

Transitions to New Technologies Project

Publications list

Books

- Bernstein, L., Bosch, P., Canziani, O., Chen, Zh., Christ R., Riahi, K. (Contributor), *et al.*: 2008, *Climate Change 2007: Synthesis Report*, Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), [CoreWriting Team, Pachauri, R.K and Reisinger, A. (eds)], IPCC Publications, Geneva, Switzerland, pp. 104. (ISBN 92-9169-122-4)
- Nakicenovic, N. (Contributor): 2008, *World Energy Outlook 2008*, Organization for Economic Co-operation and Development (OECD) and International Energy Agency (IEA) Publications, Paris, France, pp. 578.
- Nakicenovic, N. (Contributor): 2008, *Towards a Post-Carbon Society: European Research on Economic Incentives and Social Behaviour*, Conference Proceedings, 24 October 2007, Brussels. European Commission Publications, Office for Official Publications of the European Communities, Luxembourg, pp. 54. (ISBN 978-92-79-07622-0)
- Bach, B., Biermayer, P., Fricko, O., Haas, R., Nakicenovic, N. *et al.*: 2007, *Strategy Process Energy 2050: Intermediate Phase of Research Programme*, Federal Ministry for Transport, Innovation and Technology (BMVIT), Vienna, Austria, pp. 84. [In German]
- Nakicenovic, N. (Contributor): 2007, *World Energy Outlook 2007: China and India Insights*, Organization for Economic Co-operation and Development (OECD) and International Energy Agency (IEA) Publications, Paris, France, pp. 600. (ISBN 978-92-64-02730-5)
- Jepma, J.C., and Nakicenovic, N.: 2006, *Sustainable Development and the Role of Gas*, Published by the International Gas Union for the 23rd World Gas Conference, June 2006, Amsterdam, The Netherlands, pp. 126. (ISBN 10 90-78212-05-5)
- Schellnhuber, H.-J., Cramer, W., Nakicenovic, N., Wigley, T., and Yohe, G. (eds): 2006, *Avoiding Dangerous Climate Change*, Cambridge University Press, Cambridge, UK. (ISBN 13 978-0-521-86471-8)
- Grubler, A. *et al.*: 2005, *Harnessing Science, Technology and Innovation for Sustainable Development*, report from the ICSU–ISTS–TWAS Consortium ad hoc Advisory Group, ICSU Paris, France, pp. 38. (ISBN 0-930357-63-9)
- Grubler, A.: 2004, *Technology and Global Change*, Paperback published by Cambridge University Press, Cambridge, UK (ISBN 0-521-54332-0). Chinese translation published by Tsinghua University Press, Beijing, China. (ISBN 7302058938)
- Schrattenholzer, L., Miketa, A., Riahi, K., Roehrl, R.A., Strubegger, M. *et al.*: 2004, *Achieving a Sustainable Global Energy System*, Edward Elgar Publishing, Cheltenham, UK, pp. 232. (ISBN 1-84376-923-9)
- Grubler, A., Nakicenovic, N., and Nordhaus, W.D. (eds): 2002, *Technological Change and the Environment*, Resources for the Future Press, Washington, DC, USA, pp. 407. (ISBN 1-891853-46-5)
- Nakicenovic, N., Alcamo, J., Davis, G., de Vries, B., Fenhann, J., Gaffin, S., Gregory, K., Grubler, A. *et al.*: 2000, *Special Report on Emissions Scenarios*, Working Group III of the Intergovernmental Panel on Climate Change, IPCC, Cambridge University Press, Cambridge, UK, pp. 595. (ISBN 0-521-80493-0), <http://www.grida.no/climate/ipcc/emission/index.htm>.
- Nakicenovic, N., Grubler, A., and McDonald, A. (eds): 1998, *Global Energy Perspectives*, Cambridge University Press, Cambridge, UK, pp. 281. (ISBN 0-521-64569-7)
- Grubler, A.: 1998, *Technology and Global Change*, Cambridge University Press, Cambridge, UK. (ISBN 0-521-59109-0)
- Nakicenovic, N., Nordhaus, W.D., Richels, R., and Toth, F.L. (eds): 1996, *Climate Change: Integrating Science, Economics, and Policy*, International Institute for Applied Systems Analysis, Laxenburg, Austria. CP-96-1.

- Grubler, A., Jefferson, M., McDonald, A., Messner, S., Nakicenovic, N., Rogner, H.-H., and Schrattenholzer, L.: 1995, *Global Energy Perspectives to 2050 and Beyond*, International Institute for Applied Systems Analysis and World Energy Council, WEC, London, UK.
- Nakicenovic, N., Nordhaus, W.D., Richels, R., and Toth, F.L. (eds): 1994, *Integrative Assessment of Mitigation, Impacts, and Adaptation to Climate Change*, International Institute for Applied Systems Analysis, Laxenburg, Austria. CP-94-9.
- Grubler, A., Hoell, O., Lichem, W., and Rakos, C. (eds): 1994, *Environment and Development*, Dachs-Verlag, Vienna, Austria. [In German]. (ISBN 3-85191-020-6)
- Kaya, Y., Nakicenovic, N., Nordhaus, W.D., and Toth, F.L. (eds): 1993, *Costs, Impacts, and Benefits of CO₂ Mitigation*, International Institute for Applied Systems Analysis, Laxenburg, Austria. CP-93-2.
- Nakicenovic, N., and Grubler, A. (eds): 1991, *Diffusion of Technologies and Social Behavior*, Springer-Verlag, Berlin, Germany. (ISBN 3-540-53846-1)
- Gilli, P.-V., Nakicenovic, N., Grubler, A., and Bodda, L.: 1990, *Technological Progress, Structural Change, and Efficient Energy Use*, Vol. 6 Schriftenreihe des Verbundkonzerns, Verbundgesellschaft, Vienna, Austria. [In German].
- Grubler, A.: 1990, *The Rise and Fall of Infrastructures, Dynamics of Evolution and Technological Change in Transport*, Physica-Verlag, Heidelberg, Germany. (ISBN 3-7908-0479-7)
- Haefele, W., Anderer, J., McDonald, A., and Nakicenovic, N.: 1981, *Energy in a Finite World: Paths to a Sustainable Future*, (Part 1.), Ballinger, CA, USA.
- Special Journal Issues**
- Grubler, A., Nakicenovic, N., Riahi, K., Wagner, F., et al.: 2007, Introduction and overview, in Riahi, K. and Nakicenovic, N. (eds), Greenhouse Gases – Integrated Assessment, *Technological Forecasting and Social Change, Special Issue*, **74**(7), 873–886, September 2007. (ISSN 0040–1625), doi:10.1016/j.techfore.2006.07.009.
- Grubler, A., O'Neill, B., Riahi, K., Chirkov, V., Goujon, A., et al.: 2007, Regional, national, and spatially explicit scenarios of demographic and economic change based on SRES, in Riahi, K., and Nakicenovic, N. (eds), Greenhouse Gases – Integrated Assessment, *Technological Forecasting and Social Change, Special Issue*, **74**(7), 980–1029, September 2007. (ISSN 0040–1625), doi:10.1016/j.techfore.2006.05.023.
- Keppo, I., O'Neill, B., and Riahi, K.: 2007, Probabilistic temperature change projections and energy system implications of greenhouse gas emission scenarios, in Riahi, K., and Nakicenovic, N. (eds), Greenhouse gases – Integrated Assessment, *Technological Forecasting and Social Change, Special Issue*, **74**(7), 936–961, September 2007. (ISSN 0040–1625), doi:10.1016/j.techfore.2006.05.024.
- Riahi, K., Grubler, A., and Nakicenovic, N.: 2007, Scenarios of long-term socio-economic and environmental development under climate stabilization, in Riahi, K., and Nakicenovic, N. (eds), Greenhouse Gases – Integrated Assessment, *Technological Forecasting and Social Change, Special Issue*, **74**(7), 887–935, September 2007. (ISSN 0040–1625), doi:10.1016/j.techfore.2006.05.026.
- Riahi, K., and Nakicenovic, N. (eds): 2007, Greenhouse Gases – Integrated Assessment, *Technological Forecasting and Social Change, Special Issue*, **74**(7), September 2007, pp. 234. (ISSN 0040–1625)
- Riahi, K., and Nakicenovic, N. (eds): 2007, Greenhouse Gases – Integrated Assessment, *Technological Forecasting and Social Change, Special Issue*, **74**(7): 873–1108. (ISSN 0040-1625), www.sciencedirect.com/science/journal/00401625.
- Rao, S., Keppo, I., and Riahi, K.: 2006, Importance of technological change and spillovers in longterm climate policy, in *Endogenous Technological Change and the Economics of Atmospheric Stabilisation, Special Issue*, The Quarterly Journal of the IAEE's Energy Economics Education Foundation, **27**: 123–140.
- Rao, S., and Riahi, K.: 2006, The role of non-CO₂ greenhouse gases in climate change mitigation: Long-term scenarios for the 21st century, *The Energy Journal*, IAEE, Special Issue 3, 27: 177-200. www.iaee.org/en/publications/journal.aspx.

- Nakicenovic, N. (ed.): 2000, Global Greenhouse Gas Emissions Scenarios: Five Modeling Approaches, *Technological Forecasting and Social Change*, **63**(2–3), 105–388. (ISSN 0040–1625)
- Alcamo, J., and Nakicenovic, N. (eds): 1998, Long-term Greenhouse Gas Emission Scenarios and Their Driving Forces, *Mitigation and Adaptation Strategies for Global Change*, **3**(2–4), 95–466. (ISSN 1381–2386)
- Foray, D., and Grubler, A.: 1996, Technology and the Environment: An Overview, *Technological Forecasting and Social Change*, Special Issue, **53**(1): 3–13, (ISSN 0040-1625). Reprinted as RR-97-5, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N., Nordhaus, W.D., Richels, R., and Toth, F.L. (eds): 1995, Integrated Assessment of Mitigation, Impacts and Adaptation to Climate Change, *Energy Policy*, **23**(4–5), 251–476. (ISSN 0301–4215)
- Nakicenovic, N., Grubler, A., Inaba, A., Messner, S., Nilsson, S., Nishimura, Y., Rogner, H.-H., Schaefer, A., Schratzenholzer, L., Strubegger, M., Swisher, J., Victor, D., and Wilson, D.: 1993, Long-term Strategies for Mitigating Global Warming, *Energy – The International Journal*, **18**(5), 401–609, (ISSN 0360–5442). Reprinted as RR-93-11, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N., and Grubler, A. (eds): 1991, From Democracy to Chain Saws: New Perspectives on Innovation Diffusion, *Technological Forecasting and Social Change*, **39**(1–2), 1–231. (ISSN 0040–1625)

Reviewed Articles and Book Chapters

- Krey, V., and Riahi, K.: forthcoming, Risk hedging strategies under energy system and climate policy uncertainties – A stochastic scenario analysis, *Energy Economics* (submitted).
- Rose, S., Ahammad, H., Eickhout, B., Fisher, B., Kurosawa, A., Rao, S., Riahi, K., and van Vuuren, D.P.: forthcoming, Land-base mitigation in climate stabilization, *Energy Policy* (submitted).
- Azar, C., Lindgren, K., Obersteiner, M., Riahi, K., van Vuuren D.P., den Elzen, K.M.G., Moellersten, K., and Larson, E.D.: 2010, The feasibility of low CO₂ concentration targets and the role of bio-energy with carbon capture and storage (BECCS), *Climatic Change*, **100**(1):195–202 (May 2010). doi:10.1007/s10584-010-9832-7.
- Bruckner, T., Edelhofer, O., Held, H., Haller, M., Lüken, M., Bauer, N., and Nakicenovic, N.: 2010, Robust options for decarbonization, in Schellnhuber, H.J. et al. (eds), *Global Sustainability – A Nobel Cause*, Cambridge, UK: Cambridge University Press, (28 February 2010), pp. 392. (ISBN-10: 0521769345, ISBN-13: 978-0521769341), http://www.nobel-cause.de/book/NobelCauseBook_chapter16.pdf.
- Doll, C., and Pachauri, S.: 2010, Estimating rural populations without access to electricity in developing countries through nighttime light satellite imagery, *Energy Policy*, **38**(10): 5661–5670. doi:10.1016/j.enpol.2010.05.014.
- den Elzen, M., and Riahi, K. (Lead Authors): 2010, What is the emissions gap?, in *The Emissions Gap Report. Are the Copenhagen Accord Pledges Sufficient to Limit Global Warming to 2°C or 1.5°C? A preliminary assessment*. United Nations Environment Programme, Nairobi, Kenya, pp. 41–44. www.unep.org/publications/ebooks/emissionsgapreport.
- Ekholm, T., Krey, V., Pachauri, S., and Riahi, K.: 2010, Determinants of household energy consumption in India, *Energy Policy*, **38**(10): 5696–5707. doi: 10.1016/j.enpol.2010.05.017.
- Grubler, A.: 2010, The costs of the French nuclear scale-up: A case of negative learning by doing, *Energy Policy*, **38**(9):5174–5188 (September 2010). doi:10.1016/j.enpol.2010.05.003.
- Grubler, A., and Riahi, K.: 2010, Do governments have the right mix in their energy R&D portfolios? *Carbon Management*, **1**(1):79–87. doi: 10.4155/cmt.10.16.
- Keirstead, J., and Schulz, N.B.: 2010, London and beyond: Taking a closer look at urban energy policy, *Energy Policy*, **38**(9): 4870–4879. doi:10.1016/j.enpol.2009.07.025.
- Lamarque, J-F., Bond, T.C., Eyring, V., Granier, C., Heil, A., Klimont, Z., Lee, D., Liousse, C., Mieville, A., Owen, B., Schultz, M.G., Shindell, D., Smith, S.J., Stehfest, E., Van Aardenne, J., Cooper, O.R., Kainuma, M.,

