



Émile Chappin

*Assistant Professor Simulations of Energy Infrastructure
Systems*

Education

- 2007–2011 **PhD**, *Delft University of Technology*, Delft.
Simulating Energy Transitions, see <http://chappin.com/ChappinEJL-PhDthesis.pdf> [1]
- 2004–2006 **Master of Science**, *Delft University of Technology*, Delft.
Systems Engineering, Policy Analysis and Management, Energy Track, [2]
- 2001–2004 **Bachelor of Science**, *Delft University of Technology*, Delft.
Systems Engineering, Policy Analysis and Management, Energy & Industry Track, [3]
- 1995–2001 **Pre-university education (V.W.O.)**, *Oranje Nassau College*, Zoetermeer.
Final exams in Mathematics, Statistics, Physics, Chemistry, Biology, Business Economics, Dutch, English, and German

Experience

- 2013–Present **Assistant Professor**, *Energy & Industry Section, Faculty of Technology, Policy and Management, Delft University of Technology*, Delft.
Research focus: energy infrastructure systems, systems analysis, agent-based modelling and serious gaming
Supervision: 5 PhD candidates (ongoing), various MSc and BSc students
Teaching: MSc and BSc level courses, amongst others on energy and industry systems and modelling
Core projects:
- Work package leader H2020 CHEETAH project: Changing Energy Efficiency Technology Adoption in Households (lead Fraunhofer ISI, since 2016).
 - Supervision of PhD candidate in NWO funded project on modelling values attributed to smart-grid platforms (since 2015).
 - Climate policy instruments in the Netherlands (project leader, part of project by Cologne Institute for Economic Analysis for Bundesverband der Deutschen Industrie e.V., 2015)
 - Transition Dynamics in Energy Regions: An Integrated Model for Sustainable Policies (TERIM) with LMU (2014)
 - Bibliometric analysis of TU Delft's energy research (project leader, 2013-2014)
 - Various bibliometric studies, amongst others on transitions [22] and the built environment [23] (since 2013).
 - Energy Modelling Laboratory (EMLab) [93] (see <http://emlab.tudelft.nl>, since 2011)
 - AgentSpring, a network-oriented open-source agent-based modelling tool (see <https://github.com/alfredas/AgentSpring>, since 2011)
 - Electricity market game (see <http://emg.tudelft.nl>, since 2007)

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- 2012–Present **Senior Research Fellow**, *Wuppertal Institute*, Wuppertal.
 Projects:
 - EnerTransRuhr – BMBF-funded project on energy efficiency in the building sector.
 - Supervision of 2 PhD candidates within EnerTransRuhr project.
 - Initiation and Intensification of International Cooperation regarding Agent-Based Modelling of the Energy Transition in Northern-West Europe, Funded by the Deutsche Forschungsgemeinschaft (DFG).
- 2012 **Visiting researcher**, *Wuppertal Institute*, Wuppertal.
 Projects:
 - Integration of renewables in a long-term agent-based model of the power sector
 - Development of a power plant database
- 2011–2013 **Postdoc**, *Energy & Industry Section, Faculty of Technology, Policy and Management, Delft University of Technology*, Delft.
 Research projects:
 - Knowledge for Climate – Infrastructure Networks Climate Adaptation and Hotspots (see <http://knowledgeforclimate.climate-research-netherlands.nl/>)
 - Energy Delta Gas Research – Understanding gas sector intra- and inter-market interactions (see <http://www.edgar-program.com/nl/projects/A1>)
 - Others including an agent-based model of decarbonization of the power sector, a network-oriented open-source agent-based modelling tool, AgentSpring (see <https://github.com/alfredas/AgentSpring>) and an electricity market game (see <http://emg.tudelft.nl>)
- 2007–2011 **PhD Candidate**, *Energy & Industry Section, Faculty of Technology, Policy and Management, Delft University of Technology*, Delft.
 PhD research project on simulating energy transitions. By developing a modelling framework and agent-based models of energy systems of the power supply infrastructure, the consumer lighting system, and the global market for LNG, the potential for the management of energy transitions is explored [1] (digitally available at <http://chappin.com/ChappinEJL-PhDthesis.pdf>).
- 2007 **Researcher**, *Centre for Environmental Sciences, Leiden University*, Leiden.
 Research project commissioned by SenterNovem, developing a calculator tool for life-cycle greenhouse gas emissions of chains generating electricity from biomass [83].
- 2004 **Internship**, *Delft University of Technology*, Delft.
 Project on the transport of hydrogen; conceptual and quantitative analysis to compare the use of different transport modalities for transporting hydrogen [84].
- 2002–2006 **Student Assistant**, *Delft University of Technology*, Delft.
 Several activities, including the production and maintenance of course sheets, creation and correction of written exams, writing lecture notes, the selection of literature for readers, master and produce websites for courses on Policy, Economics and Law for Energy, Water and Industry, Introduction to Energy, Water and Industry and Introduction to Systems Engineering, Policy Analysis and Management [85].

