

CURRICULUM VITAE

Antti Edward Silvast, 22-12-2022

EMPLOYMENT HISTORY

- 2021-present Technical University of Denmark (DTU), DTU Management, Associate Professor. Working in the new Division for Responsible Innovation and Design. Course responsible for Theory of Science in Engineering mandatory to DTU Bachelor's students, supervision, research, and proposal writing. Permanent position, from 15-12-2021.
- 2022-2023 Norwegian University of Science and Technology, Department of Interdisciplinary Studies of Culture, Faculty of Humanities, Associate Professor-II. Participation in energy research work via workshops, teaching, student supervision, and development of new projects. Fixed-term position, 01-11-2022 – 31-10-2023.
- 2021 Nordic Energy Research, Senior Advisor. Working in research management of ERA-Net Smart Energy Systems and Nordic-wide research funding calls. Funding topics include digital transformation and green transitions and energy systems modelling. Responsible for co-managing the organization's involvement in the European Partnership for Clean Energy Transition (Horizon Europe). Fixed-term position, 04-01-2021 – 14-12-2021.
- 2019-2021 Norwegian University of Science and Technology, Department of Interdisciplinary Studies of Culture, Faculty of Humanities, researcher. Developing research-based contributions and new projects on the role of energy systems in sustainability transition in Norway and Europe. 01-06-2019 – 03-01-2021.
- 2018-2019 Durham University, Department of Anthropology, post-doctoral research associate. Working for the National Centre for Energy Systems Integration (CESI), a multidisciplinary 5-year consortium of UK universities (Newcastle, Edinburgh, Durham, Heriot-Watt, Sussex) and industrial partners with Siemens in the lead. Funded by the UK Engineering and Physical Sciences Research Council (EPSRC) and Siemens. Research topics including social science analysis of energy systems modelling and scenarios; interdisciplinary research for energy systems integration; and control rooms of the future in integrated energy systems. 01-01-2018 – 31-05-2019
- 2015-2017 University of Edinburgh, School of Social and Political Science, Science, Technology and Innovation Studies, research fellow. Working for the multidisciplinary Energy and Society research group with Horizon 2020 and Scottish ClimateXChange (Scottish Government) funding. Topics including smart energy, responsible innovation, and end users; and sustainability transitions, European energy markets, and policy. 01-03-2015 – 31-12-2017
- 2014-2015 Princeton University, Princeton Institute for International and Regional Studies, post-doctoral research associate. Working on research articles and monograph for the Global Systemic Risk multidisciplinary research community. 01-09-2014 – 28-02-2015

- 2007-2014 University of Helsinki, Department of Social Research, doctoral candidate and researcher. Working for a research project (Academy of Finland) on infrastructure, economic sociology, and insurance; and a doctoral dissertation on electricity infrastructure and risk in Finland and the Nordic power market Nord Pool. 01-09-2007 – 31-08-2014
- 2008-2009 Aalto University, Systems Analysis Laboratory, researcher. Working for a research project (funded by Finnish Ministry of Education) on research group activities and university research funding. Programming in C of a research platform to do efficiency calculations via linear programming. 01-06-2008 – 31-12-2009
- 2006-2007 Finnish Energy Industries, technical assistant. Working on groups related to electricity standardisation, market regulation, network failure statistics, customer complaints, and electricity quality. 01-06-2006 – 31-08-2007
- 2000-2005 Aalto University, Power Systems Research Group, research assistant. Working on research projects on electricity customer studies and various intelligent electricity network technologies. Programming in C and Assembly. 01-06-2000 – 31-12-2005

EDUCATION AND QUALIFICATION

- 2013 PhD, University of Helsinki, Discipline of Sociology, major subject: Sociology, thesis grade: Magna Cum Laude (approved with great praise), 31-10-2013
- 2007 MSocSc, University of Helsinki, Department of Sociology, major subject: Sociology thesis grade: Eximia Cum Laude (approved with exceptional praise), 31-01-2007

PUBLICATIONS

Google Scholar h-index **16**:

<https://scholar.google.com/citations?user=0HwXkl4AAAAJ&hl=en>

ORCID id:

<https://orcid.org/0000-0002-1026-6529>

Scientific highlights are marked with * with an explanation.

BOOKS

- 2022 ***Silvast, Antti** & Foulds, Chris (2022). *A Sociology of Interdisciplinary: Dynamics of Energy Research*. London: Palgrave Pivot. The endorsers supporting this monograph state that “by recognising and discussing the challenges and ambivalences involved (especially for social scientists) alongside the opportunities, Silvast and Foulds offer a welcome and timely contribution” (Dr Mark Winskel, Senior Lecturer, University of Edinburgh) and that the book “brings a much-needed social scientific understanding to the promises, complexities and challenges of doing interdisciplinary research” (Dr Adel el Gammal, Secretary General, European Energy Research Alliance); “shows how unequal relationships across the disciplines contribute to how interdisciplinary collaborations are constructed” (Prof David J. Hess, Vanderbilt University); and “the nuanced discussion of empirical cases from energy research in the UK, Norway and Finland also makes the book equally

relevant to practitioners and funders of interdisciplinary research” (Prof Tanja Winther, University of Oslo).