- Mahowald, N., McConnell, J.R., Naik, V., Riahi, K., and van Vuuren, D.P.: 2010, Historical (1850–2000) gridded anthropogenic and biomass burning emissions of reactive gases and aerosols: methodology and application. *Atmos. Chem. Phys. Discuss* 10: 4963–5019. www.atmos-chem-phys-discuss.net/10/4963/2010/.
- Manning, M.R., Edmonds, J., Emori, S., Gruebler, A., Hibbard, K., Joos, F., Kainuma, M., Keeling, R.F., Kram, T., Manning, A.C., Meinshausen, M., Moss, R., Nakicenovic, N., Riahi, K., Rose, S.K., Smith, S., Swart, R., and van Vuuren, D.P.: 2010, Misrepresentation of the IPCC CO₂ emission scenarios, *Nature Geoscience*, 3(6): 376–377. doi:10.1038/ngeo880.
- Moss, R.H., Edmonds, J., Hibbard, K., Manning, M., Rose, S., van Vuuren, D.P., Carter, T.R., Emori, S., Kainuma, M., Kram, T., Meehl, G., Mitchell, J., Nakicenovic, N., Riahi, K., Smith, S., Stouffer, R.J., Thomson, A., Weyant, J., and Wilbanks, T.: 2010, The next generation of scenarios for climate research and assessment, *Nature*, 463:747–756. doi:10.1038/nature08823.
- Nakicenovic, N.: 2010, Energy research and technology for a transition toward a more sustainable future, in Schellnhuber, H.J. et al. (eds), *Global Sustainability – A Nobel Cause*, Cambridge, UK: Cambridge University Press, (28. February 2010), pp. 392. (ISBN-10: 0521769345, ISBN-13: 978-0521769341), http://www.nobel-cause.de/book/NobelCauseBook_chapter21.pdf.
- Nakicenovic, N. (Contributor): 2010, *World Development Report 2010: Development and Climate Change*, International Bank for Reconstruction and Development, The World Bank, Washington, DC, USA. (ISBN: 978-0-8213-7989-5), <http://siteresources.worldbank.org/INTWDR2010/Resources/5287678-1226014527953/WDR10-Full-Text.pdf>.
- Nie, K., Lin, S., Ma, T., and Nakamori, Y.: 2010, Connecting informal networks to management of tacit knowledge, *Journal of Systems Science and Systems Engineering*, 19(2):237–253 (June 2010). doi:10.1007/s11518-010-5130-1.
- O'Neill, B.C., Riahi, K., and Keppo, I.: 2010, Mitigation implications of midcentury targets that preserve long-term climate policy options. *Proceedings of the National Academy of Sciences (PNAS) of the United States of America*, 107(3): 1011–1016.
- Riahi, K. (Contributing Author): 2010, Twenty-first century temperature projections associated with pledges, in *The Emissions Gap Report. Are the Copenhagen Accord Pledges Sufficient to Limit Global Warming to 2°C or 1.5°C? A Preliminary Assessment*. United Nations Environment Programme, Nairobi, Kenya, pp. 46–52. www.unep.org/publications/ebooks/emissionsgapreport/.
- Riahi, K. (Contributing Author): 2010, Which emission pathways are consistent with a 2°C or 1.5°C Temperature limit?, in *The Emissions Gap Report. Are the Copenhagen Accord Pledges Sufficient to Limit Global Warming to 2°C or 1.5°C? A Preliminary Assessment*. United Nations Environment Programme, Nairobi, Kenya, pp. 23–30. www.unep.org/publications/ebooks/emissionsgapreport/.
- Schulz, N.B.: 2010, Delving into the carbon footprints of Singapore – Comparing direct and indirect greenhouse gas emissions of a small and open economic system, *Energy Policy*, 38(9): 4848–4855 (September 2010). doi:10.1016/j.enpol.2009.08.066.
- van Vuuren, D.P., Edmonds, J., Smith, S.J., Calvin, K.V., Karas, J., Kainuma, M., Nakicenovic, N., Riahi, K., van Ruijven, B.J., Swart, R., and Thomson, A.: 2010, What do near-term observations tell us about long-term developments in greenhouse gas emissions?, *Climatic Change*, 103(3–4):635–642. doi:10.1007/s10584-010-9940-4.
- van Vuuren, D.P., and Riahi, K.: 2010, The relationship between short-term emissions and long-term concentration targets, *Climatic Change*, 104(3–4): 793–801. doi: 10.1007/s10584-010-0004-6.
- van Vuuren, D.P., Smith, S.J., and Riahi, K.: 2010, Downscaling socioeconomic and emissions scenarios for global environmental change research: A review, *Wiley Interdisciplinary Reviews: Climate Change*, 1(3): 393–404. doi: 10.1002/wcc.50.
- Cantono, S., and Silverberg, G.: 2009, A percolation model of eco-innovation diffusion: The relationship between diffusion, learning economies and subsidies, *Technological Forecasting and Social Change*,

76(4): 487–496. doi:10.1016/j.techfore.2008.04.010.

Grubler, A.: 2009, Determinants of the future of fossil extractive industries, *BHM Berg- und Huettenmaennische Monatshefte*, **154**(6): 243–248. doi:10.1007/s00501-009-0469-7.

Krey, V., and Riahi, K.: 2009, Implications of delayed participation and technology failure for the feasibility, costs, and likelihood of staying below temperature targets – Greenhouse gas mitigation scenarios for the 21st century, *Energy Economics*, **31**(2): S94–S106. doi:10.1016/j.eneco.2009.07.001.

Krey, V., Canadell, J.G., Nakicenovic, N., Abe, Y., Andruleit, H., Archer, D., Grubler, A., Hamilton, N.T.M., Johnson, A., Kostov, V., Lamarque, J-F., Langhorne, N., Nisbet, E.G., O'Neill, B.C., Riahi, K., Riedel, M., Wang, W., and Yakushev, V.: 2009, Gas hydrates: Entrance to a methane age or climate threat?, *Environmental Research Letters*, **4**(3):034007. doi:10.1088/1748-9326/4/3/034007.

Leduc, S., Schmid, E., Obersteiner, M., and Riahi, K.: 2009, Methanol production by gasification using a geographically explicit model, *Biomass and Bioenergy*, **33**(5): 745–751. doi:10.1016/j.biombioe.2008.12.008.

Ma, T., Grubler, A., and Nakamori, Y.: 2009, Modeling technology adoptions for sustainable development under increasing returns, uncertainty, and heterogeneous agents, *European Journal of Operations Research*, **195**(1), 296–306.

Ma, T., and Nakamori, Y.: 2009, Modeling technological change in energy systems – From optimization to agent-based modeling, *Energy*, **34**(7), 873–879. doi:10.1016/j.energy.2009.03.005.

Schellnhuber, H. J., Messner, D., Leggewie, C., Nakicenovic, N. et al.: 2009, Solving the climate dilemma: The budget approach, Special Report–WBGU (German Advisory Council on Global Change), Berlin, pp. 51. (ISBN 3-936191-27-1)

Van Vuuren, D.P., Hoogwijk, M., Barker, T., Riahi, K., Boeters, S., Chateau, J., Scriegiu, S., van Vliet, J., Masui, T., Blok, K., Blomen, E., and Kram, T.: 2009, Comparison of methods top-down and bottom-up estimates of sectoral and regional greenhouse gas emission reduction potentials, *Energy Policy*, **37**(12): 5125–5139, doi:10.1016/j.enpol.2009.07.024.

Bernstein, L., Bosch, P., Canziani, O., Chen, Z.H., Christ, R., Riahi, K. (Contributor) et al.: 2008, *Climate Change 2007: Synthesis Report*, Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), IPCC Publications, Geneva, Switzerland, pp. 104. (ISBN 92-9169-122-4)

Doll, C.N.H.: 2008, *CIESIN Thematic guide to night-time light remote sensing and its applications*, Center for International Earth Science Information Network of Columbia University, Palisades, NY, USA. <http://sedac.ciesin.columbia.edu/tg/>.

Grubler, A.: 2008, Energy transitions, in Cutler J. Cleveland (ed.), *Encyclopedia of Earth*, Washington, DC: Environmental Information, [First published in the Encyclopedia of Earth August 29, 2006; Last revised June 3, 2008; Retrieved June 3, 2008. Available online only], http://www.eoearth.org/article/Energy_transitions.

Haas, R., Nakicenovic, N., Ajanovic, A., Faber, T., et al.: 2008, Towards sustainability of energy systems: A primer on how to apply the concept of energy services to identify necessary trends and policies, *Energy Policy*. (ISSN 0301–4215), doi:10.1016/j.enpol.2008.06.028.

Ma, T., and Grubler, A.: 2008, The evolution of technological complexity: An agent-based simulation model of the global energy system, in Golub, A., and Markandya, A. (eds), *Modeling Environment-Improving Technological Innovations under Uncertainty*, Routledge, pp. 205–244.

Ma, T., and Nakamori, Y.: 2008, Modeling uncertainties of technological learning with stochastic optimization, *Proceedings of the 9th International Symposium on Knowledge and Systems Sciences*, Conference jointly held with the 4th Asia-Pacific International Conference on Knowledge Management, December 2008, Guangzhou, China, pp. 37–42.

- Moss, R.H., Nakicenovic, N., O'Neill, B.C., Riahi, K. et al., (2008). *Towards New Scenarios for Analysis of Emissions, Climate Change, Impacts, and Response Strategies*. IPCC, Geneva, Switzerland. (ISBN: 978-92-9169-125-8)
- Nakicenovic, N.: 2008, The mobility drive, *Elektronik und Informationstechnik*, **125**(11), 362–366. doi:10.1007/s00502-008-0586-0.
- Nakicenovic, N., Haas, R., Resch, G., Schleicher, S.P., Kettner, C., et al.: 2008, Assessment of Austrian contribution toward EU 2020 target sharing: Responding to the energy and climate package of the European Commission, in Nakicenovic, N., and Schleicher, S.P. (Coordinators), *Assessing Austria in the EU 2020 Target Sharing, Synthesis Report*, Austrian Institute for Economic Research (WIFO), Wegener Center for Climate and Global Change, Vienna University of Technology, Austria, pp. 51.
- O'Neill, B., and Nakicenovic, N.: 2008, Learning from global emissions scenarios, in Where Next with Global Environmental Scenarios, *Environmental Research Letters*, Special Issue, **3**(045014), 9 pp, doi: 10.1088/1748-9326/3/4/045014. Reprinted as RP-09-002, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Rogner, H.-H., McDonald, A., and Riahi, K.: 2008, Long-term performance targets for nuclear energy. Part 2: Markets and learning rates, *International Journal of Global Energy Issues*, **30**(1–4), 77–101. doi: 10.1504/IJGEI.2008.019857.
- Rogner, H.-H., McDonald, A., and Riahi, K.: 2008, Long-term performance targets for nuclear energy. Part 1: The global scenario context, *International Journal of Global Energy Issues*, **30**(1–4), 28–76. doi: 10.1504/IJGEI.2008.019856.
- Van Vuuren, D., and Riahi, K.: 2008, Do recent emission trends imply higher emissions forever?, *Climatic Change*, **91**(3–4), 237–248.
- Van Vuuren, D., Meinshausen, M., Plattner, G.K., Joos, F., Riahi, K., Nakicenovic, N., et al.: 2008, Temperature increase of 21st century mitigation scenarios, *PNAS*, **105**(40), 15258–15262. <http://www.pnas.org/content/105/40/15258.full.pdf+html>.
- Zhang, L., Nie, G., Ma, T., Liu, F., and Shi, Y.: 2008, An intelligent process-oriented knowledge management system between human, process and knowledge, *Proceedings of the 9th International Symposium on Knowledge and Systems Sciences*, jointly with the 4th Asia-Pacific International Conference on Knowledge Management, December 2008, Guangzhou, China, pp. 347–354.
- Bierbaum, R., Holdren, J.P., MacCracken, M., Moss, R.H., Raven, P.H., Nakicenovic, N. et al.: 2007, *Confronting Climate Change: Avoiding the Unmanageable and Managing the Unavoidable*, Scientific Expert Group Report on Climate Change and Sustainable Development, United Nations Foundation and Sigma Xi, The Scientific Research Society, North Carolina, USA, pp. 144. http://www.globalproblems-globalsolutions-files.org/unf_website/PDF/climate%20_change_avoid_unmanagable_manage_unavoidable.pdf.
- Chu, S., Goldemberg, J., Arungu-Olende, S., El-Ashry, M., Davis, G., Nakicenovic, N. et al.: 2007, *Lighting the Way: Toward a Sustainable Energy Future*, InterAcademy Council Report, pp. 174. (ISBN 978-90-6984-531-9)
- Dearing, J.A., Graumlich, L.J., Grove, R.H., Grubler, A., Haberl, H. et al.: 2007, Integrating socioenvironmental interactions over Centennial timescales – Needs and issues, in Constanza, R., Graumlich, L.J., and Steffen, W. (eds), *Sustainability or Collapse: An Integrated History and Future of People on Earth*, Dahlem University and MIT Press, Cambridge, pp. 243–274. (ISBN 13:978-0-262-03366-4)
- Fisher, B., Nakicenovic, N. (Coordinating Lead Author), Alfsen, K., Corfee-Morlot, J., de la Chesnaye, F., Riahi, K. et al.: 2007, Issues related to mitigation in the long-term context, Chapter 3, in B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds), *Climate Change 2007 – Mitigation*, Fourth Assessment Report, Working Group III of the Intergovernmental Panel on Climate Change (IPCC), Cambridge University Press, Cambridge, pp. 169–250. (ISBN 978-0-5218-70598)

- Frenken, K., and Silverberg, G. (eds): 2007, Editorial: Advances in complex systems, *Advances in Complex Systems*, **10**(1): 1–4.
- Halsnaes, K., Shukla, P., Ahuja, D., Akumu, G., Beale, R., Edmonds, J., Gollier, C., Grubler, A. et al.: 2007, Framing issues, Chapter 2, in B., Metz, O.R., Davidson, P.R., Bosch, R., Dave, L.A., Meyer (eds), *Climate Change 2007 – Mitigation*, Fourth Assessment Report, Working Group III of the Intergovernmental Panel on Climate Change (IPCC), Cambridge University Press, Cambridge, 117–167. (ISBN 978-0-5218-70598)
- Klaassen, G., and Riahi, K.: 2007, Internalizing externalities of electricity generation: An analysis with MESSAGE-MACRO, *Energy Policy*, **35**(2): 815–827. doi:10.1016/j.enpol.2006.03.007.
- Ma, T., and Nakamori, Y.: 2007, Agent-based modeling and simulation on network externality and knowledge strategy, *International Journal of Knowledge and Systems Sciences*, **4**(1): 25–30.
- Ma, T., and Nakamori, Y.: 2007, Agent-based simulation for Kansei Engineering: Testing a fuzzy linear quantification method in an artificial world, *Journal of Systems Science and Systems Engineering*, **16**(3): 308–322.
- Ma, T., Wierzbicki, A.P., and Nakamori, Y.: 2007, Establish a creative environment for roadmapping in academy – From the perspective of i-system methodology, *Journal of Systems Science and Systems Engineering*, **16**(4): 469–488.
- Ma, T., Yan, Y., and Nakamori, Y.: 2007, Roadmapping and i-systems, in *Computational Science – ICCS 2007*, Shi Y, van Aldaba GD, Dongara J, Sloot PMA (eds.), Springer Berlin Heidelberg, Germany, 4490: 1–8. (ISBN 978-3-540-72589-3)
- Silverberg, G., and Verspagen, B.: 2007, Self-organization of R&D search in complex technology spaces, *Journal of Economic Interaction and Coordination*, **2**(2): 211–229.
- Grubler, A.: 2006, Doing more with less: Improving the environment through green engineering, *Environment*, **48**(2), 22–37. (ISSN 0013-9157)
- Grubler, A., O'Neill, B., and van Vuuren, D.: 2006, Avoiding hazards of best-guess climate scenarios, *Nature*, **440**, 740.
- Ma, T., Liu, S., and Nakamori, Y.: 2006, Roadmapping as a way of knowledge management for supporting scientific research in academia, *Systems Research and Behavioral Science*, **23**(6): 743–755.
- Nakicenovic, N. (Coordinating Lead Author), McGalde, J., Ma, Sh., Alcamo, J., Bennett, E. et al.: 2006, Lessons learned for scenario analysis, in *Ecosystems and Human Well-being: Scenarios*, Vol. 2, Millennium Ecosystem Assessment (MA), Island Press, Chicago, USA, 449–468.
- Nakicenovic, N., Kolp, P., Riahi, K., Kainuma, M., and Hanaoka, T.: 2006, Assessment of emissions scenarios revisited, *Environmental Economics and Policy Studies*, **7**(3): 137–173.
- Nelson, G.C., Bennett, E., Berhe, A.A., Cassman, K., De Fries, R., Dobermann, A., Nakicenovic, N., O'Neill, B. et al.: 2006, Anthropogenic drivers of ecosystem change: An overview, *Ecology and Society*, **11**(2): 29. <http://www.ecologyandsociety.org/vol11/iss2/art29>.
- Nelson, G.C., Bennett, E., Berhe, A.A., Cassman, K., Nakicenovic, N. (Lead Author) et al.: 2006, Drivers of change in ecosystem condition and services, in *Ecosystems and Human Wellbeing: Scenarios*, Vol. 2, Millennium Ecosystem Assessment (MA), Island Press, Chicago, USA, 173–222.
- Obersteiner, M., Alexandrov, G., Benitez, P.C., McCallum, I., Kraxner, F., Riahi, K., Rokityanskiy, D., and Yamagata, Y: 2006, Global supply of biomass for energy and carbon sequestration from afforestation/reforestation activities, *Mitigation and Adaptation Strategies for Global Change*, Springer, Netherlands, pp. 1573–1596. (ISSN:1381-2386), DOI: 10.1007/s11027-006-9031-z.
- O'Neill, B., Crutzen, P., Grubler, A., Duong, M.H., Keller, K. et al.: 2006, Learning and climate change. Commentary, *Climate Policy*, **6**: 585–589. (ISSN 1469-3062)