Teaching

Postgraduate level

- 2014 **Developed and taught 2-day Agent-Based Modelling course**, Wuppertal Institute.
- 2010 **33rd IAEE conference on Energy Economics**, IAEE, Rio de Janeiro.
 Electricity Market Game Workshop
- 2009–present **NGInfra Academy (Energy Track)**, *NGInfra Foundation*.
 Track manager, lecturer, game facilitator

- 2009–2010 **Professional training**, *TopTech*, Utrecht, Delft.
Lectures and trainings for CapGemini and Energy professionals
[MSc level](#)
- 2017–present **Design of Integrated Energy Systems**, *Delft University of Technology*, Delft.
Module manager, teaching, supervision projects.
- 2012–present **Systems Innovation in Energy and Industry**, *Delft University of Technology*, Delft.
Guest lectures on transition and transition management
- 2009–present **Multivariate modeling**, *Delft University of Technology*, Delft.
Working classes, sporadically lectures
- 2009–present **Research methods for data analysis**, *Delft University of Technology*, Delft.
Working classes, sporadically lectures
- 2007–2009 **Research methods and data analysis**, *Delft University of Technology*, Delft.
Working classes, lectures ('07-'08), module manager ('07-'08)
[BSc level](#)
- 2014–present **Introduction to energy & industry systems**, *Delft University of Technology*, Delft.
Module manager, developing and teaching lectures and working classes. Development of webreader [90] (see <http://eduweb.eeni.tbm.tudelft.nl/TB141E>)
- 2012–present **Policy, economy and law on the energy and industry domain**, *Delft University of Technology*, Delft.
Developing and teaching lectures and working classes on the interaction of the CO₂ market and the electricity market
- 2010–2013 **Systems in energy, water and industry part I**, *Delft University of Technology*, Delft.
Developing and teaching working classes
- 2010–2013 **Systems in energy, water and industry part II**, *Delft University of Technology*, Delft.
Developing and teaching working classes
- 2010–2014 **Life Cycle Modeling and Economic Evaluation**, *Delft University of Technology*, Delft.
Developing and teaching lectures on Life Cycle Analysis
- 2009–present **Bachelor project**, *Delft University of Technology*, Delft.
Supervision of system engineering bachelor thesis projects on energy
- 2007–present **Research methods and data analysis project**, *Delft University of Technology*, Delft.
Supervision of project groups on energy topics

Selection of extracurricular activities

- 2017 **Machine Learning Certificate**, *Stanford University*, Coursera.
- 2015–present **Special Interest Group leader**, *European Social Simulation Association*.
Special Interest Group on Education
- 2015–present **Education Committee**, *Systems Engineering, Policy Analysis and Management BSc and MSc program (as of 2017 only BSc)*.
- 2015 **Studytour**, *Teacher*, Studytour to Abu Dhabi, Dubai and South-Africa.

