1038/nclimate1674 (HTML)

den Elzen, M., **M. Meinshausen**, A. Hof (2012) "The impact of surplus units from the first Kyoto period on achieving the reduction pledges of the Cancun Agreements" *Climatic Change Letters*, doi: 10.1007/s10584-012-0530-5 (HTML)

Frieler, K., **M. Meinshausen**, M. Mengel, N. Braun, W. Hare (2012). "A Scaling Approach to Probabilistic Assessment of Regional Climate Change." *Journal of Climate* 25(9): 3117-3144.

van Vliet, J., M. van den Berg, M. Schaeffer, D. P. van Vuuren, M. den Elzen, A. F. Hof, A.M. Beltran, **M. Meinshausen**, (2012) "Copenhagen Accord Pledges imply higher costs for staying below 2°C warming" *Climatic Change Letters*, doi:10.1007/s10584-012-0458-9, online first ([HTML](#))

Rogelj, J., **M. Meinshausen** and R. Knutti (2012). "Global warming under old and new scenarios using IPCC climate sensitivity range estimates." *Nature Clim. Change* advance online publication. doi:10.1038/nclimate1385 ([HTML](#))

Schneider von Deimling, T., **M. Meinshausen**, A. Levermann, V. Huber, K. Frieler, D. M. Lawrence and V. Brovkin (2012). "Estimating the near-surface permafrost-carbon feedback on global warming." *Biogeosciences* 9(2): 649-665. ([HTML](#))

Nabel, J. E. M. S., J. Rogelj, C. M. Chen, K. Markmann, D. J. H. Gutzmann and **M. Meinshausen** (2011). "Decision support for international climate policy – The PRIMAP emission module."

Environmental Modelling & Software 26(12): 1419-1433.([HTML](#))

Rogelj, J., W. Hare, J. Lowe, D.P. van Vuuren, K. Riahi, B. Matthews, T. Hanaoka, K. Jiang, **M. Meinshausen** (2011) "Emission pathways consistent with a 2°C global temperature limit", Nature Climate Change, doi:10.1038/nclimate1258 ([HTML](#))

Schleussner, C.-F., K. Frieler, **M. Meinshausen**, J. Yin, and A. Levermann, (2011) "Emulating Atlantic overturning strength for low emission scenarios: consequences for sea-level rise along the North American east coast", Earth Syst. Dynam., 2, 191-200, doi:10.5194/esd-2-191-2011 ([HTML](#))([PDF](#))

Meinshausen, M., S. J. Smith, K. V. Calvin, J. S. Daniel, M. Kainuma, J.-F. Lamarque, K. Matsumoto, S. A. Montzka, S. C. B. Raper, K. Riahi, A. M. Thomson, G. J. M. Velders and D. van Vuuren (2011). "The RCP Greenhouse Gas Concentrations and their Extension from 1765 to 2300." Climatic Change (Special Issue). DOI:10.1007/s10584-011-0156-z ([PDF](#)) ([HTML](#))

van Vuuren, D. P., J. Edmonds, M. L. T. Kainuma, K. Riahi, A. Thomson, T. Matsui, G. Hurtt, J.-F. Lamarque, **M. Meinshausen**, S. Smith, C. Grainer, S. Rose, K. A. Hibbard, N. Nakicenovic, V. Krey and T. Kram (2011). "Representative Concentration Pathways: an overview." Climatic Change (Special Issue). DOI:10.1007/s10584-011-0148-z ([PDF](#)) ([HTML](#))

Jean-François Lamarque, G. Page Kyle, **M. Meinshausen**, Keywan Riahi, Steven J. Smith, Detlef P. van Vuuren, Andrew J. Conley, Francis Vitt (2011) "Global and regional evolution of short-lived radiatively-active gases and aerosols in the Representative Concentration Pathways." Climatic Change (Special Issue). DOI: 10.1007/s10584-011-0155-0 ([HTML](#))

Jones, C., J. Hughes, N. Bellouin, S. Hardimann, G. Jones, J. Knight, S. Liddicoat, F.M. O'Connor, B. Andres, C. Bell, K-O. Boo, A. Bozzo, P. Cadule, K. Corbin, M. Doutriaux-Boucher, P. Friedlingstein, J. Gornall, L. Gray, P. Halloran, G Hurrt, W. Ingram, J.-F. Lamarque, R. Law, **M. Meinshausen**, S. Osprey, E. Palin, L. P. Chini, T. Raddatz, M. Sanderson, A. Sellar, P. Valdes, N. Wood, S. Woodward, M. Yoshioka (submitted) "The HadGEM2-ES Implementation of CMIP5 Centennial Simulations", Geosci. Model Dev., 4, 543-570, doi:10.5194/gmd-4-543-2011, 2011. ([HTML](#))([PDF](#))