- 2017 *Silvast, Antti (2017). *Making Electricity Resilient: Risk and Security in a Liberalized Infrastructure*. New York-London: Routledge. The endorsers supporting this monograph state that “Silvast offers an invaluable contribution to our understanding of infrastructure and resilience at a moment when these issues could not be more urgent” (Prof Stephen J. Collier, UC Berkeley); “Silvast’s book is a great addition to our understanding of how we depend on infrastructure and how it, in turn, depends on our governance” (Prof Miguel A. Centeno, Princeton University); and “this is a book that will be a standard reference for years to come for scholars of infrastructure, energy, and risk” (Dr Vincent Lagendijk, Maastricht University).

COLLECTED VOLUMES

- 2013-2014 ***Silvast, Antti**; Hänninen, Hannu & Hyysalo, Sampsa (2013, 2014). Energy in Society. A triple special issue of *Science & Technology Studies*, 26 (3), 27 (1), and 27 (2). 14 articles, cited 290 times, on energy in society by a number of key international researchers of energy transitions and energy social research. It was cited by Prof Elizabeth Shove in a collected volume “The Nexus of Practices”, Routledge, 2016 edited by Dr Allison Hui, Lancaster, Prof Theodore Schatzki, University of Kentucky, and Prof Shove, eminent scholars of social theories of practice. My name was also included in the index of the book indicating impact.

JOURNAL ARTICLES

I have co-published 26 journal articles (with 2 currently in submission).

- 2023 ***Silvast, Antti** & Virtanen, Mikko (2023). On Theory-Methods Packages in Science and Technology Studies. *Science, Technology, & Human Values* 48(1): 167-189. Our review essay contributes to the long-standing and vibrant discussion in science and technology studies (STS) on methods, methodologies, and theory–method relationships. We aim to improve the reflexivity of research by unpacking the often implicit assumptions that imbue research conduct and by offering practical tools through which STS researchers can recognize their research designs and think through them in a new way.
- 2022 **Silvast, Antti**; Virtanen, Mikko J. & Abram, Simone (2022). Habits Over Routines: Remarks on Control Room Practices and Control Room Studies. *Computer Supported Cooperative Work (CSCW)*: 1-20.
- 2022 Fodstad, Marte; Crespo del Granado, Pedro; Hellemo, Lars; Knudsen, Brage Rugstad; Piscicella, Paolo; **Silvast, Antti**; Bordin, Chiara; Schmidt, Sarah & Straus, Julian (2022). Next Frontiers in Energy System Modelling: A Review on Challenges and the State of the Art. *Renewable and Sustainable Energy Reviews* 160: 112246.
- 2021 **Silvast, Antti**, Abram, Simone & Copeland, Claire (2021). Energy Systems Integration as Research Practice. *Technology Analysis & Strategic Management*.

- 2021 *Abram, Simone & **Silvast, Antti** (2021). Flexibility of real-time energy distribution: the changing practices of energy control rooms. *Journal of Energy History* 5. Special issue on flexibility edited by Prof Elizabeth Shove, Dr Stan Blue, and Dr Peter Forman. This article is published in a volume by internationally recognised social practice theorist, Prof Elizabeth Shove, advancing breakthroughs in social theories and tools for exploring infrastructure, flexibility, consumption, and production.
- 2021 **Silvast, Antti**; Kongsager, Rico; Lehtonen, Turo-Kimmo; Lundgren, Minna & Virtanen, Mikko (2021). Critical infrastructure vulnerability: a research note on adaptation to climate change in the Nordic countries. *Geografisk Tidsskrift-Danish Journal of Geography* 121(1): 79-90.
- 2021 Fjellså, Ingvild Firman; **Silvast, Antti** & Skjølvold, Tomas Moe (2021). Justice aspects of flexible household electricity consumption in future smart energy systems. *Environmental Innovation and Societal Transitions* 38: 98-109.
- 2020 *Sovacool, Benjamin; Hess, David; Amir, Sulfikar; Geels, Frank; Hirsh, Leonard; Rodriguez, Medina; Miller, Clark; Alvia Palavicino, Carla; Phadke, Roopali; Ryghaug, Marianne; Schot, Johan; **Silvast, Antti**; Stephens, Jennie; Stirling, Andy; Turnheim, Bruno; van der Vleuten, Erik; van Lente, Harro & Yearley, Steven (2020) Sociotechnical agendas: reviewing future directions for energy and climate research. *Energy Research & Social Science* 70: 101617. This review by the main authors' designation uses "reflections of sixteen prominent researchers in the field". Being invited to such a task is indication of my emerging reputation and prominence of my research in the field of energy-related STS.
- 2020 **Silvast, Antti**; Laes, Erik; Abram, Simone & Bombaerts, Gunter (2020). What do energy modellers know? An ethnography of epistemic values and knowledge models. *Energy Research & Social Science* 66: 101495.
- 2020 Virtanen, Mikko & **Silvast, Antti** (2020). Monipaikkainen kehystystutkimus [Multi-Sited Analysis of Framings]. *Sosiologia* [Journal for Finnish Sociology] 57 (2): 182-201.
- 2020 Meriläinen, Eija; Nikkanen, Maija; Räsänen, Alekski & **Silvast, Antti** (2020). Katastrofitutkimuksen käsitteistöä suomeksi ja Suomessa: kimmoisasti vaaroja kohti? [Terminologies of disaster research in Finnish and Finland: resiliently toward hazards?] *Alue ja ympäristö* 49(2): 92-109.
- 2019 **Silvast, Antti** & Virtanen, Mikko (2019). An Assemblage of Framings and Tamings – Multi-sited Analysis of Infrastructures as a Methodology. *Journal of Cultural Economy* 12 (6): 461-477.
- 2019 Bolton, Ronan; Lagendijk, Vincent & **Silvast, Antti** (2019). Grand Visions and Pragmatic Integration: Exploring the Evolution of Europe's Electricity Regime. *Environmental Innovation and Societal Transitions* 32: 55-68.
- 2018 **Silvast, Antti**; Williams, Robin; Hyysalo, Sampsa; Rommetveit, Kjetil & Raab, Charles (2018). Who 'Uses' Smart Grids? The Evolving Nature of User Representations in Layered Infrastructures. *Sustainability* 10 (10): 3738.