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- 2015 **Organizer**, *Infrastructure Hackathon*.
Hackathon on visualizing Dutch infrastructures, see <http://infra.tbm.tudelft.nl>
- 2015 **Keynote Speech**, *R&Dialoguge Project Meeting, Forschungszentrum Jülich*.
Die Energiewende - A 'Delft' Perspective
- 2014–2015 **Curriculum committee**, *Redesign of Engineering Policy Analysis MSc curriculum*.
- 2014–2015 **Background committee**, *Redesign of Systems Engineering, Policy Analysis and Management MSc curriculum*.
- 2014 **Personal Development Programme**, *Programme for TU Delft Tenure Trackers*.
- 2014–present **Management Committee**, *European Social Simulation Association (ESSA)*.
- 2014–present **Member Advisory Board**, *Catholic Youth Association WESP, Zoetermeer*.
- 2013 **Music Production Certificate**, *Statement of Accomplishment Berklee College of Music's MOOC: Introduction to Music Production*, Coursera.
With distinction
- 2013 **Jazz Improvisation Certificate**, *Statement of Accomplishment Berklee College of Music's MOOC: Jazz Improvisation*, Coursera.
- 2012–2013 **Special Interest Group leader**, *European Social Simulation Association*.
Special Interest Group on societal transitions
- 2012 **Keynote speech**, *KIVI NIRIA Symposium: Integrated Product Development Projects*, Eindhoven.
The Energy Transition: Managing complex infrastructure systems
- 2011–present **Pianist, alternate conductor**, *SprinterSingers, Zoetermeer*.
See <http://thesprintersingers.nl>
- 2011 **Teacher, musical leader, pianist**, *Centrum voor Kunst en Cultuur, Zoetermeer*.
See <http://ckc-zoetermeer.nl>
- 2010–present **Columnist**, *Het Financieele Dagblad (Dutch Financial Times)*.
Montly column FD (<http://fd.nl>, in Dutch)
- 2010 **Media training**, *Presentatiegroep, Bloemendaal*.
Media and presentation training
- 2010 **Speech**, *Institute of Environmental Systems Research, University of Osnabrück, Osnabrück, Germany*.
Speech, titled 'Simulations of energy transitions'
- 2010 **Academic hour**, *Ministry of Economic Affairs, The Hague*.
Speech 'Energy transition – Towards a CO₂-extensive power generation system'
- 2009–present **Founder and organizing chair**, *Musical Day, Zoetermeer*.
A series of full-day musical-oriented events to promote the performing arts, see <http://musicalday.nl>.
- 2008–present **Pianist**, *Haagsch Ad Hoc, The Hague*.
Accompanying singers with as specialty popular and jazz music
- 2007–2008 **Module manager**, *Delft University of Technology, Delft*.
MSc level course on research methods and data analysis
- 2007–present **Supervising various BSc and Msc theses**, *Delft University of Technology*.
- 2006–present **Presentations in the scientific community**.
Scientific presentations on a variety of international conferences (e.g. ESM, IAEE, ESSA, WCCS, ICTPI)

- 2006–present **Pianist, alternate conductor**, *Musical and Pop Choir Delft*, Delft.
 2006 **Musical Director**, *Mavelle Corporation*, Zoetermeer.
 2004–2008 **Musical director and composer**, *Reflectie Theater Association*, Zoetermeer.
 2001–2004 **Employee**, *Public Library*, Zoetermeer.
 Tasks at several departments, including the logistics department and the media department, processing several types of media, providing technical facilities and helping costumers.
 2001–2003 **Chairman and Treasurer**, *Catholic Youth Association WESP*, Zoetermeer.
 1999–present **Founder, chairman, musical director, conductor and project leader**, *Theaterorkest.nl Foundation*, Zoetermeer.
 See <http://theaterorkest.nl>

Achievements

- 2017 Best paper award, 48th International Simulation and Gaming Association’s conference [38].
 2016 Best student paper prize, 8th International Congress on Environmental Modelling and Software with PhD candidate Thorben Jensen [15].
 2016 Domain teacher of the year for the Energy and Industry Domain (TPM/TU Delft)
 2016 Nominated for Teacher of the Year of the faculty Technology, Policy, and Management (TU Delft)
 2012–2014 First prize (2012), first prize (2013), second prize (2014) Alblasserdam Havenfestival Choir Concours, accompanying Musical- and Popkoor Delft
 1996 First prize MCDonalds Music Concours, region Zoetermeer; second prize Talent of the Year Concours Zoetermeer, both with a composition *Rêverie* (<http://chappin.com/emile/docs/reverie.pdf>), piano together with Sterre Jongerius