- Schweitzer, F., and Silverberg, G.: 2006, Konkurrenz, Selektion und Innovation in Oekonomischen Systemen, in Poeschel, T., Malchow, H., and Schimansky-Geier, L. (eds), *Irreversible Prozesse und Selbstorganisation*, Logos Verlag Berlin, Berlin, Germany, pp. 361–374. (ISBN 978-3-8325-1350-4)
- Silverberg, G.: 2006, Long waves in global warfare and maritime hegemony? A complex systems perspective, in Devezas, T. (ed), *Kondratieff Waves, Warface and World Security*, IOS Press, Amsterdam, Netherlands, pp.154-164. (ISBN 978-1-58603-588-4)
- Grubler, A.: 2005, Energy transitions, in C.J., Cleveland and C., Morris (eds), *Dictionary of Energy*, Elsevier, Amsterdam, Netherlands, pp. 146. (ISBN 0-080-44578-0)
- Herzog, H., Smekens, K., Dadhich, P., Dooley, J., Riahi, K. (Lead Author) et al.: 2005, Cost and Economic Potential, in *Special Report on Carbon Capture and Storage*, Working Group III of the Intergovernmental Panel on Climate Change (IPCC), Cambridge University Press, UK. (ISBN 92–9169–119–4)
- Ma, T., and Nakamori, Y.: 2005, Roadmapping and i-systems for supporting scientific research, *International Journal of Knowledge and Systems Sciences*, JAIST Press, 2(1): 66–72.
- Ma, T.: 2005, Modeling technology transitions under increasing returns, uncertainty, and heterogeneous agents, *Proceedings of the 6th International Symposium on Knowledge and Systems Sciences*, 29–31 August 2005, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N., (Coordinating Lead Author), McGlade, J., Ma, S.H., Alcamo, J., Bennett, E. et al.: 2005, Lessons learned for scenario analysis, in *Ecosystems and Human Well-being: Scenarios*, Vol. 2, Millennium Ecosystem Assessment (MA), Island Press, Chicago, USA, pp. 449–468. (ISBN: 9781559633901)
- Rao, S., Riahi, K., Kupiainen, K., and Klimont, Z.: 2005, Long-term scenarios for black and organic carbon emissions, *Environmental Sciences*, 2(2–3): 205–216, (June-September, 2005).
doi:10.1080/15693430500397228
- Riahi, K., Barreto, L., Rao, S., and Rubin, E.S.: 2005, Towards fossil-based electricity systems with integrated CO₂ capture: Implications of an illustrative long-term technology policy, in Rubin, E.S., Keith, D.W., and Gilboy, C.F. (eds), *Proceedings of the 7th International Conference on Greenhouse Gas Control Technologies*, Peer-Reviewed Papers and Plenary Presentations, Vol. 1, IEA Greenhouse Gas Programme, Cheltenham, UK.
- Schrattenholzer, L., and Riahi, K.: 2005, Alternative Scenarios of Greenhouse Gas Emissions. International Institute for Applied Systems Analysis Reprint RR-05-004, from Encyclopedia of Energy, 3: 670–76.
- Uyterlinde, M.A., Martinus, G.H., Roesler, H., Riahi, K., Keppo, I. et al.: 2005, The Contribution of Renewable Energy to a Sustainable Energy System, Vol. 2, in the CASCADE MINTS project, ECN-C-05-34, Energy Research Centre of the Netherlands (ECN), Petten, Netherlands pp. 146.
- Grubler, A.: 2004, Transitions in energy use, *Encyclopedia of Energy*, 6: 163–177, (ISSN 0–12–176480–X). Reprinted as RR-04-005, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N.: 2004a, Future scenarios, Part II, *Energy End-Use Technologies for the 21st Century*, a report of the World Energy Council, pp. 11–26 (ISBN 0–946121–1090–946121–15X)
- Nakicenovic, N.: 2004b, Socio-economic driving forces of emissions scenarios, in Field, B.C., and Raupach, M.R. (eds), *The Global Carbon Cycle: Integrating Humans, Climate and the Natural World*, SCOPE Series 62, Island Press, pp. 225–242. (ISBN 1–55963–527–4)
- Nakicenovic, N.: 2004c, Preface, in Shukla, P.R. et al., *Climate Policy Assessment for India: Applications of Asia-Pacific Integrated Model (AIM)*, Universities Press, India, pp. xi–xii. (ISBN 81–7371–484–3)
- Altmann, J., Andler, D., Bruland, K., Nakicenovic, N., Nordmann, A. et al.: 2004, Converging Technologies – Shaping the Future of European Societies, *Report of the High-Level Expert Group on “Foresighting the New Technology Wave,”* European Commission Community Research, Brussels, Belgium. (ISBN 92–894–8313–X)

- Anderson, D., Coelho, S.T., Goldemberg, J., Johansson, T.B., Nakicenovic, N. et al.: 2004, *Overview: 2004 Update, World Energy Assessment II*, UNDP, UNDESA, WEC, New York, NY, USA. (ISBN 92-1-126167-8), <http://www.undp.org/energy/weaover2004.htm>.
- Caldeira, K., Granger Morgan, M., Baldocchi, D., Brewer, P.G., Chen, Ch-T.A., Nabuurs, G.-J., Nakicenovic, N. et al.: 2004, A portfolio of carbon management options, in Field, B.C. and Raupach, M.R. (eds), *The Global Carbon Cycle: Integrating Humans, Climate and the Natural World*, SCOPE Series 62, Island Press, pp. 103–130. (ISBN 1-55963-527-4)
- Cox, P., and Nakicenovic, N.: 2004, Assessing and simulating the altered functioning of the earth system in the anthropocene, in Schellnhuber, H.-J., Crutzen, P.J., Clark, W.C., Claussen, M., and Held, H. (eds), *Earth System Analysis for Sustainability*, Dahlem Workshop Report Series (DWR 91), MIT Press, pp. 293–312, (ISBN 0-262-19513-5). Reprinted as RR-04-14, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Edmonds, J., Joos, F., Nakicenovic, N., Richels, R., and Sarmiento, J.: 2004, Scenarios, targets, gaps and costs, in Field, B.C. and Raupach, M.R. (eds), *The Global Carbon Cycle: Integrating Humans, Climate and the Natural World*, SCOPE Series 62, Island Press, pp. 77–102. (ISBN 1-55963-527-4)
- Grubler, A., Nakicenovic, N., Alcamo, J., Davis, G., Fenmann, J. et al.: 2004, Emissions scenarios: A final response, *Energy & Environment*, **15**(1): 11–24. (ISSN 0958-305X)
- Lempert, R., Nakicenovic, N., Sarewitz, D., and Schlesinger, M.: 2004, Characterizing climate-change uncertainties for decision-makers: An editorial essay, *Climatic Change*, **65**(1–2): 1–9. (ISSN 0165-0009)
- Riahi, K., Barreto, L., Rao, S., and Rubin, E.S.: 2004, Towards fossil-based electricity systems with integrated CO₂ capture: Implications of an illustrative long-term technology policy, in Rubin, E.S., Keith, D.W., and Gilboy, C.F. (eds), *Proceedings of 7th International Conference on Greenhouse Gas Control Technologies*, Vol. 1: Peer-Reviewed Papers and Plenary Presentations, IEA Greenhouse Gas Programme, Cheltenham, UK.
- Riahi, K., Rubin, E.S., and Schrattenholzer, L.: 2004, Prospects for carbon capture and sequestration technologies assuming their technological learning, *Energy*, **29**(9–10): 1309–1318.
- Riahi, K., Rubin, E.S., Taylor, M.R., Schrattenholzer, L., and Hounshell, D.: 2004, Technological learning for carbon capture and sequestration technologies, *Energy Economics*, **26**4: 539–564.
- Schrattenholzer, L., and Riahi, K.: 2004, Alternative scenarios of greenhouse gas emissions, *Encyclopedia of Energy*, Elsevier Science, **3**: 67–76.
- Steffen, W. (Rapporteur), Andreae, M.O., Bolin, B., Cox, P., Crutzen, P.J., Cubasch, U., Held, H., Nakicenovic, N. et al.: 2004, Group report: Earth system dynamics in the anthropocene, in Schellnhuber, H.-J., Crutzen, P.J., Clark, W.C., Claussen, M., and Held, H. (eds), *Earth System Analysis for Sustainability*, Dahlem Workshop Report Series (DWR 91), MIT Press, pp. 313–340. (ISBN 0-262-19513-5)
- Steffen, W., Andreae, M.O., Bolin, B., Cox, P., Crutzen, P.J., Cubasch, U., Held, H., Nakicenovic, N. et al.: 2004, Abrupt changes: The Achilles heels of the earth system, *Environment*, **46**(3): 8–20, (ISSN 0013-9157). Reprinted as RR-04-006, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Grubler, A.: 2003, Technology, global change and industrial ecology, in Bourg, D., and Erkman, S. (eds), *Perspectives on Industrial Ecology*, Greenleaf Publishing Ltd., Sheffield, UK, pp. 46–57. (ISBN 1-874719-462)
- Nakicenovic, N.: 2003, Global energy perspectives and the role of technology, in Berichte, *Elektrotechnik und Informationstechnik*, **10**: 309, 120. Jahrgang.
- Nakicenovic, N.: 2003, Global energy perspectives and the role of technology, *Elektrotechnik und Informationstechnik (e&i)*, **11**, 377–381, 120. Jahrgang.
- Barreto, L., Makihira, A., and Riahi, K.: 2003, The hydrogen economy in the 21st century: A sustainable development scenario, *International Journal of Hydrogen Energy*, **28**(3): 267–284.

- Nakicenovic, N., Grubler, A., Gaffin, S., Jung, T.-T. *et al.*: 2003, IPCC SRES Revisited: A response, *Energy & Environment*, **14**(2-3): 187–214. (ISSN 0958–305X)
- O'Neill, B., Grubler, A., Nakicenovic, N. *et al.*: 2003, Planning for future energy resources, *Science*, **300**(5619): 581. (ISSN 0013–936X)
- Swart, R., Moreira, J.-R., Morita, T., Nakicenovic, N. *et al.*: 2003, Planning for future energy resources, *Science*, **300**(5619): 582. (ISSN 0013–936X)
- Nakicenovic, N.: 2002a, Technological change and diffusion as a learning process, in Grubler, A., Nakicenovic, N., and Nordhaus, W.D. (eds), *Technological Change and the Environment*, Resources for the Future Press, Washington, DC, USA, pp. 160–181. (ISBN 1-891853-46-5)
- Nakicenovic, N.: 2002b, Methane, as an energy source for the 21st century, *International Journal of Energy Technology and Policy*, **1**(1-2): 91–107, (ISSN 1472–8923). Also published in *International Journal of Global Energy Issues*, **18**(1): 6–22, (ISSN 0954-7118). A version of this paper has also been published in *Informativo mineroenergetico*, **XI**(2), February 2002, 48–50, *Journal of National Association of Mining, Oil and Energy*, Peru. [In Spanish].
- Grubler, A., and Gritsevskyi, A.: 2002, A model of endogenous technological change through uncertain returns on innovation, in Grubler, A., Nakicenovic, N., and Nordhaus, W.D. (eds), *Technological Change and the Environment*, Resources for the Future Press, Washington, DC, USA, pp. 280–319. (ISBN 1-891853-46-5)
- Nakicenovic, N., and Messner, S.: 2002, IIASA Study of a complete supply of renewable energies in Western Europe, *Solarzeitalter*, **14**(1/2002): 31–39. [In German]. (ISSN 0937-3802)
- Grubler, A., Nakicenovic, N., and Nordhaus, W.D.: 2002, Induced technological change and the environment: An introduction, in Grubler, A., Nakicenovic, N., and Nordhaus, W.D. (eds), *Technological Change and the Environment*, Resources for the Future Press, Washington, DC, USA, pp. 1–8. (ISBN 1-891853-46-5)
- Klaassen, G., Miketa, A., Riahi, K., and Schrattenholzer, L.: 2002, Targeting technological progress towards sustainable development, *Energy and Environment*, **13**(4–5): 553–578.
- Klaassen, G., Riahi, K., and Roehrl, R.A.: 2002, Gas infrastructures and the environment in Eurasia in a dynamics-as-usual scenario, *International Journal of Global Energy Issues*, **18**(1): 44–60.
- Grubler, A.: 2001, Trends in global emissions: Carbon, sulfur, and nitrogen, *Encyclopedia of Global Environmental Change*, **3**: 35–53, (ISBN 0471–97796–9). Reprinted as RR-02-004, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N.: 2001a, Decarbonization, *Encyclopedia of Global Change: Environmental Change and Human Society*, **1**: 241–243. (ISBN 0195–10825–6)
- Nakicenovic, N.: 2001b, Energy scenarios – Energetics in the 21st century, *Horisont*, **5** (November): 15–21. [In Estonian]. (ISSN 0134–2282)
- Grubler, A., and Nakicenovic, N.: 2001, Identifying dangers in an uncertain climate, *Nature*, **412**: 15. (ISSN 0028–0836)
- Nakicenovic, N., and Riahi, K.: 2001, An assessment of technological change across selected energy scenarios, *Energy Technologies for the Twenty-First Century*, World Energy Council, WEC, August 2001.
- Hourcade, J.-Ch., Ha-Duong, M., Grubler, A., and Tol, R.S.J.: 2001, INASUD project findings on integrated assessment of climate policies, *Integrated Assessment*, **2**(1): 31–35. (ISSN 1389–5176)
- Carter, T., La Rovere, E.L., Jones, R.N., Leemans, R., Nakicenovic, N. (Lead Author) *et al.*: 2001, Developing and Applying Scenarios, Chapter 3 in *Climate Change 2001: Impacts, Adaptation, and Vulnerability*, Third Assessment Report, pp. 145–191. Working Group II of the Intergovernmental Panel on Climate Change, IPCC, Geneva, Switzerland. (ISBN 0-521-01500-6)

- Davidson, O., Metz, B., Morita, T., Nakicenovic, N., Swart, R. et al.: 2001, *Climate Change 2001: Mitigation, Summary for Policy Makers*, Third Assessment Report, Working Group III of the Intergovernmental Panel on Climate Change, IPCC, Geneva, Switzerland, <http://www.ipcc.ch>.
- Kates, R.W., Clark, W.C., Corell, R., Grubler, A., Hall, J.M. et al.: 2001, Sustainability Science, *Science*, **292**(5517): 641–642, (ISSN 0013–936X). Reprinted as RR-01-07, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Morita, T., Robinson, J., Alcamo, J., Zhou, D., Nakicenovic, N. (Lead Author) et al.: 2001, Greenhouse Gas Emission Mitigation Scenarios and Implications, Chapter 2 in *Climate Change 2001: Mitigation*, Third Assessment Report, 115–167. Working Group III of the Intergovernmental Panel on Climate Change, IPCC, Geneva, Switzerland. (ISBN 0-521-01502-2)
- Obersteiner, M., Azar, C., Kauppi, P., Moellersten, K., Moreira, J., Riahi, K. et al.: 2001, Managing Climate Risk, *Letter to Science*, October 26: 785.
- Prather, M., Ehhalt, D., Dentener, F., Derwent, R., Grubler, A. (Contributing Author) et al.: 2001, Atmospheric Chemistry and Greenhouse Gases, Chapter 4 in *Climate Change 2001: The Scientific Basis*, Third Assessment Report, pp. 239–289. Working Group I of the Intergovernmental Panel on Climate Change, IPCC, Geneva, Switzerland. (ISBN 0521-01495-6)
- Grubler, A.: 2000a, Managing the global environment, *Environmental Science and Technology*, **34**(7): 184A–187A, (ISSN 0013–936X). Reprinted as RR-00-12, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Grubler, A.: 2000b, Resources and society, *Berg- und Huettenmaennische Monatshefte*, **10/2000**: 386–394. [In German]. (ISSN 0005–8912)
- Nakicenovic, N.: 2000a, Greenhouse Gas Emissions Scenarios: Integrated Modeling Approaches, *Technological Forecasting and Social Change*, **63**(2–3): 105–109, (ISSN 0040–1625). Reprinted as RR-00-19, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N.: 2000b, Greenhouse Gas Emissions Scenarios, *Technological Forecasting and Social Change*, **65**(2): 149–166. (ISSN 0040–1625)
- Gritsevskyi, A., and Nakicenovic, N.: 2000, Modeling Uncertainty of Induced Technological Change, *Energy Policy*, **28**(13): 907–921, (ISSN 0301–4215). Also published (2002) in Grubler, A., Nakicenovic, N., and Nordhaus, W.D. (eds), *Technological Change and the Environment*, Resources for the Future Press, Washington, DC, USA, pp. 251–279, (ISBN 1-891853-46-5). Reprinted as RR-00-24, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N., and Grubler, A.: 2000, Energy and the protection of the atmosphere, *International Journal of Global Energy Issues*, **13**(1–3): 4–57, (ISSN 0954–7118). Reprinted as RR-00-18, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Kram, T., Riahi, K., Roehrl, R.A., van Rooijen, S., Morita, T. et al.: 2000, Global and regional greenhouse gas scenarios, *Technological Forecasting and Social Change*, **63**(2–3): 335–371.
- Morita, T., Nakicenovic, N., and Robinson, J.: 2000, Overview of mitigation scenarios for global climate stabilization based on new IPCC emissions scenarios (SRES), *Environmental Economics and Policy Studies*, **3**(2): 65–88. (ISSN 1432–847X)
- Morita, T., Nakicenovic, N., and Robinson, J.: 2000, The relationship between technological development paths and the stabilization of atmospheric greenhouse gas concentrations in global emissions scenarios, *Center for Global Environmental Research (CGER)–Report*, CGER-I044–2000. (ISSN 1341–4356)
- Riahi, K., and Roehrl, A.R.: 2000, Greenhouse gas emissions in a dynamics-as-usual scenario of economic and energy development, *Technological Forecasting and Social Change*, **63**(2–3): 175–206. (ISSN 0040–1625)