- 2018 Suominen, Jaakko; **Silvast, Antti** & Harviainen, Tuomas J. (2018). Smelling Machine History: Olfactory Experiences of Information Technology. *Technology & Culture* 59 (2): 313-337.
- 2017 Silvast, Antti (2017). Energy, Economics, and Performativity: Reviewing Theoretical Advances in Social Studies of Markets and Energy. *Energy Research & Social Science* 34: 4–12.
- 2016 Jalas, Mikko; Rinkinen, Jenny & **Silvast, Antti** (2016). The Rhythms of Infrastructure. *Anthropology Today* 32 (4): 17-20.
- 2015 Silvast, Antti (2015). An Oral History of Programming Practices: Gender and Age Dynamics and Digital (Dis)Engagement Among Computer Programmers in Finland. *Human Technology* 11 (1): 4-29.
- 2014 **Silvast, Antti** & Virtanen, Mikko (2014). Keeping Systems at Work: Electricity Infrastructure from Control Rooms to Household Practices. *Science & Technology Studies* 27 (2): 93-114.
- 2014 Silvast, Antti (2014). Elintärkeää tekniikkaa: Otteita infrastruktuurien suojaamisen historiasta [Vital technology: historical excerpts from the protection of infrastructures]. *Tekniikan Waibeita* 32 (1): 23-42.
- 2013 **Silvast, Antti** & Ilan Kelman (2013). Is the Normal Accidents perspective falsifiable? *Disaster Prevention and Management* 22 (1): 7-16.
- 2013 **Silvast, Antti** & Virtanen, Mikko (2013). Sähkö, katko ja kokemus: sähkönkulutuksen kaksi rationaalisuutta [Electricity, Interruption, and Experience: The Two Rationalities of Electricity Consumption]. *Sosiologia* [Journal for Finnish Sociology] 50 (4): 358-373.
- 2012 Kurko, Terhi; **Silvast, Antti**; Wahlroos, Hannes; Pietilä, Kirsi & Airaksinen, Marja (2012). Is pharmaceutical policy evidence-informed? A case of the deregulation process of nicotine replacement therapy products in Finland. *Health Policy* 105 (2): 246-255.
- 2011 Silvast, Antti (2011). Monitor Screens of Market Risks: Managing Electricity in a Finnish Control Room. *STS Encounters* 4 (2): 145-174.
- 2008 **Silvast, Antti** & Virtanen, Mikko (2008). Riski, asiantuntijuus ja maallikot: Ulrich Beckin riskiyhteiskunnan teorian kritiikki [Risk, Expertise, and Lay People: A Critique of Ulrich Beck's Risk Society]. *Tiede ja Edistyks* 39 (1): 50-65.
- 2007 Silvast, Antti (2007). Epävarmuutta kohtaamassa: insinöörien ja maallikoiden näkemyksiä sähkökatkoista [Facing uncertainty: Engineers' and lay persons' views on power failures]. *Tekniikan Waibeita* 25(1): 13-21.

BOOK CHAPTERS

I have co-published 11 book chapters in peer-reviewed collected volumes.