Languages

- English **Near native (C2)**
 Dutch **Native**

Computer skills

- | | | | |
|-------------------|--|-----------|--|
| Operating Systems | MS Windows, Linux, MacOS | Tasks | Server administration and maintenance |
| Software | Office, Matlab, Maple, Cycle-Tempo, Arena, Powersim, Eclipse, Protégé, SPSS, L ^A T _E X, AgentSpring, Netlogo, Visio, CMLCA | Languages | Java, Visual Basic, PHP, HTML, JSP, Bash |

Interests

- Music Playing piano, with a focus on improvisation and accompanying; composing music; accompanying and directing choirs, orchestras and bands focusing on modern music
 Literature Writing poetry and short stories, reading
 Multimedia Computers, developing websites, radio plays and photography

Publications

Theses

- [1] Chappin, E. J. L. *Simulating Energy Transitions*. PhD thesis, Delft University of Technology, Delft, the Netherlands, 2011. URL <http://chappin.com/ChappinEJL-PhDthesis.pdf>. ISBN: 978-90-79787-30-2.
- [2] Chappin, E. J. L. Carbon Dioxide Emission Trade Impact on Power Generation Portfolio – Agent-based Modelling to Elucidate Influences of Emission Trading on Investments in Dutch Electricity Generation. Master’s thesis, Delft University of Technology, Delft, the Netherlands, 2006.
- [3] Chappin, E. J. L. *Een model voor waterstofacceptatie – Een causale analyse van de factoren die de maatschappelijke acceptatie van waterstof beïnvloeden*. Delft University of Technology, Delft, 2004. URL http://chappin.com/v2/docs/spm3911_kwantitatief_definitief.pdf.

Journal articles

- [4] Bollinger, A., C. Davis, R. Evins, E. Chappin, and I. Nikolic. Multi-model ecologies for shaping future energy systems: design patterns and development paths. *Renewable and Sustainable Energy Reviews*, 2018, accepted.
- [5] Bhagwat, P. C., J. C. Richstein, E. J. L. Chappin, K. K. Iychettira, and L. J. de Vries. Cross-border effects of capacity mechanisms in interconnected power systems. *Utilities Policy*, 46: 33–47, 2017. ISSN 0957-1787. doi: <http://dx.doi.org/10.1016/j.jup.2017.03.005>. URL <http://www.sciencedirect.com/science/article/pii/S0957178716300832>.
- [6] Bhagwat, P. C., K. K. Iychettira, J. C. Richstein, E. J. L. Chappin, and L. J. D. Vries. The effectiveness of capacity markets in the presence of a high portfolio share of renewable energy sources. *Utilities Policy*, 2017. doi: 10.1016/j.jup.2017.09.003.
- [7] Bhagwat, P. C., A. Marchesellia, J. C. Richstein, E. J. Chappin, and L. J. D. Vries. An analysis of a forward capacity market with long-term contracts. *Energy Policy*, 111:257–267, 2017. doi: 10.1016/j.enpol.2017.09.037. URL <http://www.sciencedirect.com.tudelft.idm.oclc.org/science/article/pii/S0301421517305967>.
- [8] Chappin, E. J. L., L. J. de Vries, J. Richstein, P. Bhagwat, K. Iychettira, and S. Khan. Simulating climate and energy policy with agent-based modelling: the energy modelling laboratory (emlab). *Environmental Modelling & Software*, 96:421–431, 2017. doi: 10.1016/j.envsoft.2017.07.009. URL <http://www.sciencedirect.com/science/article/pii/S1364815216310301>.
- [9] Chappin, E. J. L., X. Bijvoet, and A. Oei. Teaching sustainability to a broad audience through an entertainment game - the effect of catan: Oil springs. *Journal of Cleaner Production*, 156: 556–568, 2017. doi: 10.1016/j.jclepro.2017.04.069.
- [10] Jensen, T. and E. J. L. Chappin. Automating agent-based modeling: data-driven generation and application of innovation diffusion models. *Environmental Modelling and Software*, 92:261–268, 2017.
- [11] Jensen, T. and E. J. L. . Chappin. Reducing domestic heating demand: managing the impact of behavior-changing feedback devices via marketing. *Journal of Environmental Management*, 197: 642–655, 2017.