- Riahi, K., and Roehrl, A.R.: 2000, Energy technology strategies for carbon dioxide mitigation and sustainable development, *Environmental Economics and Policy Studies*, **3**(2): 89–123.
- Roehrl, A.R., and Riahi, K.: 2000, Technology Dynamics and Greenhouse Gas Emissions Mitigation – A Cost Assessment, *Technological Forecasting and Social Change*, **63**(2–3): 231–262. (ISSN 0040–1625)
- Victor, D.G., Nakicenovic, N., and Victor, N.: 2000, The Kyoto Protocol emission allocations: windfall surpluses for Russia and Ukraine, *Climatic Change*, **49**(3): 263–277, (ISSN 0165–0009). Reprinted as RR-01-10, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Smith, S.J., Wigley, T.M.L., Nakicenovic, N., and Raper, S.C.B.: 2000, Climate implications of greenhouse gas emissions scenarios, *Technological Forecasting and Social Change*, **65**(2): 195–204. (ISSN 0040–1625)
- Nakicenovic, N., Kram, T., Makarov, A., Sorensen, B., Yokobori, Y., Zhou F. et al.: 2000, Energy Scenarios, Chapter 9, in Goldemberg, J., Anderson, D., Holdren, J.P., Jefferson, M., Jochem, E., Nakicenovic, N., Reddy, A.K.N., Rogner, H.-H. et al., Energy and the Challenge of Sustainability, *World Energy Assessment Report*, UNDP, UNDESA, WEC, New York, NY, USA, (ISBN 92-1-126126-0), <http://www.undp.org/seed/eap/activities/wea>.
- Nakicenovic, N., Davidson, O., Davis, G., Grubler, A., Kram, T., Lebre La Rovere, E., Metz, B., Morita, T., Pepper, W., Pitcher, H., Sankovski, A., Shukla, P., Swart, R., Watson, R., and Zhou, D.: 2000, *Special Report on Emissions Scenarios, Summary for Policy Makers*, Intergovernmental Panel on Climate Change, Geneva, Switzerland, (ISBN 92-9169-113-5). Also published in French (ISBN 92-9169-213-1), Russian (92-9169-313-8), and Spanish (92-9169-413-4), <http://www.grida.no/climate/ipcc/emission/index.htm>.
- Schlesinger, M.E., Malyshev, S., Rozanov, E.V., Yang, F., Andronova, N.G., de Vries, B., Grubler, A., Morita, T., Penner, Y., Pepper, W., Sankovski, A., and Zhang, Y.: 2000, Geographical distributions of temperature change for scenarios of greenhouse gas and sulfur dioxide emissions, *Technological Forecasting and Social Change*, **65**: 167–193. (ISSN 0040-1625)
- Grubler, A.: 1999a, Global energy perspectives: 2050 and beyond, in *Energy: The Next Fifty Years*, OECD Publication, Paris, France, pp. 41–62. (ISBN 92-64-17016-2)
- Grubler, A.: 1999b, Long-term energy futures: The critical role of technology, *Revue de l'Energie*, **508** (July-August): 373–384, (ISSN 0303–240). Reprinted as RR-00-2, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Grubler, A.: 1999c, Uncertainties in social and economic projections, in Carter, T.R., Hulme, M., and Viner, D. (eds), Representing Uncertainty in Climate Change Scenarios and Impact Studies, ECLAT-2 Report, No. 1, Helsinki Workshop, 14–16 April 1999. Climate Research Unit, University East Anglia, Norwich, UK, pp. 55–56. (ISBN 0-902170-25-2)
- Nakicenovic, N.: 1999a, Energy Perspectives for Eurasia and the Kyoto Protocol, Section II, Chapter 5 in Fu-chen Lo, Matsushita, K., and Takagi, H. (eds), *The Sustainable Future of the Global System II, Proceedings of the International Conference on Sustainable Future of the Global System*, 23–24 February 1999, Tokyo, organized by UNU, IAS and IGES, pp. 71–92.
- Nakicenovic, N.: 1999b, Global Reference Emissions Scenarios, Section III, Chapter 6 in Fu-chen Lo, Matsushita, K., and Takagi, H. (eds), *The Sustainable Future of the Global System II, Proceedings of the International Conference on Sustainable Future of the Global System*, 23–24 February 1999, Tokyo, organized by UNU, IAS and IGES, pp. 93–118.
- Nakicenovic, N.: 1999c, Energy perspectives into the next millennium: From resources scarcity to decarbonization, *Technological Forecasting and Social Change*, **62**: 101–106. (ISSN 0040–1625)
- Nakicenovic, N.: 1999d, The Future of World Energy, in Lovins, A., and Hennicke, P. (eds), *Voller Energie, Vision: Die globale Faktor Vier-Strategie fuer Klimaschutz und Atomausstieg, Visionen fuer das 21. Jahrhundert - Bd.8.*, Campus Verlag, Frankfurt/New York, pp. 215-235. [In German]. (ISBN 3-593-36038-1)

- Nakicenovic, N.: 1999e, Energy perspectives for Eurasia in the global context, *Perspectives in Energy*, Quarterly of Moscow International Energy Club and the International Academy of Energy, 1997–1998, **4**(4): 351–365. (ISSN 0961–1347)
- Grubler, A., Nakicenovic, N., and Victor, D.G.: 1999a, Dynamics of energy technologies and global change, *Energy Policy*, **27**: 247–280, (ISSN 0301-4215). Reprinted as RR-99-7, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Grubler, A., Nakicenovic, N., and Victor, D.G.: 1999b, Modeling technological change: Implications for the global environment, *Annual Review of Energy and the Environment*, **24**: 545–569, (ISSN 1056–3466). Reprinted as RR-00-3, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Grubler, A.: 1998a, From well or mine to the consumer: Long-term energy perspectives, *Berg- und Huettenmaennische Monatshefte*, **12**: 449–456. [In German]. (ISSN 0005-8912)
- Grubler, A.: 1998b, Global Energy Perspectives, *GWA Gas, Wasser, Abwasser*, **6/98**: 462–470. [In German].
- Grubler, A.: 1998c, A Review of Global and Regional Sulfur Emission Scenarios, *Mitigation and Adaptation Strategies for Global Change*, **3**(2–4): 383–418, (ISSN 1381–2386). Reprinted as RR-99-5. International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N. (Contributor): 1998, in Watson, R.T., Dixon, J.A., Hamburg, S.P., Janetos, A.C., and Moss, R.H. (eds), *Protecting our Planet, Securing our Future, Interlinkages Assessment Report*, UN Environment Programme, US National Aeronautics and Space Administration, The World Bank, Washington, DC, USA, November 1998.
- Grubler, A. and Messner, S.: 1998, Technological change and the timing of mitigation measures, *Energy Economics*, **20**(5–6): 495–512, (ISSN 0140-9883). Reprinted as RR-99-1, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N., Victor, N., and Morita, T.: 1998, Emissions Scenarios Database and Review of Scenarios, *Mitigation and Adaptation Strategies for Global Change*, **3**(2–4): 95–120, (ISSN 1381–2386). Reprinted as RR-99-4. International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N.: 1997a, Technological change and learning, *Perspectives in Energy*, **4**(2): 173–189. (ISSN 0961–1347)
- Nakicenovic, N.: 1997b, Long-term perspectives: Energy, development and the environment, *Nuclear Energy – Journal of the British Nuclear Energy Society*, **36**(4): 297–303. (ISSN 0140–4067)
- Nakicenovic, N.: 1997c, Decarbonizing as a long-term energy strategy, in Kaya, Y. and Yokobori, K. (eds), *Environment, Energy, and Economy: Strategies for Sustainability*, United Nations University Press, Tokyo, New York, Paris, pp. 271–281. (ISBN 92-808-0911-3)
- Nakicenovic, N.: 1997d, Special integrated assessment issues for developing countries, in Climate change and integrated assessment models [IAMs] – Bridging the gaps, *Proceedings of the IPCC Asia-Pacific Workshop on Integrated Assessment Models*, United Nations University, Tokyo, 10–12 March 1997, IPCC, WMO, UNEP, CGER–Report, pp. 207–213. (ISSN 1341–4356)
- Grubler, A.: 1996, Time for a change: On the patterns of diffusion of innovation, *Daedalus*, **125**(3): 19–42, (ISSN 0011–5266). Reprinted in Ausubel, J.H., and Langford, H.D. (eds), 1997, *Technological Trajectories and the Human Environment*, National Academy Press, Washington, DC, pp.14–32, (ISBN 0–309–05133–9). Reprinted as RR-97-3, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N.: 1996a, Technological change and learning, in Nakicenovic, N., Nordhaus, W.D., Richels, R. and Toth, F.L. (eds), *Climate Change: Integrating Science, Economics, and Policy*, CP-96-1, International Institute for Applied Systems Analysis, Laxenburg, Austria, pp. 271–294.
- Nakicenovic, N.: 1996b, Freeing energy from carbon, *Daedalus*, **125**(3): 95–112, (ISSN 0011–5266). Published in Ausubel, J.H., and Langford, H.D. (eds), 1997, *Technological Trajectories and the Human Environment*, National Academy Press, Washington, DC, pp.74–88, (ISBN 0–309–05133–9). Published

- also in *Chemical Industry, Journal of the Federation of Chemists and Technologists of Yugoslavia*, 1999, **53**(12): 434–441. Reprinted as RR-97-4, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N.: 1996c, Long-term energy perspectives, *VEO Journal*, **4**: 50–54. [In German]. (ISSN 1026–9339)
- Nakicenovic, N.: 1996d, Decarbonization: Doing more with less, *Technological Forecasting and Social Change*, **51**(1): 1–17. (ISSN 0040-1625)
- Grubler, A., and Messner, S.: 1996, Technological uncertainty, in Nakicenovic, N., Nordhaus, W.D., Richels, R., and Toth, F.L. (eds), *Climate Change: Integrating Science, Economics, and Policy*, CP-96-1, International Institute for Applied Systems Analysis, Laxenburg, Austria, pp. 295–314.
- Grubler, A., and Nakicenovic, N.: 1996a, Decarbonizing the global energy system, *Technological Forecasting and Social Change*, **53**(1): 97–110, (ISSN 0040-1625). Reprinted as RR-97-6, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Grubler, A., and Nakicenovic, N.: 1996b, Global energy perspectives 2050, *Energiewirtschaftliche Tagesfragen*, **46**(5): 304–312. [In German]. (ISSN 0720–6240)
- Nakicenovic, N., and Rogner, H.-H.: 1996, Financing global energy perspectives to 2050, *OPEC Review*, **20**(1): 1–24, (ISSN-0277-0180). Reprinted as RR-96-9, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Rogner, H.-H., and Nakicenovic, N.: 1996, The role of sulfur in the climate change debate, *Energiewirtschaftliche Tagesfragen*, **46**(11): 731–735. [In German]. (ISSN 0720–6240)
- Grubler, A., Jefferson, M., and Nakicenovic, N.: 1996, Global energy perspectives: A summary of the Joint Study by the International Institute for Applied Systems Analysis and World Energy Council, *Technological Forecasting and Social Change*, **51**(3): 237–264. (ISSN 0040-1625)
- Messner, S., Golodnikov, A., and Gritsevskyi, A.: 1996, A stochastic version of the dynamic linear programming model MESSAGE III, *Energy – The International Journal*, **21**(9): 775–784, (ISSN 0360-5442). Reprinted as RR-97-2, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N., Gilli, P.V., and Kurz, R.: 1996, Regional and global exergy and energy efficiencies, *Energy – The International Journal*, **21**(3): 223–237. (ISSN 0360-5442)
- Ishitani, H., Johansson, T.B. (Convening Lead Authors); Nakicenovic, N., Rogner, H.-H. *et al.*, (Principal Lead Authors): 1996, Energy supply mitigation options, in Watson, R.T., Zinyowera, M.C., and Moss, R.H. (eds), *Climate Change 1995: Impacts, Adaptations and Mitigation of Climate Change: Scientific-Technical Analyses*, Contribution of Working Group II to the Second Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge and New York, pp. 589–647. (ISBN 0-521-56437-9)
- Michaelis, L. (Principal Author); Bleviss, D., Orfeuil, J.-P., Pischinger, R. (Principal Lead Authors); Nakicenovic, N. *et al.* (Lead Authors); Grubler, A. *et al.* (Contributing Authors): 1996, Mitigation options in the transportation sector, in Watson, R.T., Zinyowera, M.C., and Moss, R.H. (eds), *Climate Change 1995: Impacts, Adaptations and Mitigation of Climate Change: Scientific-Technical Analyses*, Contribution of Working Group II to the Second Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge and New York, pp. 681–712. (ISBN 0-521-56437-9)
- Nakicenovic, N. (Principal Lead Author); Grubler, A., Ishitani, H., Johansson, T., Marland, G., Moreira, J.-R., Rogner, H.-H. (Lead Authors): 1996, Energy primer, in Watson, R.T., Zinyowera, M.C., and Moss, R.H. (eds), *Climate Change 1995: Impacts, Adaptations and Mitigation of Climate Change: Scientific-Technical Analyses*, Contribution of Working Group II to the Second Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge and New York, pp. 77–92, (ISBN 0-521-56437-9). Reprinted as RR-97-1, International Institute for Applied Systems Analysis, Laxenburg, Austria.