- 2022 ***Silvast, Antti**; Williams, Robin; Hyysalo, Sampsa; Rommetveit, Kjetil & Raab, Charles (2022). Producing the ‘User’ in Smart Technologies: A Framework for Examining User Representations in Smart Grids and Smart Metering Infrastructure. In Kurz, Heinz D.; Schütz, Marlies; Strohmaier, Rita & Zilian, Stella (eds) *Routledge Handbook of Smart Technologies*. London: Routledge. This jointly written chapter involved Prof Robin Williams, Prof Charles Raab (Edinburgh), Prof Sampsa Hyysalo (Aalto), and Assoc Prof Kjetil Rommetveit (Bergen). It develops a framework from the sociology of representations and STS to counter simple explanations and retain the complexity of who the ‘users’ of smart technologies are and how they may benefit from increased ‘smartness’.
- 2022 Abram, Simone & **Silvast, Antti** (2022). Modelling the Future? In Lanzeni, Débora; Waltorp, Karen; Pink, Sarah & Smith Rachel C. (eds) *An Anthropology of Futures and Technologies*. London: Routledge.
- 2021 *Silvast, Antti (2021). Energy futures: understanding integrated energy systems. In Webb, Janette; Wade, Faye & Tingey, Margaret (eds) *Research Handbook on Energy & Society*. London: Edward Elgar. This chapter, in an edited volume by Prof Janette Webb, Dr Faye Wade, and Dr Margaret Tingey (Edinburgh), speaks to the role of computer models in understanding future energy systems and addresses how social scientists can become enrolled ethnographically in energy expert settings, thus exposing new knowledge about the use and limitations of such models.
- 2019 Silvast, Antti (2019). Energy Dimensions of Urban Resilience. In Burayidi, Michael; Allen, Adriana; Twigg, John & Wamsler, Christine (eds) *Handbook on Urban Resilience*. London: Routledge.
- 2018 *Silvast, Antti (2018). Co-constituting Supply and Demand: Managing Electricity in Two Neighbouring Control Rooms. In Shove, Elizabeth & Trentmann, Frank (eds) *Infrastructures in Practice: The Evolution of Demand in Networked Societies*. New York-London: Routledge, 171-183. This chapter is published in a volume by internationally recognised social practice theorist, Prof Elizabeth Shove, advancing breakthroughs in social theories and tools for exploring infrastructure, consumption, and production.
- 2018 **Silvast, Antti**; Jalas, Mikko & Rinkinen, Jenny (2018). Energy Governance, Risk, and Temporality: The Construction of Energy Time through Law and Regulation. In Beynon-Jones, Siân & Grabham, Emily (eds) *Law and Time*. New York-London: Routledge, 212-228.
- 2018 **Silvast, Antti**; Bolton, Ronan; Lagendijk, Vincent & Szulecki, Kacper (2018). Crossing Borders: Social Sciences and Humanities Perspectives on European Energy Systems Integration. In Foulds, Chris & Robison, Rosie (eds) *Advancing Energy Policy: Lessons on the Integration of Social Sciences and Humanities*. London: Palgrave MacMillan, 97-110.
- 2014 Silvast, Antti (2014). The Protection of the Banking System as a Critical Societal Infrastructure. In Petropoulos, Nicholas & Tsobanoglou, George (eds): *The Debt Crisis in the Eurozone (EZ): Social Impacts*. Newcastle upon Tyne, UK: Cambridge Scholars Publishing, 459-480.

- 2014 **Silvast, Antti** & Reunanen, Markku (2014). Multiple Users, Diverse Users: The Appropriation of the Personal Computer by the Demoscene Hackers. In Oldenziel, Ruth & Alberts, Gerard (eds): *Hacking Europe: From Computer Cultures to Demoscenes*. Berlin: Springer.
- 2009 Silvast, Antti (2009). Riskiyhteiskunta ja merkityksenanto: sähkönjakelun häiriöiden semioottista tarkastelua [Risk Society and Meaning-Making: Semiotic Examination of Electricity Supply Disruptions]. In Hannula, Erja & Oksanen, Ulla (eds), *Murtuvat merkit: semiotiikan teoreettisen ja soveltavan tutkimuksen näkökulmia*. Helsinki. Gaudeamus, 187-198.
- 2009 Reunanen, Markku & **Silvast, Antti** (2009). Demoscene Platforms: A Case Study on the Adoption of Home Computers. In Impagliazzo, John; Järvi, Timo & Paju, Petri (eds): *History of Nordic Computing 2*. Berlin: Springer, 289-301.

CONFERENCE PAPERS

- 2022 **Silvast, Antti** & Pursiainen, Christer (2022). Learning from the Covid-19 pandemic in the Nordic countries: A framework for analysis. The Northern European Conference on Emergency and Disaster Studies, Copenhagen, Denmark, 1-3 November 2022.
- 2022 Andersen, Per & **Silvast, Antti** (2022). Stakeholder inclusion and anticipation on techno-economic data for long-term energy planning. Proceedings of 4th International Conference on Anticipation. 4th International Conference on Anticipation, Tempe, United States, 16 – 18 November 2022.
- 2022 Andersen, Per & **Silvast, Antti** (2022). Stakeholder inclusion in estimating future techno-economic data for energy technologies for long-term energy planning. Eu-SPRI 2022 Conference: Challenging Science and Innovation Policy, Utrecht University, Netherlands, 1-3 June 2022.
- 2019 Laes, Erik; **Silvast, Antti**; Bombaerts, Gunter & Abram, Simone (2019). Epistemic Values in Energy Modelling. The Eindhoven Energy Ethics Workshop on ‘Fair Energy Transition’, Eindhoven University of Technology, 25 – 26 January 2019.
- 2018 Abram, Simone & **Silvast, Antti** (2018). Modelling the Future? 15th EASA (European Association of Social Anthropologists) Biennial Conference, Stockholm, 14 – 17 August 2018.
- 2016 **Silvast, Antti**; Bolton, Ronan & Winskel, Mark (2016). Understanding the European Energy Union: A Single Concept for Many Systems. 39th International Association for Energy Economics (IAEE) Conference, Bergen, Norway, 19 – 22 June 2016.