- [12] Bhagwat, P. C., J. C. Richstein, E. J. L. . Chappin, and L. J. de Vries. The effectiveness of a strategic reserve in the presence of a high portfolio share of renewable energy sources. *Utilities Policy*, 39:13 – 28, 2016. ISSN 0957-1787. doi: <http://dx.doi.org/10.1016/j.jup.2016.01.006>. URL <http://www.sciencedirect.com/science/article/pii/S0957178716300169>.
- [13] Friege, J., G. Holtz, and Émile J.L. Chappin. Exploring homeowners' insulation activity. *Journal of Artificial Societies and Social Simulation*, 19(1):4, 2016. doi: 10.18564/jasss.2941. URL <http://jasss.soc.surrey.ac.uk/19/1/4.html>.
- [14] Greeven, S., O. Kraan, E. J. L. Chappin, and J. H. Kwakkel. The emergence of climate change mitigation action by society: An agent-based scenario discovery study. *Journal of Artificial Societies and Social Simulation*, 19(3):9, 2016. ISSN 1460-7425. doi: 10.18564/jasss.3134. URL <http://jasss.soc.surrey.ac.uk/19/3/9.html>.
- [15] Jensen, T., G. Holtz, C. Baedeker, and E. Chappin. Energy-efficiency impacts of an air-quality feedback device in residential buildings: an agent-based modeling assessment. *Energy and Buildings*, 116:151–163, 2016. doi: <http://dx.doi.org/10.1016/j.enbuild.2015.11.067>. URL <http://www.sciencedirect.com/science/article/pii/S0378778815304308>.
- [16] Chappin, E. J. L. and G. P. J. Dijkema. Modeling for transition management. *Social Science Research Network*, 2015. doi: 10.2139/ssrn.2618413. URL <http://ssrn.com/abstract=2618413>.
- [17] Holtz, G., F. Alkemade, F. J. de Haan, J. Köhler, E. Trutnevte, T. Luthe, J. Halbe, G. Pappachristos, E. J. L. Chappin, and J. H. Kwakkel. Prospects of modelling societal transitions - position paper of an emerging community. *Environmental Innovation and Societal Transitions*, 2015. doi: 10.1016/j.eist.2015.05.006. URL <http://www.sciencedirect.com/science/article/pii/S2210422415000441>.
- [18] Jensen, T., G. Holtz, and E. J. L. Chappin. Agent-based assessment framework for behavior-changing feedback devices: combined spreading of devices and energy conservation in domestic heating. *Technological Forecasting & Social Change*, 98:105–119, 2015. doi: 10.1016/j.techfore.2015.06.006. URL <http://www.sciencedirect.com/science/article/pii/S0040162515001729#>.
- [19] Richstein, J. C., E. J. L. Chappin, and L. J. de Vries. Adjusting the co2 cap to subsidised res generation: Can co2 prices be decoupled from renewable policy? *Applied Energy*, 156:693–702, 2015. doi: 10.1016/j.apenergy.2015.07.024. URL <http://www.sciencedirect.com/science/article/pii/S0306261915008533>.
- [20] Richstein, J. C., E. J. L. Chappin, and L. J. de Vries. The market (in-)stability reserve for eu carbon emission trading: Why it may fail and how to improve it. *Utilities Policy*, 35:1–18, 2015. doi: 10.1016/j.jup.2015.05.002. URL <http://www.sciencedirect.com/science/article/pii/S0957178715300059>.
- [21] Chappin, E. J. L. and T. van der Lei. Adaptation of infrastructures to climate change: a socio-technical systems perspective. *Utilities Policy*, 31:10–17, December 2014. doi: 10.1016/j.jup.2014.07.003. URL <http://www.sciencedirect.com/science/article/pii/S0957178714000472>.
- [22] Chappin, E. J. L. and A. Ligtoet. Transition and transformation: a bibliometric analysis of two scientific networks researching socio-technical change. *Renewable and Sustainable Energy Reviews*, 30:715–723, February 2014 2014. doi: 10.1016/j.rser.2013.11.013. URL <http://www.sciencedirect.com/science/article/pii/S1364032113007624>.