- Watson, R., Zinyowera, M.C. (Convening Lead Authors); Acosta Moreno, R., Baron, R., Bohm, P., Chandler, W., Cole, V., Davidson, O., Dutt, G., Haites, E., Ishitani, H., Kruger, D., Levine, M., Zhong, L., Michaelis, L., Moomaw, W., Moreira, J.R., Mosier, A., Moss, R., Nakicenovic, N., Price, L., Ravindranath, N.H., Rogner, H.-H., Sathaye, J., Shukla, P., Williams, T. (Principal Lead Authors): 1996, in Watson, R.T., Zinyowera, M.C., and Moss, R.H. (eds), *Technologies, Policies, and Measures for Mitigating Climate Change: IPCC Technical Paper 1*, Intergovernmental Panel on Climate Change, Working Group II, Cambridge University Press, Cambridge and New York. 84 pp.
- Watson, R. et al., (incl. Nakicenovic, N., and Rogner, H.-H.): 1996, *Summary for Policymakers: Scientific-Technical Analyses of Impacts, Adaptations and Mitigation of Climate Change*, IPCC Working Group II, IPCC Second Assessment: Climate Change 1995, A Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge and New York, pp. 27–42.
- Nakicenovic, N.: 1995a, Long-term energy perspectives, *World Energy Council (WEC) Journal*, **12**(December): 45–51.
- Nakicenovic, N.: 1995b, Comments on Chapter 9 (Modelling future greenhouse gas emissions: The second generation model description), in Klein, L.R., and Lo, Fu-chen (eds), *Modelling Global Change*, United Nations University Press, Tokyo, Japan, pp. 341–354. (ISBN 92-808-0880-X)
- Nakicenovic, N.: 1995c, Technology and climate change, in International Energy Agency (ed), *Development and Deployment of Technologies to Respond to Global Climate Change Concerns*, OECD/IEA, Paris, France, pp. 65–83. (ISBN 92-64 14393-9)
- Nakicenovic, N.: 1995d, Overland transportation networks: History of development and future prospects, in Batten, D., Casti, J. and Thord, R. (eds), *Networks in Action*, Springer-Verlag, Berlin, Germany, pp. 195–228. (ISBN 3-540-58944-9)
- Ausubel, J.H., and Grubler, A.: 1995, Working less and living longer: Long-term trends in working time and time budgets, *Technological Forecasting and Social Change*, **50**(3): 195–213, (ISSN 0040-1625). Reprinted as RR-96-4, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Buettner, T., and Grubler, A.: 1995, The birth of a “green generation”? Generational dynamics of resource consumption patterns, *Technological Forecasting and Social Change*, **50**(2): 113–134, (ISSN 0040-1625). Reprinted as RR-96-3, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Grubler, A., and Kirsch, D.: 1995, Social behavior: Limiting global change or limits for mitigation?, in Speranza, A., Tibaldi, S., and Fantechi, F. (eds), *Global Change, Proceedings of the First Demetra Meeting*, European Commission, Brussels, Belgium, pp. 392–409. (ISBN 92-826-7757-5)
- Grubler, A., and McDonald, A.: 1995, The drive to cleaner energy, *Options*, **3**(Fall/Winter): 8–11.
- Nakicenovic, N., and Labys, C.: 1995, An energy future without carbon, *Siemens-Zeitschrift*, **3**: 4–6. [In German].
- Nakicenovic, N., and Nolan, L.: 1995, Gas may be the answer to the world’s fuel need, *Forum for Applied Research and Public Policy*, **10**(2): 86–88. (ISSN 0887-8218)
- Gilli, P.V., Nakicenovic, N., and Kurz, R.: 1995, First- and second-law efficiencies of the global and regional energy systems, *Proceedings of the 16th World Energy Congress*, Tokyo, 8–13 October 1995, Volume PS/SDR 3.1 Rational Energy End-use Technologies, World Energy Council, London, UK, pp. 229–248.
- Nakicenovic, N., Amann, M., and Fischer, G.: 1995, Integrated assessment, *Options*, **3**(Fall/Winter): 5–7.
- Alcamo, J., Bouwman, A., Edmonds, J., Grubler, A., Morita, T., and Sugandhy, A.: 1995, An evaluation of the IPCC IS92 emission scenarios, in Houghton, J.T., Meira Filho, L.G., Bruce, J., Lee, H., Callander, B.A., Haites, E., Harris, N., and Maskell, K. (eds), *Climate Change 1994*, Reports of Working Groups I and III of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge, UK, pp. 251–304, (ISBN 0 521 550556). Reprinted as RR-95-10, International Institute for Applied Systems Analysis, Laxenburg, Austria.

- Grubler, A.: 1994a, Industrialization as a historical phenomenon, in Socolow, R. (ed.), *Industrial Ecology and Global Change*, University Corporation for Atmospheric Research, Boulder, Colorado, USA, Cambridge University Press, London, UK, pp. 43–68, (ISBN 0 521 47197 4). Reprinted as RR-95-9, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Grubler, A.: 1994b, Energy strategies and CO₂ mitigation, in Fischer, W., and Schuetz, H. (eds), *Social Aspects of Climate Change*, Konferenzen der Forschungszentrum Juelich, (KFA) Juelich, Germany, pp. 36–71. [In German]. (ISBN 3-89336-131-6)
- Grubler, A.: 1994c, Technology and global change: Land-use, past and present, in MeyerW.B., and Turner, B.L. (eds), *Changes in Land Use and Land Cover: A Global Perspective*, Cambridge University Press, London, UK, pp. 287–328. (ISBN 0 521 47085 4)
- Grubler, A.: 1994d, Global energy strategies, *Handbuch der Umwelttechnik 1994*, pp. 50–55. Trend Commerz Gesellschaft mbH, Linz, Austria. [In German]. (ISBN 3-900834-08-3)
- Nakicenovic, N.: 1994, The technical potential for improvement, U.K. Energy Efficiency – Performance and Prospects, *Proceedings of the British Energy Association's Annual Energy Forum*, 14 June 1994, World Energy Council, London, UK, pp. 52–86.
- Messner, S., and Nakicenovic, N.: 1994, The future of natural gas in Europe, *Proceedings of the Energy Technologies to Reduce CO₂ Emissions in Europe: Prospects, Competition, Synergy*, 11–12 April 1994, Petten, The Netherlands, OECD/IEA, Paris, France, pp. 217–237. (ISBN 9264 14308-4)
- Grubler, A.: 1993a, Energy and environment: Post UNCED, in Ghosh, P., and Jaitly, A. (eds), *The Road from Rio: Environment and Development Policy Issues in Asia*, Tata Energy Research Institute, New Delhi, India, pp. 104–112. (ISBN 81-85419-02-7)
- Grubler, A.: 1993b, The transportation sector: Growing demands and emissions, *Pacific and Asian Journal of Energy*, **3**(2): 179–199. Also published in Krishnan, R. (ed.), *Growing Numbers and Dwindling Resources*, Tata Energy Research Institute, New Delhi, India, pp. 44–60, (ISBN 81-85419-08-6). Reprinted as RR-94-5, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N.: 1993a, Carbon dioxide mitigation measures and options, *Environmental Science and Technology*, **27**(10): 1986–1989. (ISSN 0013–936X)
- Nakicenovic, N.: 1993b, Energy gases – the methane age and beyond, in Howell, D.G. (ed.), *The Future of Energy Gases*, United States Government Printing Office, Washington, DC, USA, pp. 661–675. Reprinted as RR-94-8, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N.: 1993c, Energy strategies limiting global carbon dioxide emissions, *Proceedings of the Second Workshop on National Reduction Strategies for Greenhouse Gases*, **2**, Norka-Verlag, Klosterneuburg, Austria, pp. 3–33. (ISBN 3-85126-051-1)
- Grubler, A., Nakicenovic, N., and Schaefer, A.: 1993, *Summary of IPCC/EIS-IIASA International Workshop on Energy-Related Greenhouse Gases Reduction and Removal*, 1–2 October 1992, International Institute for Applied Systems Analysis, Laxenburg, Austria. SR-93-1.
- Sinyak, Y. et al.: 1993, *Energy in the 21st Century: New Challenges and Goals*, International Institute for Applied Systems Analysis, Laxenburg, Austria. CP-93-3.
- Nakicenovic, N.: 1992a, Energy strategies and greenhouse gas emissions, *International Journal of Global Energy Issues*, **4**(4): 247–255. (ISSN 0954-7118)
- Nakicenovic, N.: 1992b, Decarbonizing energy, *Options* (September): 4–13.
- Nakicenovic, N.: 1992c, Developments and prospects for land and air transportation in the next century, *World Energy Council (WEC) Journal*, (July): 57–64.
- Messner, S., and Nakicenovic, N.: 1992, A comparative assessment of different options to reduce CO₂ emissions, in Blok, K., Turkenburg, W.C., Hendriks, C.A., and Steinberg, M. (eds), *Proceedings of the First International Conference on Carbon Dioxide Removal*, 4–6 March 1992, Amsterdam, The

Netherlands, Pergamon Press, Oxford, UK, pp. 763–771, (ISSN 0196-8904). Also published in *Energy Conversion and Management*, **33**(5-8): 763-771. Reprinted as RR-93-15, International Institute for Applied Systems Analysis, Laxenburg, Austria.

Grubler, A., Nakicenovic, N., and Schaefer, A.: 1992, *Dynamics of Transport and Energy Systems: History of Development and a Scenario for the Future*, World Energy Council (WEC) 15th Congress, Division 3 Energy and Development, Technical Session 3.3, pp. 219-240, World Energy Council, Madrid, Spain. Reprinted as RR-93-19, International Institute for Applied Systems Analysis, Laxenburg, Austria.

Grubler, A.: 1991a, Energy in the 21st century: From resource to environmental and lifestyle constraints, *Entropie*, **164/165**: 29–33.

Grubler, A.: 1991b, Introduction to diffusion theory, in Ayres, R., Haywood, W., and Tchijov, I. (eds), *Computer Integrated Manufacturing*, Vol. 3: Models, Case Studies and Forecasts of Diffusion, Chapman and Hall, London, UK, pp. 3–52. (ISBN 0 412 40460 5)

Grubler, A.: 1991c, Diffusion: Long-term patterns and discontinuities, *Technological Forecasting and Social Change*, **39**(1–2): 159–180. (ISSN 0040-1625)

Nakicenovic, N.: 1991, Diffusion of pervasive systems: A case of transport infrastructures, *Technological Forecasting and Social Change*, **39**(1–2): 181–200. (ISSN 0040-1625)

Grubler, A., and Foray, D.: 1991, Morphological analysis, diffusion and technological evolution, in De Bandt, J., and Foray, D. (eds), *Economic Evaluation of R&D and of Technological Change*, Editions du CNRS, Paris, France, pp. 205–227. [In French]. (ISBN 2-222-04577-0)

Grubler, A., and Fujii, Y.: 1991, Inter-generational and spatial equity issues of carbon accounts, *Energy – The International Journal*, **16**(11–12): 1397–1416, (ISSN 0360-5442). Reprinted as RR-92-6, International Institute for Applied Systems Analysis, Laxenburg, Austria.

Grubler, A., and Nakicenovic, N.: 1991, Long waves, technology diffusion, and substitution, *Review*, **14**(2): 313–342. Published also in Freeman, C. (ed.), *Long Wave Theory*, The International Library of Critical Writing in Economics Series, Edward Elgar Publishing Ltd., UK, 1996, pp. 424–456, (ISBN 1-85278-954-9). Reprinted as RR-91-17, International Institute for Applied Systems Analysis, Laxenburg, Austria.

Nakicenovic, N., and John, A.: 1991, CO₂ reduction and removal: Measures for the next century, *Energy – The International Journal*, **16**(11–12): 1347–1377, (ISSN 0360-5442). Reprinted as RR-92-4, International Institute for Applied Systems Analysis, Laxenburg, Austria.

Grubler, A.: 1990a, Technology diffusion in a long-wave context: The case of the steel and coal industries, in Vasko, T., Ayres, R.U., and Fontvielle, L. (eds), *Life Cycles and Long Waves*, Springer-Verlag, Berlin, Germany, pp. 117–146. (ISBN 3-540-52473-8)

Grubler, A.: 1990b, Long-term energy perspectives and the potential role of natural gas, *Gas-Eaux-Eaux Usees*, **4**: 259–272. [In French].

Nakicenovic, N.: 1990, Dynamics of change and long waves, in Vasko, T., Ayres, R.U., and Fontvielle, L. (eds), *Life Cycles and Long Waves*, Springer-Verlag, Berlin, Germany, pp. 147–192. (ISBN 3-540-52473-8)

Grubler, A., and Nakicenovic, N.: 1990, Development of energy and transport systems, in Rogner, H.-H., Khan, A.M., and Furlan, G. (eds), *Economics, Modelling, Planning and Management of Energy*, World Scientific, Singapore, pp. 80–115. (ISBN 9971509490)

Grubler, A., and Nowotny, H.: 1990, Towards the fifth Kondratiev upswing: Elements of an emerging new growth phase and possible development trajectories, *International Journal of Technology Management*, **5**(4): 431–471. Published also in Freeman, C. (ed.), *Long Wave Theory*, The International Library of Critical Writing in Economics Series, Edward Elgar Publishing Ltd., UK, 1996, pp. 631–672, (ISBN 1-85278-954-9). Reprinted as RR-90-7, International Institute for Applied Systems Analysis, Laxenburg, Austria.

- Lee, T., and Nakicenovic, N.: 1990, Technology life cycles and business decisions, in Vasko, T., Ayres, R.U., and Fontvielle, L. (eds), *Life Cycles and Long Waves*, Springer-Verlag, Berlin, Germany, pp. 1–17. (ISBN 3-540-52473-8)
- Astakhov, A., Grubler, A., and Mookhin, A.: 1990, Technology diffusion in the coal-mining industry of the USSR: An interim assessment, *Technological Forecasting and Social Change*, **38**(3): 223–256, (ISSN 0040-1625). Reprinted as RR-91-4, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Grubler, A., Buettner, T., and Heilig, G.: 1990, Self-organizing dynamics, consequences of the GDR integration, *Bild der Wissenschaft*, **11**: 136–139. [In German].
- Grubler, A.: 1989, Long-term energy perspectives and the potential role of natural gas, *Gas-Eaux-Eaux Usees*, **12**: 763–777. [In German].
- Nakicenovic, N.: 1989, Expanding territories: Transport systems past and future, in Batten, D.F., and Thord, R. (eds), *Transportation for the Future*, Springer-Verlag, Berlin, Germany, pp. 43–66. (ISBN 3-540-51347-7)
- Nakicenovic, N.: 1988a, Technological Substitution and Long Waves in the USA, in Vasko, T. (ed.), *The Long Wave Debate*, Springer-Verlag, Berlin and New York. (ISBN 0-3871-8164-4)
- Nakicenovic, N.: 1988b, Dynamics and Replacement of US Transport Infrastructures, in Ausubel, J.H., and Herman, R. (eds), *Cities and Their Vital Systems, Infrastructure Past, Present and Future*, National Academy Press, Washington, DC, USA, pp. 175–221. (ISBN 0-3090-3786-7)
- Nakicenovic, N., and Grubler, A.: 1988, The Dynamic Evolution of Methane Technologies, in Lee, T.H. et al. (eds), *The Methane Age*, Kluwer Academic Publishers, New York, pp. 13–44, (ISBN 9-0277-2745-7). Also published as WP-87-2, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Ausubel, J.H., Grubler, A., and Nakicenovic, N.: 1988, Carbon dioxide emissions in a methane economy, *Climatic Change*, **12**: 245–263, (ISSN 0165-0009). Reprinted as RR-88-7, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N.: 1986, The automobile road to technological change: Diffusion of the automobile as a process of technological substitution, *Technological Forecasting and Social Change*, **29**: 309–340, (ISSN 0040-1625). Also published as RR-87-1 and WP-85-19, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N., Rogner, H.-H., and Schrattenholzer, L.: 1982, Energy of the next fifty years, *Energiewirtschaftliche Tagesfragen*. [In German]. (ISSN 0720-6240)
- Nakicenovic, N., Haefele, W., and Rogner, H.-H.: 1981, Useful regenerative energy sources of the world, *VDI Report*, No. 405, Verband Deutscher Ingenieure, Duesseldorf, Germany. Also published in *Brennstoff-Waerme-Kraft*, Heft Nr. **05/1981**, VDI Verlag, Duesseldorf, Germany. [In German].
- Nakicenovic, N., and Avenhaus, R.: 1979, Significant thresholds of one-sided tests for means of bivariate normally distributed variables (Annex: Numerical calculations), *Communications in Statistics: Theory and Methods*, **A8**(3). (ISSN 0361-0926)
- Nakicenovic, N., and Marchetti, C.: 1978, Primary energy substitution model on the interaction between energy and society (Appendix: Methods of calculation), *Chemical Economy and Engineering Review*, **7**(8), (ISSN 0009-2436). Also published as WP-75-88, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N., Beaujean, J.M., and Charpentier, J.P.: 1977, Global and international energy models: A survey, *Annual Review of Energy*, **2**. (ISSN 0362-1626)
- Nakicenovic, N., Haefele, W., and Schikorr, M.: 1977, Some aspects of the nuclear fuel cycle on the man-made energy islands, phases I and II considerations, in *Nuclear Waste Storage and the Energy Island, A New Possibility for Action*.