OTHER PUBLICATIONS

- 2020 Silvast, Antti (2020). UKERC Energy Research Atlas: Interdisciplinary Whole Systems Research. London: UK Energy Research Centre. <https://ukerc.ac.uk/publications/the-whole-systems-research/>

- 2017 Rommetveit, Kjetil, Dunajcsik, Maxigas; **Silvast, Antti**; Tanas, Alessia & Gunnarsdóttir, Kristrún (2017). CANDID Primer: Including Social Sciences and Humanities scholarship in the making and use of smart ICT technologies. CANDID EU H2020 Project Paper.
https://candid.w.uib.no/files/2018/02/D5.4_template.pdf
- 2014 **Silvast, Antti**; Hänninen, Hannu & Hyysalo, Sampsa (2014). Energy in Society: Energy Systems and Infrastructures in Society – Concluding issue. *Science & Technology Studies* 27 (2): 3-6.
- 2014 **Silvast, Antti**; Hänninen, Hannu & Hyysalo, Sampsa (2014). Energy in Society: Energy Systems and Infrastructures in Society – Part 2 of 3. *Science & Technology Studies* 27 (1): 3-7.
- 2013 **Silvast, Antti**; Hänninen, Hannu & Hyysalo, Sampsa (2013). Energy in Society: Energy Systems and Infrastructures in Society. *Science & Technology Studies* 26 (3): 3-13.
- 2007 **Silvast, Antti** & Kaplinsky, Joe (2007). White Paper on Security of European Electricity Distribution. European Union's UNDERSTAND project.
http://www.understand.se/docs/White_Paper_EN.doc

TEACHING EXPERIENCE

INVOLVEMENT IN CURRICULUM PLANNING AND THE IMPLEMENTATION OF COURSES

In total, I hold 650 hours of experience in implementation and planning of teaching at the master's and bachelor's levels. This experience spans 14 different courses in 5 universities and 4 countries, in several broad scientific disciplines: Science and Technology Studies, geosciences, communications, and anthropology.

Technical University of Denmark, DTU Management

- 2022-2023 Theory of Science in Engineering, course responsible (January 2022, August 2022, January 2023). A 3-week hybrid (online and physical) intensive course that is mandatory to DTU Bachelor's students and includes 15 days of lectures, divided to a section on sustainability (UN SDGs and life-cycle analysis) and philosophy of science (science studies, STS). Coordinating the work of several main lecturers and Teaching Assistants, involving several guest lecturers; overall responsibility for the course content and gradings; correction of student exercises; providing own content and exercises for lectures. 400h.

Norwegian University of Science and Technology, Department of Interdisciplinary Studies of Culture

- 2020 Teknologi, innovasjon og samfunnsendring [Technology, Innovation and Societal Change], co-lecturer (Spring 2020). Planning and conducting five sessions on science, technology and innovation studies approaches including lectures, exercises, group work; correction of student exercises; grading of exam. 50h

Durham University, Department of Anthropology

- 2019 Energy Society and Energy Practices, guest lecturer (Spring 2019). Assisting in the development of the contents of the course, including inviting Prof Elizabeth Shove to give a lecture and co-coordinating exercises for students. Designing a lecture based on own editing experience. 10h
- 2018 Energy Society and Energy Practices, guest lecturer (Spring 2018). Designing a lecture based on own editing experience. 5h

University of Edinburgh, School of GeoSciences

- 2017 Energy and Society I: Key themes and issues, guest lecturer (Autumn 2017). Designing a lecture based on own single-author monograph. 5h

University of Edinburgh, School of Social and Political Science

- 2016 Energy Policy and Politics, guest lecturer (Spring 2016). Designing a lecture based on own research project. 5h

University of Helsinki, the Finnish Open University

- 2014 Kriisiviestintä ja -johtaminen [Crisis Communication and Management], guest lecturer and exercise (Spring 2014). Designing a lecture and exercise based on own research project. 5h