- [23] Friege, J. and E. Chappin. Modelling decisions on energy-efficient renovations: a review. *Renewable and Sustainable Energy Reviews*, 39:196–208, 2014. ISSN 1364-0321. doi: 10.1016/j.rser.2014.07.091. URL <http://www.sciencedirect.com/science/article/pii/S1364032114005437>.
- [24] Heijnen, P., E. Chappin, and I. Nikolic. Infrastructure network design with a multi-model approach: Comparing geometric graph theory with an agent-based implementation of an ant colony optimization. *Journal of Artificial Societies and Social Simulation*, 17(4):1, 2014. ISSN 1460-7425. doi: 10.18564/jasss.2533. URL <http://jasss.soc.surrey.ac.uk/17/4/1.html>.
- [25] Richstein, J. C., E. J. L. Chappin, and L. J. de Vries. Cross-border electricity market effects due to price caps in an emission trading system: An agent-based approach. *Energy Policy*, 71: 139–158, August 2014 2014. doi: 10.1016/j.enpol.2014.03.037. URL <http://www.sciencedirect.com/science/article/pii/S0301421514002043>.
- [26] Bollinger, L. A., C. W. J. Bogmans, E. J. L. Chappin, G. P. J. Dijkema, J. N. Huibregtse, N. Maas, T. Schenk, M. Snelder, P. van Thienen, S. de Wit, B. Wols, and L. A. Tavasszy. Climate adaptation of interconnected infrastructures: a framework for supporting governance. *Regional Environmental Change*, 14(3):919–931, 2013. doi: 10.1007/s10113-013-0428-4. URL <http://link.springer.com/article/10.1007/s10113-013-0428-4>. DOI: 10.1007/s10113-013-0428-4.
- [27] Chappin, E. J. L. and M. R. Afman. An agent-based model of transitions in consumer lighting: Policy impacts from the e.u. phase-out of incandescents. *Environmental Innovation and Societal Transitions*, 7:16–36, 2013. doi: 10.1016/j.eist.2012.11.005. URL <http://www.sciencedirect.com/science/article/pii/S2210422412000706>.
- [28] Ligtoet, A. and E. J. L. Chappin. Experience-based exploration of complex energy systems. *Journal of Futures Studies*, 17(1):57–70, September 2012 2012. URL <http://www.jfs.tku.edu.tw/17-1/A04.pdf>.
- [29] Chappin, E. J. L. and G. P. J. Dijkema. Agent-based modeling of energy infrastructure transitions. *International Journal of Critical Infrastructures*, 6(2):106–130, 2010. doi: 10.1504/IJCIS.2010.031070. URL <http://www.inderscience.com/info/inarticle.php?artid=31070>.
- [30] Chappin, E. J. L. and G. P. J. Dijkema. On the impact of CO₂ emission-trading on power generation emissions. *Technological Forecasting & Social Change*, 76(3):358–370, 2009. doi: 10.1016/j.techfore.2008.08.004.

Book chapters

- [31] Chmieliauskas, A., E. Chappin, C. Davis, I. Nikolic, and G. Dijkema. New methods in analysis and design of policy instruments. In Gheorghe, A. V., editor, *System of Systems*. Intech, 2012. URL <http://cdn.intechweb.org/pdfs/30419.pdf>.
- [32] Chappin, E. J. L. and M. R. Afman. Agent-based model of consumer lighting. In van Dam, K. H., I. Nikolic, and Z. Lukszo, editors, *Agent-Based Modelling of Socio-Technical Systems*, volume 9 of *Agent-Based Social Systems*, chapter 6, pages 181–200. Springer, 2012. doi: 10.1007/978-94-007-4933-7_6. URL <http://www.springerlink.com/content/h07x2253318251h6/>.
- [33] Chappin, E. J. L. and G. P. J. Dijkema. Agent-based model of CO₂ policies and electricity generation. In van Dam, K. H., I. Nikolic, and Z. Lukszo, editors, *Agent-Based Modelling of Socio-Technical Systems*, volume 9 of *Agent-Based Social Systems*, chapter 7, pages 201–219. Springer, 2012. doi: 10.1007/978-94-007-4933-7_7.