IIASA Research Reports

- Wilson, C., and Grubler, A.: 2011, Lessons from the history of technology and global change for the emerging clean technology cluster. IIASA Interim Report IR-11-001, International Institute for Applied Systems Analysis, Laxenburg, Austria. [January 2011, 46 pp]
- Grubler, A.: 2006, Doing more with less: Improving the environment through green engineering, *RP-06-005*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Environment*, **48**(2): 22–37.
- Cox, P., and Nakicenovic, N.: 2004, Assessing and simulating the altered functioning of the earth system in the anthropocene, *RR-04-14*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from Schellnhuber, H.-J., Crutzen, P.J., Clark, W.C., Claussen, M., and Held, H. (eds), *Earth System Analysis for Sustainability, Dahlem Workshop Report Series* (DWR 91), MIT Press, pp. 293–312. (ISBN 0–262–19513–5)
- Riahi, K., Rubin, E.S., Taylor, M.R., Schrattenholzer, L., and Hounshell, D.: 2004, Technological learning for carbon capture and sequestration technologies, *RR-04-12*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Energy Economics*, **26**(4): 539–564.
- Steffen, W., Andreae, M.O., Bolin, B., Crutzen, P.J., Cox, P., Cubasch, U., Held, H., Nakicenovic, N. et al.: 2004, Abrupt changes: The Achilles heels of the earth system, *RR-04-006*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Environment*, **46**(3): 8–20. (ISSN 0013–9157)
- Grubler, A.: 2004, Transitions in energy use, *RR-04-005*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Encyclopedia of Energy*, **6**: 163–177. (ISSN 0–12–176480–X)
- Klaassen, G., Miketa, A., Riahi, K., and Schrattenholzer, L.: 2004, Targeting technological progress towards sustainable development, *RR-04-001*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Energy and Environment*, **13**(4–5): 553–578.
- Barreto, L., Makihira, A., and Riahi, K.: 2003, The hydrogen economy in the 21st century: A sustainable development scenario, *RR-03-001*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *International Journal of Hydrogen Energy*, **28**(3): 267–284.
- Nakicenovic, N., and Riahi, K.: 2002, An assessment of technological change across selected energy scenarios, *RR-02-005*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from a publication by the World Energy Council (WEC) on behalf of the Study Group on Energy Technologies for the 21st Century, September 2001.
- Grubler, A.: 2002, Trends in global emissions: Carbon, sulfur, and nitrogen, *RR-02-004*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Encyclopedia of Global Environmental Change*, **3**: 35–53. (ISBN 0471–97796–9)
- Victor, D.G., Nakicenovic, N., and Victor, N.: 2001, The Kyoto Protocol emission allocations: Windfall surpluses for Russia and Ukraine, *RR-01-10*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Climatic Change*, **49**(3): 263–277. (ISSN 0165–0009)
- Kates, R.W., Clark, W.C., Corell, R., Grubler, A., Hall, J.M. et al.: 2001, Sustainability science, *RR-01-07*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Science*, **292**(5517): 641–642.
- Gritsevskyi, A., and Nakicenovic, N.: 2000, Modeling uncertainty of induced technological change, *RR-00-24*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Energy Policy*, **28**(13): 907–921. (ISSN 0301–4215)
- Nakicenovic, N.: 2000, Global greenhouse gas emissions scenarios: Integrated modeling approaches, *RR-00-19*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Technological Forecasting and Social Change*, **63**(2–3): 105–109. (ISSN 0040–1625)

- Nakicenovic, N., and Grubler, A.: 2000, Energy and the protection of the atmosphere, *RR-00-18*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from the *International Journal of Global Energy Issues*, **13**(1–3): 4–57. (ISSN 0954–7118)
- Grubler, A.: 2000, Managing the global environment, *RR-00-12*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Environmental Science and Technology*, **34**(7): 184A–187A. (ISSN 0013–936X)
- Grubler, A., Nakicenovic, N., and Victor, D.G.: 2000, Modeling technological change: Implications for the global environment, *RR-00-3*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Annual Review of Energy Environment*, **24**: 545–569. (ISSN 1056–3466)
- Grubler, A.: 1999, Long-term energy futures: The critical role of technology, *RR-00-2*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Revue de l'Energie*, **508**(July–August): 373–384. (ISSN 0303–240)
- Grubler, A., Nakicenovic, N., and Victor, D.G.: 1999, Dynamics of energy technologies and global change, *RR-99-7*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Energy Policy*, **27**: 247–280. (ISSN 0301-4215)
- Grubler, A.: 1999, A review of global and regional sulfur emission scenarios, *RR-99-5*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Mitigation and Adaptation Strategies for Global Change*, **3**(2–4): 383–418, Kluwer Academic Publishers, Dordrecht, the Netherlands.
- Grubler, A., and Messner, S.: 1999, Technological change and the timing of mitigation measures, *RR-99-1*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Energy Economics*, **20**(5–6). (ISSN 0140–9883)
- Nakicenovic, N., Victor, N., and Morita, T.: 1999, Emissions scenarios database and review of scenarios, *RR-99-4*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Mitigation and Adaptation Strategies for Global Change*, **3**(2–4): 95–120, Special Issue. Kluwer Academic Publishers, Dordrecht, the Netherlands. (ISSN 1381–2386)
- Foray, D., and Grubler, A.: 1997, Technology and the environment: An overview, *RR-97-5*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Technological Forecasting and Social Change*, **53**(1): 3–13 (1996). (ISSN 0040–1625)
- Grubler, A.: 1997, Time for a change: On the patterns of diffusion of innovation, *RR-97-3*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Daedalus*, **125**(3): 19–42 (1996).
- Grubler, A., and Nakicenovic, N.: 1997, Decarbonizing the global energy system, *RR-97-6*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Technological Forecasting and Social Change*, **53**(1): 97–110 (1996). (ISSN 0040–1625)
- Nakicenovic, N.: 1997, Freeing energy from carbon, *RR-97-4*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Daedalus*, **125**(3): 95–112 (1996), (ISSN 0011–5266). Published in Ausubel, J.H., and Langford, H.D. (eds), 1997, *Technological Trajectories and the Human Environment*, National Academy Press, Washington, DC, pp.74–88, (ISBN 0–309–05133–9). Published also in *Chemical Industry*, Journal of the Federation of Chemists and Technologists of Yugoslavia, **53**(12): 434–441 (1999).
- Messner, S., Golodnikov, A., and Gritsevskyi, A.: 1997, A stochastic version of the dynamic linear programming model MESSAGE III, *RR-97-2*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Energy*, **21**(9): 775–784 (1996).
- Nakicenovic, N., Grubler, A., Ishitani, H., Johansson, T., Marland, G., Moreira, J.R., and Rogner, H.-H.: 1997, Energy primer, *RR-97-1*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Climate Change*, 1995, pp. 75–92, IPCC.

- Rogner, H.-H.: 1997, An assessment of world hydrocarbon resources, *RR-98-6*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Annual Review of Energy and the Environment*, **22**: 217–262.
- Ausubel, J.H., and Grubler, A.: 1996, Working less and living longer: Long-term trends in working time and time budgets, *RR-96-4*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Technological Forecasting and Social Change*, **50**(3): 195–213. (ISSN 0040–1625)
- Buettner, T., and Grubler, A.: 1996, The birth of a “green generation”? Generational dynamics of resource consumption patterns, *RR-96-3*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Technological Forecasting and Social Change*, **50**(2): 113–134. (ISSN 0040–1625)
- Nakicenovic, N., and Rogner, H.-H.: 1996, Financing global energy perspectives to 2050, *RR-96-9*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *OPEC Review*, **20**(1): 1–24.
- Gilli, P.V., Nakicenovic, N., and Kurz, R.: 1996, First- and second-law efficiencies of the global and regional energy systems, *RR-96-2*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *More Efficient Use of Energy, Division 3 of Energy for Our Common World*, Proceedings of the 16th WEC Congress, World Energy Council, 8–13 October 1995, Tokyo.
- Grubler, A., Jefferson, M., and Nakicenovic, N.: 1996, Global energy perspectives: A summary of the joint study by IIASA and World Energy Council, *RR-96-10*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Technological Forecasting and Social Change*, **51**(3): 237–264. (ISSN 0040–1625)
- Alcamo, J., Bouwman, A., Edmonds, J., Grubler, A., Morita, T., and Sugandhy, A.: 1995, An evaluation of the IPCC IS92 emission scenarios, *RR-95-10*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from Houghton, J.T. et al., *Climate Change 1994*, Intergovernmental Panel on Climate Change and Cambridge University Press, Cambridge, UK, pp. 251–304.
- Grubler, A.: 1995, Industrialization as historical phenomenon, *RR-95-9*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from Socolow, R., Andrews, C., Berkhout, F., and Thomas, V. (eds), 1994, *Industrial Ecology and Global Change*, Cambridge University Press, Cambridge UK, pp. 43–68. (ISBN 0521577837)
- Grubler, A.: 1994, The transportation sector: Growing demand and emissions, *RR-94-5*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Pacific and Asian Journal of Energy*, **3**(2): 179–199.
- Nakicenovic, N.: 1994, Energy gases – the methane age and beyond, *RR-94-8*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from Howell, D.G. (ed.), *The Future of Energy Gases*, United States Government Printing Office, Washington DC, USA, pp. 661–675.
- Grubler, A., and Nakicenovic, N.: 1994, International burden sharing in greenhouse gas reduction, *RR-94-9*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Revised version of Grubler, A., and Nakicenovic, N., 1992, *International Burden Sharing in Greenhouse Gas Reduction*, Environment Working Paper 55, The World Bank, Washington DC, USA.
- Grubler, A., Nakicenovic, N., and Schaefer, A.: 1993, Dynamics of transport and energy systems: History of development and a scenario for the future, *RR-93-19*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Messner, S., and Nakicenovic, N.: 1993, A comparative assessment of different options to reduce CO₂ emissions, *RR-93-15*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Energy Conversion and Management*, **33**(5-8): 763–771. (ISSN 0196–8904)
- Nakicenovic, N., Grubler, A., Inaba, A., Messner, S., Nilsson, S., Nishimura, Y., Rogner, H.-H., Schaefer, A., Schrattenholzer, L., Strubegger, M., Swisher, J., Victor, D., and Wilson, D.: 1993, Long-term strategies for mitigating global warming, *RR-93-11*, International Institute for Applied Systems Analysis,

Laxenburg, Austria. Reprinted from *Energy – The International Journal*, **18**(5): 401–609. (ISSN 0360–5442)

Grubler, A., and Fujii, Y.: 1992, Inter-generational and spatial equity issues of carbon accounts, *RR-92-6*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Energy – The International Journal*, **16**(11–12): 1397–1416. (ISSN 0360–5442)

Nakicenovic, N., and John, A.: 1992, CO₂ reduction and removal: Measures for the next century, *RR-92-4*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Energy – The International Journal*, **16**(11–12): 1347–1377. (ISSN 0360–5442)

Grubler, A., and Foray, D.: 1991, Morphological analysis, diffusion and lock-out of technologies: Ferrous casting in France and the FRG, *RR-91-1*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Research Policy*, **19**(6): 535–550.

Grubler, A., and Nakicenovic, N.: 1991, Evolution of transport systems: Past and future, *RR-91-8*, International Institute for Applied Systems Analysis, Laxenburg, Austria.

Nakicenovic, N., and Grubler, N.: 1991, Long waves, technology diffusion, and substitution, *RR-91-17*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Review*, **14**(2): 313–342. Published also in Freeman, C. (ed.), *Long Wave Theory*, The International Library of Critical Writing in Economics Series, pp. 424–456, Edward Elgar Publishing Ltd., UK, 1996. (ISBN 1-85278-954-9)

Astakhov, A., Grubler, A., and Mookhin, A.: 1991, Technology diffusion in the coal-mining industry of the USSR: An interim assessment, *RR-91-4*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Technological Forecasting and Social Change*, **38**(3): 223–256. (ISSN 0040–1625)

Grubler, A., and Nowotny, H.: 1990, Towards the fifth Kondratieff upswing: Elements of an emerging new growth phase and possible development trajectories, *RR-90-7*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *International Journal of Technology Management*, **5**(4): 431–471. Published also in Freeman, C. (ed.), *Long Wave Theory*, The International Library of Critical Writing in Economics Series, pp. 424–456, Edward Elgar Publishing Ltd., UK, 1996. (ISBN 1-85278-954-9)

Ausubel, J.H., Grubler, A., and Nakicenovic, N.: 1988, Carbon dioxide emissions in a methane economy, *RR-88-7*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Reprinted from *Climatic Change*, **12**: 245–263. (ISSN 0165–0009)

Nakicenovic, N.: 1979, Software package for the logistic substitution model, *RR-79-12*, International Institute for Applied Systems Analysis, Laxenburg, Austria.

Nakicenovic, N., and Marchetti, C.: 1979, The dynamics of energy systems and the logistic substitution model, *RR-79-13*, International Institute for Applied Systems Analysis, Laxenburg, Austria. Also published in *IIASA Reports*, **1**(1), January–March 1980.

Nakicenovic, N., Marchetti, C., Peterka, V., and Fleck, F.: 1978, The dynamics of energy systems and the logistic substitution model. Vol. 1: Phenomenological part, *AR-78-1B*; Vol. 2: Theoretical part, *AR-781C*; Executive summary, *AR-781A*. International Institute for Applied Systems Analysis, Laxenburg, Austria.

Nakicenovic, N., and Avenhaus, R.: 1975, Material accountability and its verification: A special example of multivariate statistical inference. *RR-75-25*, International Institute for Applied Systems Analysis, Laxenburg, Austria.