University of Helsinki, Department of Social Research

- 2014 Teknologia, ympäristö ja yhteiskunta [Technology, Environment, and Society], guest lecturer (Spring 2014). Designing a lecture based on own research project. 5h
- 2012-2013 Reflexive Interviewing, teaching assistant and exercises (Autumn 2013, Spring 2012). Lecturing on discourse analysis methods based on own research project and conducting student exercises on various methodologies in small groups, participation in the design of the course contents. 50h
- 2011 Käytäntöjen analytiikkaa [The Analytics of Practices], teaching assistant (Spring 2011). Conducting student reading groups in small groups. 50h
- 2009-2010 Sosiaalitutkimuksen kvalitatiiviset menetelmät [The Qualitative Methods of Social Research], teaching assistant and exercises (Autumn 2010, Spring 2010, Autumn 2009). Lecturing on discourse analysis methods based on own research project and conducting student exercises on various methodologies in small groups, participation in the design of the course contents. 50h
- 2009 Energiapolitiikka, media ja markkinat [Energy Politics, Media, and Markets], guest lecturer (Spring 2009). Designing a lecture based on own research project. 5h
- 2009 Ajankohtaisia teemoja tieteen- ja teknologian tutkimuksessa [Contemporary Themes in Science and Technology Studies], guest lecturer (Spring 2009). Designing a lecture based on own research project. 5h

2009 Teoria, tutkimus ja teoreettinen tutkimus [Theory, Research, and Theoretical Research], guest lecturer (Spring 2009). Designing a lecture based on own research project. 5h

PEDAGOGICAL TRAINING COURSES

2022 University Teacher Training Programme at the Technical University of Denmark (DTU), completed. Gives readiness to plan, develop, and evaluate student-centered and learning outcome-based teaching at DTU; design a DTU course using innovative teaching methods and didactical tools to support student learning; design a DTU course using constructive alignment, assessments and formative feedback to support student sustainable learning; and take part in collegial supervision and participate in the development of courses and educational programmes at DTU. 250h

DEVELOPMENT OF TEACHING METHODS

2014-2023 Four methodological articles (Silvast & Virtanen, 2023; 2019; 2014; Virtanen & Silvast, 2020) that are intended to be used as learning materials, presenting tools to study infrastructures on multiple scales and sites.

TRAINING OF RESPONSIBLE CONDUCT OF RESEARCH AND INNOVATION PRACTICES

2022 Theory of Science in Engineering covered topics on research integrity, research ethics, and engineering ethics which trained all DTU students to responsible conduct.

2009-2013 Research methodology teaching at the University of Helsinki, Department of Social Research (Reflexive Interviewing; Sosiaalitutkimuksen kvalitatiiviset menetelmät) covered topics on reflexivity, operational definitions, and anonymization which trained students for responsible research practices.

TEACHING AWARDS AND NOMINATIONS

2017 Nominated for the Edinburgh University Students' Association Best Dissertation Supervisor Award, 15-02-2017

SUPERVISION AND MARKING

In total, I have been a supervisor of 1 PhD thesis and chair of the assessment of 1 PhD thesis, a co-supervisor of 1 PhD, have supervised 7 master's theses, co-supervised 2 master's theses, and marked 7 master's theses, and supervised and marked 1 bachelor's thesis.

2022 Technical University of Denmark, PhD theses:

- Eva Sass Lauritsen (DTU Management), "Innovation in Danish energy companies". Main supervisor.

- Lene Gjørtler Elkjær (DTU Management), “Co-creation and Ownership Model Innovation: An Investigation of Local Actor Participation in Wind Energy Transitions”. Chair of the Assessment Panel.

Technical University of Denmark, BSc thesis:

- Marie Hoel and Andreas Stadsvold Christensen (DTU Management), “Nudging – The gentle push”. Supervisor and examiner.

2019-2020 Norwegian University of Science and Technology, PhD thesis:

- Ingvild Firman Fjellså (Department of Interdisciplinary Studies of Culture), “Exploring End-Use Flexibility in the Energy System”. Co-supervisor and external reader.

2019-2020 Norwegian University of Science and Technology, MSc thesis:

- Vebjørn Corneliussen Storvik (Department of Interdisciplinary Studies of Culture), “Greener Trondheim as a public innovation. Is Socialisation and Public Engagement the key to success?”. Co-supervisor.

2018-2019 Durham University, MSc theses:

- Junyi Zhu (Department of Anthropology, Energy and Society MSc), “Vehicle-to-Grid Technology: Commercialisation Possibilities in Beijing, China”. Supervisor and marker.
- Christopher Cano-Fernandez (Department of Anthropology, Energy and Society MSc), “What are the Prospects of a Blockchain enabled peer to peer market for power trading through distributed generation sources”. Supervisor and marker.

2016-2017 University of Edinburgh, MSc theses:

- Yue Li (Comparative Public Policy, School of Social and Political Science): “Social Acceptance of Wind Power: A Comparison between the UK and Denmark”. Supervisor and marker.
- Ashley Sapp (Science, Technology and Innovation Studies, School of Social and Political Science): “Hydroelectric Identities: An exploratory analysis of national identity, power and energy in the case of the Belo Monte Hydroelectric Complex”. Supervisor and marker.
- Jose Revatta (Science, Technology and Innovation Studies, School of Social and Political Science): “Japanese Solar PV Residential Market“. Co-supervisor and marker.
- Sebastian Klick (Science, Technology and Innovation Studies, School of Social and Political Science): “Citizen Energy Infrastructure”. Supervisor.
- Jean-Nicolas Laurent Josi (Environmental Sustainability, School of GeoSciences): “Belgium’s Energy Transition: Looking at the coming challenges by comparing a

renewable energy penetration scenario with a nuclear renaissance scenario”.
Supervisor and marker.