- [34] Chappin, E. J. L. and G. P. J. Dijkema. Transition management in energy: Design and evaluate transitions with a suitable simulation framework. In van Geenhuizen, M., W. J. Nuttall, D. Gibson, and E. Oftedal, editors, *Energy and Innovation: Structural Change and Policy Implications*, International Series on Technology Policy and Innovation, pages 187–210. Purdue University Press, 2010. ISBN 978-1-55753-578-8.
- [35] Holtz, G., J. Vervoort, E. Chappin, and S. Karmacharya. Challenges and opportunities in transition modelling. In *Modelling system innovations in coupled human-technology-environment systems*. University of Osnabrück, Osnabrück, Germany, 2010.
- [36] Chappin, E. J. L., G. P. J. Dijkema, and L. J. d. Vries. Carbon policies: Do they deliver in the long run? In Sioshansi, P., editor, *Carbon Constrained: Future of Electricity*, Global Energy Policy and Economic Series, pages 31–56. Elsevier, 2010. ISBN: 978-1-85617-655-2.

Conference papers

- [37] Chappin, E. J. L. ., G. Korevaar, and S. Pelka. Teaching the modelling of integrated energy systems – course design and first experience. In *Social Simulation Conference, Dublin*, 2017.
- [38] Garcia, O. G., E. van Daalen, E. Chappin, B. van Nuland, I. Mohammed, and B. Enserink. Assessing the residential energy rebound effect by means of a serious game. In *ISAGA 2017 Conference*, 2017.
- [39] Chappin, E. J. L. . Complementing weaknesses in marginal abatement cost curves. In *39th IAAE International Conference "Energy: Expectations and Uncertainty"*, 2016.
- [40] Jensen, T. and E. J. L. Chappin. Agent-based modeling 2.0: data-driven selection of model structure. In *CESUN Conference 2016*, 2016.
- [41] Jensen, T. and E. J. L. Chappin. Agent-based modeling automated: Data-driven generation of innovation diffusion models. In Sauvage, S., J.-M. Sánchez-Pérez, and A. Rizzoli, editors, *8th International Congress on Environmental Modelling and Software*, Toulouse, France, 2016. International Environmental Modelling and Software Society (iEMSs).
- [42] Jensen, T., G. Holtz, and E. Chappin. Automated model structure variation and policy robustness testing: a procedure for innovation diffusion models. In *SSC 2016 conference*, 2016.
- [43] Bhamidipati, S., T. van der Lei, E. Chappin, and P. Herder. Simulating asset management strategies for climate change and its impact on roads. In *10th World Congress on Engineering Asset Management - WCEAM 2015*, 2015.
- [44] Holtz, G., T. Jensen, and E. Chappin. Modelling the diffusion and effect of behaviour changing feedback devices. In *EU-SPRI 2015 conference*, 2015.
- [45] Park Lee, E., E. Chappin, Z. Lukszo, and P. M. Herder. The car as power plant: Towards socio-technical systems integration. In *PowerTech Eindhoven 2015 conference*, 2015.
- [46] Chappin, E. J. L. and P. W. Heijnen. On infrastructure network design with agent-based modelling. In *Social Simulation 2014 Conference*, Brescia, Italy, 2014. ESSA.
- [47] Friege, J. and E. J. L. Chappin. Simulating the influence of socio-spatial structures on energy-efficient renovations. In *Social Simulation 2014 Conference*, Brescia, Italy, 2014. ESSA.

- [48] Jensen, T. and E. J. L. Chappin. Towards an agent-based model on co-diffusion of technology and behavior: A review. In *Proceedings of the European Conference on Modelling and Simulation*, Brescia, Italy, May 2014. doi: 10.7148/2014-0782. URL http://www.scs-europe.net/dlib/2014/ecms14papers/pm_ECMS2014_0092.pdf. ISBN: 978-0-9564944-9-8.
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