IIASA Interim Reports/Working Papers

Bazilian, M., Nussbaumer, P., Cabraal, A., Centurelli, R., Detchon, R., Gielen, D., Rogner, H-H., Howells, M., McMahon, M., Modi, V., Nakicenovic, N., O'Gallachoir, B., Radka, M., Rijal, K., Takada, M., Ziegler, F.: 2010, Measuring energy access: Supporting a global target. Conference Paper from the Expert Meeting

- Galvanising political commitment for universal energy access, Columbia University, March, 31, 2010. http://www.unido.org/fileadmin/user_media/Services/Energy_and_Climate_Change/EPP/Publications/bazilian%20et%20al%202010%20measuring%20energy%20access%20supporting%20a%20global%20target.pdf.
- Grübler, A.: 2010, Costly lessons of nuclear scale-up, *Options*, (IIASA, Laxenburg, Austria), Winter 2010/2011, pp. 25. www.iiasa.ac.at/Options.
- Grübler, A., and Riahi, K.: 2010, Getting the right balance in energy R&D portfolios, *Options*, (IIASA, Laxenburg, Austria), Winter 2010/2011, pp. 18. www.iiasa.ac.at/Options.
- Karner, A., Koller, S-C., Kettner, C., Kletzan-Slamanig, D., Koepli, A., Leopold, A., Lang, R., Nakicenovic, N., Reinsberger, K., Resch, G., Schleicher, S., Schnitzer, H., and Steininger, K.: 2010, Nationaler Aktionsplan 2010 fuer erneuerbare Energien fuer Oesterreich. Bundesministerium fuer Wirtschaft, Familie und Jugend (BMWFJ), Vienna, Austria (30 June 2010). http://ec.europa.eu/energy/renewables/transparency_platform/doc/national_renewable_energy_action_plan_austria_de.pdf.
- Nakicenovic, N.: 2010, Energizing the global MDG effort, *Options*, (IIASA, Laxenburg, Austria), Summer 2010, pp. 18–19. Available at www.iiasa.ac.at/Options.
- Rafaj, P., Rao, S., Klimont, Z., Kolp, P., and Schöpp, W.: 2010, Emissions of air pollutants implied by global long-term energy scenarios. IIASA Interim Report IR-10-019, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Riahi, K.: 2010, Clean energy: Multiple benefits, *Options*, (IIASA, Laxenburg, Austria), Winter 2010, pp. 12–13. www.iiasa.ac.at/Options.
- Schulz, N.: 2010, Urban energy consumption database and estimations of urban energy intensities. Global Energy Assessment (GEA) Knowledge Module 18 working paper. International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria.
- Schulz, N.: 2010, Accounting for a city's carbon footprint, *Options*, (IIASA, Laxenburg, Austria), Winter 2010/2011, pp. 24. www.iiasa.ac.at/Options.
- von Winterfeldt, D., and Nakicenovic, N.: 2010, Energy & climate change, *Options*, (IIASA, Laxenburg, Austria), Winter 2010/2011, pp. 6–7. www.iiasa.ac.at/Options.
- Zhu, B., and Ma, T.: 2010, Ammonia's greener potential, *Options*, (IIASA, Laxenburg, Austria), Summer 2010/2011, pp. 24. Available at www.iiasa.ac.at/Options
- Ekholm, T., Krey, V., Pachauri, S., and Riahi, K.: 2009, Modelling household energy access in India, IIASA Interim Report IR-09-007, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Grubler, A.: 2009, An assessment of the costs of the French nuclear PWR program 1970–2000, IIASA Interim Report IR-09-036, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Krey, V., and Riahi, K.: 2009, Risk Hedging Strategies under Energy System and Climate Policy Uncertainties, IIASA Interim Report IR-09-028, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Macknick, J.: 2009, Energy and carbon dioxide emission data uncertainties, IIASA Interim Report IR-09032, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Wilson, C.: 2009, Meta-analysis of unit and industry level scaling dynamics in energy technologies and Climate Change Mitigation Scenarios, Interim Report IR-09-029, International Institute for Applied Systems Analysis, Laxenburg, Austria
- Ma, T., Grubler, A., Nakicenovic, N., Arthur, W.B.: 2008, Technologies as agents of change: A simulation model of the evolving complexity of the global energy system, IR-08-021, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Ma, T., Nakamori, Y. (2008). Coping with uncertainties in endogenous technological change models, *Proceedings of the IEEE International Conference on Systems, Man, and Cybernetics*, October 2008,

- Singapore, pp. 845-850, (ISBN 978-92-7907-622-0), http://ec.europa.eu/research/social-sciences/pdf/towards_post_carbon_society_en.pdf
- Rao, S., Riahi, K., Stehfest, E., van Vuuren, D.P., Cho, C., den Elzen, M.G.J., Isaac, M., van Vliet, J. (2008). IMAGE and MESSAGE Scenarios Limiting GHG Concentration to Low Levels, Interim Report IR-08-020, International Institute for Applied Systems Analysis, Laxenburg, Austria
- Greenblatt, J.B., Socolow, R.H., Riahi, K. (2006). Wedge decomposition analysis: Application to SRES and post-SRES scenarios, In: *The 8th Greenhouse Gas Technology Conference (GHGT8)*, 9-22 June 2006, Trondheim, Norway
- Ma, T.: 2006, An agent-based model of endogenous technological change: An extension to the Grubler–Gritsevskyi model, *IR-06-044*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Riahi, K., Grubler, A., Nakicenovic, N.: 2006, IIASA Greenhouse Gas Initiative (GGI) longterm emissions and climate stabilization scenarios, *IR-06-018*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Devezas, T.C.: 2005, Evolutionary theory of technological change: Discussion of missing points and promising approaches, *IR-05-047*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Arthur, W.B.: 2005, Out-of-equilibrium economics and agent-based modeling, *IR-05-046*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nemet, G.F.: 2005, Technical change in photovoltaics and the applicability of the Learning Curve Model, *IR-05-029*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N., Ajanovic, A., and Kimura, O.: 2005, Global scenarios for the energy infrastructure development, *IR-05-028*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Riahi, K., L. Barreto, S. Rao: 2004, Long-term perspectives for carbon capture in power plants: Scenarios for the 21st century, *IR-04-032*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Makihira, A., L. Barreto, K. Riahi: 2003, Assessment of alternative hydrogen pathways: Natural gas and biomass, *IR-03-037*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Obersteiner, M., C. Azar, K. Moellersten, K. Riahi, J. Moreira *et al.*: 2002, Biomass energy, carbon removal and permanent sequestration - A 'real option' for managing climate risk, *IR-02-042*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Klaassen, G., A. Grubler, and L. Schrattenholzer: 1999, Towards New Energy Infrastructures in Eurasia: A Background Paper, *IR-99-17*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N.: 1998, Energy perspectives for Eurasia and the Kyoto protocol, *IR-98-67*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Victor, D.G., N. Nakicenovic, and N. Victor: 1998, The Kyoto Protocol carbon bubble: Implications for Russia, Ukraine and emission trading, *IR-98-94*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N. and M. Jefferson: 1995, Global energy perspectives to 2050 and beyond, *WP-95-127*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Grubler, A., M. Jefferson, and N. Nakicenovic: 1995, A summary of the joint IIASA and WEC study on long-term energy perspectives, *WP-95-102*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N. and H.-H. Rogner: 1995, Global financing needs for long-term energy perspectives, *WP-95-101*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Golodnikov, A., A. Gritsevskyi, and S. Messner: 1995, A stochastic version of the dynamic linear programming model MESSAGE III, *WP-95-94*, International Institute for Applied Systems Analysis, Laxenburg, Austria.

- Grubler, A.: 1995a, Time for a change: Rates of diffusion of ideas, technologies and social behaviors, *WP-95-82*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Grubler, A.: 1995b, Industrialization as historical phenomenon, *WP-95-29*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Grubler, A.: 1994, A comparison of global and regional energy emission scenarios, *WP-94-132*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Ausubel, J.H. and A. Grubler: 1994, Working less and living longer: Long-term trends in working time and time budgets, *WP-94-99*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Buettner, T. and A. Grubler: 1994, The birth of a "green generation"? Generational dynamics of resource consumption patterns, *WP-94-79*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N.: 1993a, Decarbonization: Doing more with less, *WP-93-76*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N.: 1993b, Energy gases: The methane age and beyond, *WP-93-33*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Messner, S. and N. Nakicenovic: 1992, A comparative assessment of different options to reduce CO₂ emissions, *WP-92-27*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Grubler, A.: 1992, Technology and global change: Land-use, past and present, *WP-92-2*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Grubler, A., and Nakicenovic, N.: 1992, *International burden sharing in greenhouse gas reduction*, Working Paper 55, Environmental Policies and Research Division, The World Bank, Washington, DC, USA.
Revised version reprinted as RR-94-9, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N.: 1992, Energy strategies of mitigating global change, *WP-92-1*, International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N., and Grubler, A.: 1987, The Dynamic Evolution of Methane Technologies. *WP-87-02*. International Institute for Applied Systems Analysis, Laxenburg, Austria. Published in T.H., Lee, *et al.* (eds), *The Methane Age*, Kluwer Academic Publishers, New York, pp. 13-44. (ISBN 9-0277-2745-7)
- Nakicenovic, N.: 1987, Transportation and Energy Systems in the U.S. *WP-87-01*. International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N.: 1985, Patterns of Change: Technological Substitution and Long Waves in the United States. *WP-85-50*. Note: WP-86-13 also has same title. International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N. and L. Schrattenholzer: 1985, The Value of Oil Price Projections. *WP-85-68*. International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N. and M. Strubegger: 1984, Model of European Natural Gas Production, Trade and Consumption. *WP-84-53*. International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N. and J. Casti: 1983, The World Automotive Industry in Transition: A Framework for Projection into the 21st Century. *WP-83-2*. International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N. and S. Messner: 1982, Solar Energy Futures in a Western European Context. *WP-82-126a* and *WP-82-126b*. International Institute for Applied Systems Analysis, Laxenburg, Austria.

Other Papers and Publications

- Nakicenovic, N. (Contributor) (2010). Energy for a Sustainable Future. The Secretary-General's Advisory Group on Energy and Climate Change (AGECC). Summary and Recommendations; 28 April 2010, New York, United States. Available at
www.un.org/chinese/millenniumgoals/pdf/AGECCsummaryreport%5B1%5D.pdf
- Nakicenovic, N., Schulz, N.B. (Contributors) (2010). Climate Policy Post-Copenhagen: A Three-Level Strategy for Success. German Advisory Council on Climate Change; WGBU Policy Paper No. 6 (April 2010). ISBN:978-3-936191-35-6. Available at www.wbgu.de/wbgu_pp2010_en.pdf.
- Grubler, A., Pachauri, S. (2009). Problems with burden-sharing proposal among one billion high emitters (Letter), 106(43):E122-E123 (27 October 2009), doi:10.1073/pnas.0909994106
- Hurtt,G.C., Chini, L.P., Frolking, S., Betts, R., Fedema, J., Fischer, G., Kindermann, G., Kinosita, T., Riahi, K., Sheviakova, E., Smith, S., van Vuuren, D.P., Wang, Y.P. et al., (2009). Harmonisation of global land-use scenarios for the period 1500-2100 for IPCC-AR5, In: *Reissell A, iLEAPS Newsletter No. 7*, iLEAPS, Helsinki, Finland pp. 6-8, www.ileaps.org/index.php?option=com_docman&Itemid=186, XO-09-006
- Lamarque J-F., Granier, C., Bond, T., Eyring, V., Heil, A., Kainuma, M., Lee, D., Liousse, C., Mieville, A., Riahi, K., Schultz, M., Smith, S., Stehfest, E., Stevenson, D., Thomson, A., Van Aardenne, J., Van Vuuren, D.P. (2009). Gridded emissions in support of IPCC AR5, *International Global Atmospheric Chemistry Newsletter*, Issue No. 41, May 2009,
http://www.igac.noaa.gov/newsletter/igac41/May_2009_IGAC_41.pdf, XO-09-004
- Nakicenovic, N. (2009). How much technological change, research and development is enough? In: *Second Conference and Conference Volume on The Economics of Technologies to Combat Global Warming*, Snowmass, CO, USA, www.iiasa.ac.at/Research/TNT/WEB/Workshops/tech09.html, XO-09-005
- Nakicenovic, N., Gebetsroither, B., Kettner, C., Lang, R., Schleicher, S.P., et al., (2009). Energiestrukturen für 2020, *Technisches Basisdokument für die österreichische Energiestrategie*, Austrian Institute for Economic Research (WIFO), Wegener Center for Climate and Global Change, Vienna University of Technology, Austria, KWI Consultants, Montantuniversitaet Leoben, Technical University Graz, pp. 51.
http://www.energiestrategie.at/images/stories/pdf/08_wifo_oesbasisdokument.pdf
- O'Neill, B.C., Nakicenovic, N. (2009 Reprint). Learning from global emissions scenarios, Environmental Research Letters, 3 (2008):045014, 9pp, doi:10.1088/1748-9326/3/4/045014
- Winiwarter, W., Steindl, C., Sporer, M., Roediger-Schluga, T., Gebetsroither, E., Nakicenovic, N., Mueller, A., Huber, C., Ramusch, M., Froehlich, M., Amon, B., Ajanovic, A.: 2009, reclip:tom - Research for climate protection: Technological options for mitigation, Annual Report, Austrian Research Centers-ARC Seibersdorf, Endbericht zu Projekt Nr. 1.S2.00007.0.0, Vol 6 (September).
http://eeg.tuwien.ac.at/research/downloads/PR_83_AIT_F&PD_Vol_6_reclip_tom_final_report.pdf
- Ma, T., and Nakamori, Y.: 2008, *Coping with uncertainties in endogenous technological change model*, Paper presented at the IEEE International Conference on Systems, Man, and Cybernetics, October 2008, Singapore, pp. 845–850.
- Nakicenovic, N.: 2008, *The changing world: Energy perspectives and climate change*, Paper presented at the Global Economic Symposium, 4–5 September 2008, Ploen Castle, Germany.
- Nakicenovic, N.: 2008, *The changing world: Energy perspectives and climate change*, Paper presented at the 10. Symposium on Energieinnovation: Energiewende, 15–17 February, 2008, Graz, Austria.
- Bach, B., Biermayer, P., Fricko, O., Haas, R., Nakicenovic, N. et al., (2007). *Strategy Process Energy 2050: Intermediate Phase of Research Programme*, Federal Ministry for Transport, Innovation and Technology (BMVIT), Vienna, Austria, pp. 84.
- Furukawa, M. (2007). Economic and Environmental Performance of Natural Gas and Hydrogen Fueled Decentralized Energy Systems toward 2050, Final Report submitted to the Tokyo Gas Co. Ltd., Japan

International Institute for Applied Systems Analysis (2007). Global Energy Assessment: Confronting the Challenges of Energy for Sustainable Development, International Institute for Applied Systems Analysis, Laxenburg, Austria

Nakicenovic, N.: 2007, *The changing world: energy, climate and social futures*, Paper presented at the 35th Anniversary Conference of IIASA 'Global Development: Science and Policies for the Future', 14 – 15 November, 2007, Vienna, Austria.

Nakicenovic, N.: 2007, *CO₂ emissions pathways compared to long-term CO₂ stabilization scenarios in the literature and IPCC AR4*, Paper prepared for the IEA Conference on World Energy Outlook 2007, 21 November, 2007, Vienna, Austria.

Nakicenovic, N., S. Schleicher, R. Haas *et al.*: 2007, *Assessment of Austrian contribution toward EU 2020 target sharing: Determining reduction targets based on potentials for energy efficiency and renewables for 2020*, in Synthesis Report 'Assessing Austria in the EU 2020 Target Sharing', Energy Economics Group, Vienna University of Technology, WIFO, Vienna, Wegener Centre for Climate and Global Change, Graz, Austria.

Ma, T., 2005: *Modeling technology transitions under increasing returns, uncertainty, and heterogeneous agents*, Proceedings of the 6th International Symposium on Knowledge and Systems Sciences, 29–31 August, 2005, IIASA, Laxenburg, Austria.

Ma, T., 2005: *Modeling endogenous technological change with heterogeneous agents*, Proceedings of the 1st World Congress of the International Federation for Systems Research, 14–17 November, 2005, Kobe, Japan.

Nakicenovic, N.: 2005, *Technological change for stabilizing atmospheric greenhouse gas concentrations*, in Energy Systems of the Future: Challenges and Solutions Paths, Proceedings of the 4th International Energy Economics Conference (IEWT 2005), 16–18 February, 2005, Vienna, Austria.

Gehl, S., H. Haegermark, H. Larsen, M. Morishita, N. Nakicenovic *et al.*: 2005, *Energy end-use technologies for the 21st century*. RISOE International Energy Conference, 23 May, 2005, Roskilde, Denmark.

Nakicenovic, N., A. Grubler, V. Chirkov, and P. Kolp: 2005, *Synthetic fuel technology adoption under climatic constraints in the Asian region*. Research study conducted for the Environmental Research Center (ERC), Tsukuba, Japan. International Institute for Applied Systems Analysis, Laxenburg, Austria.

Winiwarter, W., Amon, B., Froehlich, M., Gebetsroither, E., Mueller, A., and Nakicenovic, N.: 2005, *reclip:tom - Research for climate protection: Technological options for mitigation*, Annual Report 2005, ARC-sys-0074, Vienna University of Technology, Vienna, Austria.

Intergovernmental Panel on Climate Change (IPCC) WGIII, 2005: *IPCC Workshop on New Emission Scenarios, Meeting Report*, 29 June – 1 July, 2005, Laxenburg, Austria.

Intergovernmental Panel on Climate Change (IPCC) WGIII, 2005: *IPCC Expert Meeting on Emission Scenarios*, Hoogwijk, M. (ed.), *Meeting Report*, 12–14 January, 2005, Washington, DC, USA.