- Hei Chiu Yin (Environmental Sustainability, School of GeoSciences): “Energy Union Governance in the European Union and Sustainability of Scottish Electricity Systems”. Supervisor and marker.

PROJECT ACQUISITION AND COORDINATION EXPERIENCE

In total, I have acquired Work Package Leader, Principal Investigator, or Co-Investigator level grants on 11 successful bids also as part of larger teams (**Total: ~7.9M EUR**).

- 2022 Innovation Fund Denmark, public professional PhD programme, PhD project *Long-term assessment of energy technology data* together with the Danish Energy Agency. 2022-2025: **3-year full funding (Co-Supervisor)**
- 2020 European Commission, Horizon 2020, research project *Sustainable Consumer Engagement and Demand Response (SENDER)*, H2020-LC-SC3-EC-3-2020: Building a Low-Carbon, Climate Resilient Future, project partners Smart Innovation Norway, NTNU, Hypertech, CRS4, Trialog, NXTech, University of Applied Sciences of Upper Austria, Euroquality, Ecoserveis, Electrita de Alginet, WEIZ, VIT, Paragon, Austrian Institute of Technology, and Que Technologies, 2020-2024: **5.978.600 EUR (Work Package Leader)**
- 2020 NordForsk, research project *Climate Change Resilience in Small Communities in the Nordic Countries (CliCNord)*, University College Copenhagen, NTNU, Arctic University of Norway, RISE Research Institutes of Sweden, Lund University, University Centre of the Westfjords, 2021-2024: **10.976.209 NOK (Co-I of a case study)**
- 2020 The Joint Committee for Nordic research councils in the Humanities and Social Sciences, workshop series *The Increased Vulnerability due to Climate Change of Critical Infrastructure in Remote Areas in the Nordic countries (3CIRAN)*, NTNU, University College Copenhagen, Mid Sweden University, Tampere University, 2021-2023: **42.708 EUR (Lead Applicant)**
- 2019 UK Engineering and Physical Sciences Research Council (EPSRC) National Centre for Energy Systems Integration (CESI), research project *Control Rooms of the Future: Coordinating Supply and Demand in Integrated Energy Systems*, project partners Northern Gas Networks and Northern Powergrid, Durham University, 2019: **50.420 GBP (Co-I)**
- 2019 UK Research and Innovation (UKRI, former Research Councils UK), commission to update the UKERC Energy Research Landscape on Interdisciplinary Research, 2019: **2.500 GBP (PI)**
- 2017 European Commission, Horizon 2020, research project *Checking Assumptions and Promoting Responsibility in Smart Development Projects (CANDID)*, ICT-35-2016: Enabling responsible ICT-related research and innovation, University of Edinburgh, 2017: **566.290 EUR (Co-I)**

- 2015 Academy of Finland, postdoctoral researcher: **243.877 EUR (PI)** (granted after I was contracted for a 3-year Fellowship at University of Edinburgh and not carried out for personal reasons).
- 2014 Kone Foundation (Finland), 2017: **5.200 EUR (PI, total granted 31.200 EUR)**
- 2011 Jenny and Antti Wihuri Foundation (Finland): **21.000 EUR (PI)**
- 2007 Kone Foundation (Finland): **20.400 EUR (PI)**
- 2007 Research Foundation of the University of Helsinki (Finland): **15.000 EUR (PI)**

KNOWLEDGE EXCHANGE AND IMPACT

- 2021 UK Parliament POSTnote (evidence synthesis) used by Members of the House of Commons and the House of Lords and UK Parliament staff, external peer reviewer on “Differing approaches to reaching Net Zero: pathways and timing”, 29 April 2021.
- 2021 Design dialogues for the Clean Energy Transition Partnership, a major funding instrument under the Horizon Europe, responsibility for co-moderating co-design workshops for involved European national funding agencies, April-September 2021.
- 2021 ERA-Net Smart Energy Systems, Clean Energy Transition Partnership (CETP) programme dialogue. Invited speaker on interdisciplinary energy research and its evaluation, 12 February 2021.
- 2019 BEIS Seminar: EU Exit & the Energy and Climate Sectors. High-level private roundtable, invited participant, organized by Durham Energy Institute, with speaker Mark Copely (Deputy Director - EU Exit Energy & Climate Programme at UK Department for Business, Energy and Industrial Strategy), Durham, 31 January 2019.
- 2018 Durham Energy Institute response to the Commons Select Committee inquiry: Technologies for meeting Clean Growth emissions reduction targets. Contribution to written evidence on Government support on specific technologies and a ‘technology neutral’ approach, 7 December 2018.
- 2018 The Role of Societal Security and Social Sciences and Humanities in European Security Research Funding, European Societal Security Network (SOURCE) and European Societal Security Research Organisation (ESSRO), funded by the EU’s 7th framework programme, invited participant, Brussels, 9 – 10 October 2018.
- 2016 Scottish Energy Policy after Brexit. High-level private roundtable, invited participant, organized by the Institute for Public Policy Research, with speaker Paul Wheelhouse MSP (Scottish Minister for Business, Innovation and Energy), Edinburgh, 17 November 2016.
- 2016 Risk & Resilience Edinburgh, academy-industry day, invited panelist for Scottish Parliament and UK Business Continuity, University of Edinburgh, 28 January 2016.