Reisinger, A., **M. Meinshausen**, M. Manning (2011) "Future changes in Global Warming Potentials under the Representative Concentration Pathways". Environmental Research Letters, 6 024020 doi: [10.1088/1748-9326/6/2/024020](https://doi.org/10.1088/1748-9326/6/2/024020) ([HTML](#))

Rogelj, J., W. Hare, C. Chen and **M. Meinshausen** (2011). "Discrepancies in historical emissions point to a wider 2020 gap between 2°C benchmarks and aggregated national mitigation pledges." Environmental Research Letters, 6 (April-June 2011) 024002, doi:10.1088/1748-9326/6/2/024002 ([HTML](#))

Schewe. J., A. Levermann, **M. Meinshausen** (2011) "Climate change under a scenario near 1.5°C of global warming: Monsoon intensification, ocean warming and steric sea level rise", Earth System Dynamics, 2, 25-35. doi:10.5194/esd-2-25-2011 ([HTML](#))([PDF](#))

van Vuuren, D. P., J. Lowe, E. Stehfest, L. Gohar, A. F. Hof, C. Hope, R. Warren, **M. Meinshausen** and G. K. Plattner (2011). "How well do integrated assessment models simulate climate change?" Climatic Change 104(2): 255-285. doi: 10.1007/s10584-009-9764-2 ([Link](#))

Frieler, K., **M. Meinshausen**, T. Schneider von Deimling, T. Andrews, and P. Forster (2011), Changes in global-mean precipitation in response to warming, greenhouse gas forcing and black carbon, *Geophys. Res. Lett.*, 38, L04702, doi:10.1029/2010GL045953.

Meinshausen, M., Raper, S. C. B., and Wigley, T. M. L. (2011): Emulating coupled atmosphere-ocean and carbon cycle models with a simpler model, MAGICC6 – Part 1: Model description and calibration, *Atmos. Chem. Phys.*, 11, 1417-1456, doi:10.5194/acp-11-1417-2011 ([HTML](#))([PDF](#))

Meinshausen, M., Wigley, T. M. L., and Raper, S. C. B. (2011): Emulating atmosphere-ocean and carbon cycle models with a simpler model, MAGICC6 – Part 2: Applications, *Atmos. Chem. Phys.*, 11, 1457-1471, doi:10.5194/acp-11-1457-2011 ([HTML](#)) ([PDF](#))

Rogelj, J., C. Chen, J. Nabel, K. Macey, W. Hare, M. Schaeffer, K. Markmann, N. Höhne, K. Krogh Andersen and **M. Meinshausen** (2010). "Analysis of the Copenhagen Accord pledges and its global climatic impact - a snapshot of dissonant ambitions." *Environmental Research Letters* 5(3): 034013. ([HTML](#)) ([PDF](#))

Reisinger, A., **M. Meinshausen**, M. Manning and G. Bodeker (2010). "Uncertainties of global warming metrics: CO₂ and CH₄." *Geophysical Research Letters* 37: L14707, doi:10.1029/2010GL043803

Manning, M. R., J. Edmonds, S. Emori, A. Grubler, K. Hibbard, F. Joos, M. Kainuma, R. F. Keeling, T. Kram, A. C. Manning, **M. Meinshausen**, R. Moss, N. Nakicenovic, K. Riahi, S. K. Rose, S. Smith, R. Swart and D. P. van Vuuren (2010) "Misrepresentation of the IPCC CO₂ emission scenarios." *Nature Geosci* 3(6): 376.

Rogelj, J., J. Nabel, C. Chen, W. Hare, K. Markmann, **M. Meinshausen**, M. Schaeffer, K. Macey and N. Hohne (2010). "Copenhagen Accord pledges are paltry." *Nature* 464(7292): 1126.

Meinshausen, M., N. Meinshausen, W. Hare, S. C. B. Raper, K. Frieler, R. Knutti, D. J. Frame and M. R. Allen (2009). "Greenhouse-gas emission targets for limiting global warming to 2C." *Nature* 458(7242): 1158. ([PDF](#)) ([HTML](#)) ([Supplementary](#)) ([Background information](#))

Allen, M. R., D. J. Frame, C. Huntingford, C. D. Jones, J. A. Lowe, **M. Meinshausen** and N. Meinshausen (2009). "Warming caused by cumulative carbon emissions towards the trillionth tonne." *Nature* 458(7242): 1163. ([PDF](#))

Schaeffer, M., T. Kram, **M. Meinshausen**, D. P. van Vuuren and W. L. Hare (2008). "Near-linear cost increase to reduce climate-change risk." *Proceedings of the National Academy of Sciences* 105(52): 20621-20626.