Nakicenovic, N.: 2004a, *Future Scenarios, Part II*, in Energy end-use technologies for the 21st century: A report of the World Energy Council. Paper presented at the 19th World Energy Congress, 5–9 September, 2004, Sydney, Australia.

Nakicenovic, N.: 2004b, *Global energy perspectives and the role of new and advanced technologies*. Paper prepared for Energy Symposium of Future Forum Austria, 18 Juni, 2004, Vienna, Austria.

Bernold, T., W. Bibel, K. Bruland, R. Kneucker, N. Nakicenovic *et al.*, 2004: *Converging Technologies for a Diverse Europe*, European Commission Community Research, Conference Report, 14–15 September, 2004, Brussels, Belgium. (ISBN 92-894-8312-1)

Nakicenovic, N., A. Grubler, V. Chirkov, and E. Slentoe: 2004, *Long-term scenarios of greenhouse gas emissions in the Asian region*. Research study conducted for the Environmental Research Center (ERC), Tsukuba, Japan. International Institute for Applied Systems Analysis, Laxenburg, Austria.

- Nakicenovic, N.: 2003a, *The role of new and advanced energy technologies in global energy perspectives*. Paper prepared for a High-Level Energy Symposium, 25 November, 2003, Koninklijke Militaire School, Brussels, Belgium.
- Nakicenovic, N.: 2003b, *Global energy perspectives and the role of technology*, in Realitaet und Vision der oekologischen Stromversorgung, Proceedings of 41. International Conference of the Austrian Society of Power Engineering in Austrian Electrotechnical Association (Oesterreichische Gesellschaft fuer Energietechnik im OVE), 5–6 November 2003, Salzburg, Austria. CD ROM.
- Nakicenovic, N.: 2003c, *Technology strategies for a carbon constrained world*, in Delivering climate technology programmes, policies and politics, Proceedings of RIIA Conference in association with The Carbon Trust, 4–5 November 2003, London, UK. CD ROM.
- Nakicenovic, N.: 2003d, *Future scenarios and the role of CO₂ capture and storage*. Presentation in Session I, IPIECA Workshop 'Carbon Dioxide Capture and Geological Storage: Contributing to Climate Change Solutions', 21–22 October, 2003, Brussels, Belgium. CD ROM.
- Nakicenovic, N.: 2003e, *Climate change scenarios and mitigation technologies*. Paper prepared for the Proceedings of the World Climate Change Conference (WCCC), 29 September – 3 October, 2003, Moscow, Russia.
- Nakicenovic, N.: 2003f, *Global prospects and opportunities for methane technologies in the 21st century*, Seven Decades with IGU, 118–125, International Gas Union Publications, published jointly by International Systems and Communications Limited and International Gas Union. (<http://www.igu.org>)
- Nakicenovic, N.: 2003g, *Global energy scenarios, climate change and sustainable development* in L. Soenderberg Petersen and H. Larsen (eds), Energy technologies for post Kyoto targets in the medium term, Proceedings of RISO International Energy Conference, 19–21 May, 2003, Roskilde, Denmark, Riso National Laboratory Publications, pp. 26–40. CD ROM.
- Nakicenovic, N.: 2003h, *Technology strategies for mitigating global warming*. Paper presented at the Delhi Sustainable Development Summit (DSDS), 6–9 February, 2003, New Delhi, India, and at the 3. International Energy Economics Conference (IEWT 2003), 12–14 February, 2003, Vienna, Austria.
- Nakicenovic, N., A. Grubler *et al.*: 2003, *Mitigation scenario analysis in Asia*. Research study conducted for the Japan Institute of Systems Research (JISR), Tokyo, Japan. International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N.: 2002, *Technological change in energy, mobility and information systems*, in R.K. Pachauri (ed.), Ensuring sustainable livelihoods challenges for governments, corporates, and civil society at Rio+10, Proceedings of the Delhi Sustainable Development Summit 2002, 8–11 February, 2002, New Delhi, India, Tata Energy Research Institute, pp. 238–240. (ISBN 81-7993-002-5)
- Nakicenovic, N., A. Grubler *et al.*: 2002, *Mitigation scenario analysis in Asia*. Research study conducted for the Japan Institute of Systems Research (JISR), Tokyo, Japan. International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N.: 2001a, *Scenarios of future greenhouse gas emissions*. International Institute for Applied Systems Analysis, Laxenburg, Austria.
- Nakicenovic, N.: 2001b, *Energy technologies for sustainable development*. Paper presented at the UN CSD-9 World Energy Assessment Session on Energy and the Challenge of Sustainability, 20 April, 2001, New York, NY, USA.
- Nakicenovic, N.: 2001c, *Public-private partnerships to achieve sustainable energy for transport*. Paper presented at the UN CSD-9 Multi-Stakeholder Ministerial Dialogue on Energy and Transport Issues, 16–20 April, 2001, New York, NY, USA.
- Nakicenovic, N.: 2001d, *Clean and affordable energy for the 21st century*, Section 7 on Energy for Masses, Proceedings of the Delhi Sustainable Development Summit 2001, organized by TERI, 7–9 February, 2001, New Delhi, India.

- Grubler, A.: 2000, *Technical change and environmental change*, in Bourg, D., and S. Erkman (eds), Industrial Ecology and Sustainability Conference Proceedings, CD-ROM, UTT and ICAST, September 22–25, 1999, Troyes, France.
- Nakicenovic, N.: 2000a, *Methane, the global source of energy for the 21st century*. Paper presented at the 21st World Gas Conference, 6-9 June 2000, Nice, France. An article based on this paper has been published in *Informativo mineroenergetico*, XI(2), February 2002, 48–50. Journal of National Association of Mining, Oil and Energy, Peru. [In Spanish].
- Nakicenovic, N.: 2000b, *Energy transitions for the 21st century*. Paper presented at the World Conference of Scientific Academies, Tokyo International Forum, 15–18 May, 2000, Tokyo, Japan.
<http://www.interacademies.net/intracad/tokyo2000.nsf/all/nakicenovic>
- Nakicenovic, N.: 2000c, *Long-term Energy Perspectives and Economic Development*, in Wissenschaft und Zukunft: Beiträge der Wissenschaften zur Bewältigung Globaler Krisen, Magerl, G., H. Rumpel and Ch. Smekal (eds), Proceedings of the Austrian Science Day, organized by the Austrian Science Federation, 28–30 October 1999, Semmering, organized by the Austrian Science Federation, pp. 153–194.
- Nakicenovic, N. and G. Fischer: 2000, *IPCC Scenarios and their Impacts on Agriculture*, Paper prepared for the International Symposium on Development Policies for the New Millennium, 12–14 July, 2000, Mumbai, India.
- Nakicenovic, N. and K. Riahi: 2000, *An Assessment of Technological Change Across Selected Energy Scenarios*, Paper presented at the WEC Study Group Meeting on Energy Technologies for the 21st Century, 18 January, 2001, London, UK. Reprinted as RR-02-005, International Institute for Applied Systems Analysis, Laxenburg, Austria from a publication by the World Energy Council (WEC) on behalf of the Study Group on Energy Technologies for the 21st Century, September 2001.
- Nakicenovic, N., A. Gritsevskyi, A. Grubler, and K. Riahi: 2000, *Global Natural Gas Perspectives*, International Gas Union (IGU), Office of the Secretary General, Hoersholm, Denmark, and International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria. First published by IGU at the IGU Council Meeting, Kyoto, Japan, October 2000. Published also in Russian, R & C Dynamics, Moscow, Russia, 2001, 83 pp. (ISBN 5-93972-092-7)
- Nakicenovic, N.: 1999a, *Perspectives of Energy Supply 2050*, DNK Energietag '98, DNKSchriften Nr. 6/1999, pp. 26–36. [In German.]
- Nakicenovic, N.: 1999b, *Energy perspectives for Eurasia and the Kyoto Protocol*, Paper presented at the International Conference on Sustainable Future of the Global System, 23–24 February 1999, The United Nations University/IAS and The Institute of Global Environmental Strategies, Tokyo, Japan.
- Nakicenovic, N.: 1998, *Energy perspectives for Eurasia in the global context*, Paper presented at the International Conference on Russia's and Other CIS-Countries' Energy Potential – Crucial Link Between Europe and Asia-Pacific, 31 March – 2 April 1998, Moscow International Energy Club, Moscow, Russia and at the NBER – Yale Center for Global Change Workshops, 12 – 14 August 1998, Snowmass, CO, USA.
- Nakicenovic, N., A. Grubler, M. Jefferson, and A. McDonald: 1998, *Global Energy Perspectives*, A joint IIASA – WEC study. Support Paper presented at the 17th WEC Congress, Special Session 2, 15 September 1998, Houston, TX, USA.
- Victor, D.G., N. Nakicenovic, and N. Victor: 1998, *The Kyoto Protocol carbon bubble: implications for Russia, Ukraine and emission trading*. Paper presented at the NBER – Yale Center for Global Change Workshops, 12 – 14 August 1998, Snowmass, CO, USA. A revised version of this paper entitled The Kyoto Protocol Emission Allocations: Windfall Surpluses for Russia and Ukraine, also published in *Climate Change*, 49(3), 263–277.

- Weyant, J., Y. Yanagisawa, I. Bashmakov, C. Chu, T.-Y. Jung, N. Nakicenovic, L.P. Rosa, M.J. Scott, P.R. Shukla, and K. Yamaji: 1998, *Energy and Industry*, in Rayner, S., and E.L. Malone (eds), Human Choice and Climate Change, Battelle Press, Columbus, OH, USA, pp. 203–289. (ISBN 1-57477-046-2)
- Nakicenovic, N.: 1997a, *Global energy perspectives, New Energy Technology For Asia Pacific*, Proceedings of the WEC Asia Pacific Regional Forum organized by the WEC China National Committee, 22–24 April 1997, Beijing, China, Vol. 3, World Energy Council, London, UK, pp. 41–50.
- Nakicenovic, N.: 1997b, *Technological potential for mitigation*, in S.J. Hassol and J. Katzenberger (eds), Elements of Change 1996, Aspen Global Change Institute, Aspen, CO, USA. (ISSN: 1083-9089)
- Grubler, A.: 1996, *Perspectives energetiques globales à l'horizon 2050*, Lettre du Comité National Français du Conseil Mondial de l'Energie, 10 June 1996, Paris, France. Nakicenovic, N.: 1996a, Long term energy perspective of the world, Toward more 3E Energy Systems: more Efficient, more Environmentally benign and more Economical, Center for Integrated Research in Science and Engineering (CIRSE), Nagoya University, Nagoya, Japan.
- Nakicenovic, N.: 1996b, *Global Development: Long-term Energy and Environment trends*, Forum im Pressehaus, Informationskreis Kernenergie, INFORUM Verlags- und Verwaltungs GmbH, Bonn, Germany.
- Nakicenovic, N.: 1996c, *Long term perspectives: Energy, development and the environment*, Uranium and Nuclear Energy: 1996, Proceedings of the Twenty-First Annual Symposium of the Uranium Institute, London, September 1996, Uranium Institute, London, UK, pp. 1–10. (ISBN 0 946777 35 7; ISSN 0265-430X)
- Nakicenovic, N. and A. Grubler: 1996, *Energy and the protection of the atmosphere*, United Nations Department for Policy Coordination and Sustainable Development (UN DPCSD).
- Nakicenovic, N.: 1995, *Energy and sustainable development*, Submitted to the UNU Conference on Sustainable Future of the Global System, 16-18 October 1995, Tokyo, Japan.
- Grubler, A. and A. McDonald: 1995, *The drive to cleaner energy*, Options, 3, 8–11.
- Nakicenovic, N. and M. Jefferson: 1995, Global energy perspectives to 2050 and beyond, Support paper published by the World Energy Council 16th Congress, 8–13 October 1995, Tokyo, Japan.
- Nakicenovic, N. and H.-H. Rogner: 1995, *Financing global energy perspectives to 2050*, Support paper published by the World Energy Council 16th Congress, 8–13 October 1995, Tokyo, Japan.
- Nakicenovic, N.: 1994, *Technology and climate change*, Presented at the High-Level Meeting on Development and Deployment of Technologies to Respond to Global Climate Change Concerns, 21-22 November 1994, Paris, France.
- Grubler, A.: 1993, *Energy for the 21st century: Towards improved efficiency and environmental compatibility*, in Energy Efficiency 2000 Forum, 9 March, 1993, United Nations Economic Commission for Europe, Geneva, Switzerland.
- Nakicenovic, N.: 1993, *Decarbonization as a long-term energy strategy*, Submitted to the UNU Tokyo Conference, November 1993, Tokyo, Japan.
- Nakicenovic, N.: 1992a, *Greenhouse gas emissions and energy development: A note on second generation model*, Comments on Modeling Future Greenhouse Gas Emissions: The Second Generation Model Description by J. Edmonds *et al.*
- Nakicenovic, N.: 1992b, *The role of surface transportation: History of development and prospects for the next century*.
- Nakicenovic, N. *et al.*: 1992, *Long-term strategies for mitigating global warming: Towards new earth*, Report to Japan Industrial Policy Research Institute (JIPRI). [In Japanese and English]
- Foray, D. and A. Grubler: 1991, *Towards a taxonomy of technological change*.

- Grubler, A. and D. Kirsch: 1991, *Social behavior: Limiting global change or limits for mitigation?*
- Grubler, A. and N. Nakicenovic: 1991, *Energy and the environment in the 21st century.*
- Nakicenovic, N.: 1991a, *Energy strategies for mitigating global change.*
- Nakicenovic, N.: 1991b, *Summary of the workshop on CO₂ reduction and removal: Measures for the next century.*
- Nakicenovic, N.: 1991c, *CO₂ reduction and removal: Measures for the next century*, Report on IIASA agreement with Global Industrial & Social Progress Research Institute (GISPR), Tokyo, Japan.
- Grubler, A. and N. Nakicenovic: 1990, *Economic map of Europe: Transport, communication and energy infrastructures in a wider Europe.*
- Grubler, A.: 1988, *Dynamics of change in manufacturing, transport, and energy systems*, in Hill, D. (ed.), *Towards Estimating National Energy Emission Control Costs*, Brookhaven National Laboratory, Upton, New York, pp. 15–20.
- Fueloep, G., A. Grubler, A. Lotz, A. Pfleger, A. Voigt, and S. Winkelbauer: 1985, *Optimal location of medical emergency infrastructure* in Boekemann, D. (ed.), *Logistics of Infrastructures in Rural Areas*, Institut fuer Stadt- und Regionalforschung, Technische Universitaet Wien, pp. 6–35. [In German]
- Nakicenovic , N. and L. Schrattenholzer: 1983, *Development, Structure and Influencing Factors of World Market Prices of Energy*. Prepared for Planning Consultants Oy ERG Ltd., Helsinki, Finland.
- Nakicenovic, N. and S. Messner: 1983, *The Future Use of Solar Energy in Western Europe*. Scientific Report, T 83-001, T 83-002. Technological Research and Development – Nonnuclear Energy Technologies. Federal Ministry for Research and Technology, Bonn, Germany. [In German]
- Nakicenovic, N. and W. Haefele: 1983, *The Contribution of Oil and Gas for the Transition to Long Range Novel Energy Systems*. Report to 11th World Petroleum Congress, London, UK.
- Nakicenovic, N.: 1982, *Two Alternative Solar Energy Scenarios for Western Europe*. Solar Energy Resources, Technologies, Potential. European Space Agency, ESA SP-181. European Space Agency, Paris, France.
- Nakicenovic, N., S. Messner, H.-H. Rogner, and M. Strubegger: 1982, *Long-Term Energy Supply Strategies for Stockholm County*. Report prepared for the Regional Planning Office, Stockholm County Council, Stockholm, Sweden.
- Grubler, A.: 1981, *The process encyclopedia: Its concepts, terminology and relation to the WELMM facility data base*, in McInnis, B.C. (ed.), *The Process Encyclopedia Workshop*, 26–27 March, 1981, (81/08/25), Structural Analysis Division Statistics Canada, Ottawa, Ontario, pp. 5.1–5.11.