Van Vuuren, D. P., **M. Meinshausen**, G. K. Plattner, F. Joos, K. M. Strassmann, S. J. Smith, T. M. L. Wigley, S. C. B. Raper, K. Riahi, F. de la Chesnaye, M. G. J. den Elzen, J. Fujino, K. Jiang, N. Nakicenovic, S. Paltsev and J. M. Reilly (2008). "Temperature increase of 21st century mitigation scenarios." *Proceedings of the National Academy of Sciences* 105(40): 15258-15262.

Knutti, R., M. R. Allen, P. Friedlingstein, J. M. Gregory, G. C. Hegerl, G. A. Meehl, **M. Meinshausen**, J. M. Murphy, G.-K. Plattner, S. C. B. Raper, T. F. Stocker, P. A. Stott, H.

Teng and T. M. L. Wigley (2008). "A review of uncertainties in global temperature projections over the twenty-first century." *Journal of Climate* 21: 2651-2663.

den Elzen, M., M. **Meinshausen** and D. van Vuuren (2007). "Multi-gas emission envelopes to meet greenhouse gas concentration targets: Costs versus certainty of limiting temperature increase." *Global Environmental Change-Human and Policy Dimensions* 17(2): 260-280.

den Elzen, M. G. J. and M. **Meinshausen** (2006). "Meeting the EU 2°C climate target: global and regional emission implications." *Climate Policy* 6: 545-564.

Hare, B. and M. **Meinshausen** (2006). "How much warming are we committed to and how much can be avoided?" *Climatic Change* 75(1): 111-149.

Meinshausen, M., B. Hare, T. M. L. Wigley, D. van Vuuren, M. G. J. den Elzen and R. Swart (2006). "Multi-gas emission pathways to meet climate targets." *Climatic Change* 75(1): 151-194.

Other

Allen, M., D. Frame, K. Frieler, W. Hare, C. Huntingford, C. Jones, R. Knutti, J. Lowe, **M. Meinshausen**, N. Meinshausen and S. Raper (2009). "The exit strategy." *Nature Reports Climate Change* (0905): 56. ([PDF](#)) ([HTML](#))

Rogelj, J., B. Hare, J. Nabel, K. Macey, M. Schaeffer, K. Markmann and M. **Meinshausen** (2009). "Halfway to Copenhagen, no way to 2C." *Nature Reports Climate Change* (0907): 81. ([PDF](#))

Contributing Author to IPCC Fourth Assessment Report

*Working Group I, Chapter 10 & 8,
Working Group II, Chapter 2:*

Contributing Author to IPCC Fifth Assessment Report

Working Group I, Chapter 1, 12 & Annex II (Climate System Scenario Tables)

Book chapters

Meinshausen, M. (2006). What does a 2°C target mean for greenhouse gas concentrations? - A brief analysis based on multi-gas emission pathways and several climate sensitivity uncertainty estimates. *Avoiding Dangerous Climate Change*. J. S. Schellhuber, W. Cramer, N. Nakicenovic, T. M. L. Wigley and G. Yohe. Cambridge, Cambridge University Press.

den Elzen, M. G. J. and **M. Meinshausen** (2006). Multi-Gas Emission Pathways for Meeting the EU 2°C Climate Target. *Avoiding Dangerous Climate Change*. J. S. Schellhuber, W. Cramer, N. Nakicenovic, T. M. L. Wigley and G. Yohe. Cambridge, Cambridge University Press.

Meinshausen, M. (2008). Eine kurze Anmerkung zu 2°C Trajektorien. Wege aus der Klimafalle. H. Ott and Heinrich-Böll-Stiftung. München, Oekom: 19-30.

Meinshausen, M. (2004). Emissions, Targets and Projections for Annex I Parties. The International Climate Change Regime: A Guide to Rules, Institutions and Procedures. F. Yamin and J. Depledge. Cambridge, Cambridge University Press.

Diploma Thesis

Meinshausen, M. (2001). Long term chlorine loading prediction: SiMCeL. Institute for Atmosphere and Climate, IACETH. Zurich, ETH Zurich: 91.<http://e-collection.ethbib.ethz.ch/show?type=dipl&nr=22>