2006-2007 Various presentations on customer studies, customer communications, risk, and sociological research in training events for Finnish energy industries, organised by Adato Energia and Tekla in Finland.

PROFESSIONAL ACTIVITIES

MEMBER OF INTERNATIONAL PEER EVALUATION COMMITTEES

2022 DTU, DTU Management, new assistant/associate professor position, Chair of the Assessment Committee.

2020 ERA-Net Smart Energy Systems Joint Call 2019 on Energy Storage Solutions (MICall19), member of the expert review panel of research proposals.

2019 ERA-Net Smart Energy Systems, member of the expert review panel of research proposals.

2018 ERA-Net Smart Grids Plus, member of the expert review panel of research proposals.

MEMBERSHIPS AND POSITION OF TRUST

2018-2022 Durham Energy Institute, Associate Fellow

2015-2022 Coordinator and Member of the Board, European Sociological Association RN08: Disaster, Conflict and Social Crisis Research Network

POSITIONS AS EDITOR OR MEMBER OF EDITORIAL BOARDS

2022-2026 Coordinating Editor, *Science & Technology Studies*, the official journal of the European Association for the Study of Science and Technology

2014-2022 Editor, *Science & Technology Studies*, the official journal of the European Association for the Study of Science and Technology

REFEREE FOR SCIENTIFIC AND SCHOLARLY JOURNALS

2013-2022 Manuscript review for: *Nature Communications*; *Science, Technology, & Human Values*; *Technology Analysis & Strategic Management*; *Environmental Sociology*; *Cultural History*; *Journal of Cultural Economy*; *Tecnoscienza: Italian Journal of Science & Technology Studies*; *Safety Science*; *World Development*; *Urban Studies*; *History & Anthropology*; *Environment & Planning D*; *Energy Research & Social Science*; *Routledge Studies in Energy Policy*; *Journal of Engineering and Technology Management*; and *Journal of Urban Technology*.

ADMINISTRATIVE EXPERIENCE

2022 DTU, DTU Management, Division for Responsible Innovation Design. Course responsible role in a massive course of 450 students, chairing and coordination of several assessment procedures.

- 2021 Nordic Energy Research, research funding call management in large-scale EU and Nordic research funding on smart energy systems and energy modelling.
- 2019-2020 Centre for Energy, Climate and the Environment Research Group, Department of Interdisciplinary Studies of Culture, Norwegian University of Science and Technology, deputy co-coordinator of the group.
- 2015-2017 Science, Technology and Innovation Studies Seminar Series, School of Social and Political Science, University of Edinburgh, co-coordinator.
- 2015-2016 Network for Early Career Energy Researchers, interdisciplinary network by the School of Engineering and the School Social and Political Science, University of Edinburgh, co-organizer.
- 2014 “Disasters, Conflicts and Social Crises: Causes, Impacts and Responses.” University of Crete, European Sociological Association RN08: Disaster, Conflict and Social Crisis Research Network, Rethymno, Greece, a member of the organizing committee, 18 – 19 September 2014.
- 2012 “The Debt Crisis in the Eurozone (EZ): Social Impacts.” Aegean University, European Sociological Association RN08: Disaster, Conflict and Social Crisis Research Network, Mytilene, Greece, a member of the organizing committee, 13 – 14 September 2012.
- 2012 “Second Aalto Event on Science and Technology Studies: Energy in Society.” Aalto University School of Business and the Helsinki Institute for Science and Technology Studies, coordinator and member of the scientific committee, 5 – 6 November 2012.

CONFERENCE ACTIVITIES

INVITED TALKS

- 2022 “A Sociology of Interdisciplinarity: The Dynamics of Energy Research.” Keynote speech, Science Studies Symposium, Helsinki, 9-10 June 2022.
- 2022 “On Theory-Methods Packages in Science and Technology Studies.” STS Methods Lab, STS research group, University of Oslo, 17 February 2022. (With Mikko J. Virtanen.)
- 2022 “On Theory-Methods Packages in Science and Technology Studies.” Colloquium on the Biographies of Artifacts and Practices, online, 10 January 2022. (With Mikko J. Virtanen.)
- 2021 “Producing the ‘user’ in smart technology projects: smart grids and smart metering infrastructure.” Workshop: How Smart Machines Will Revolutionize the World, University of Graz (virtual), 17 June 2021.
- 2019 “The Sociology of Energy Infrastructures: Observing the Unexpected.” UiO:Energy Forum, University of Oslo, 27 November 2019.

- 2019 “Electricity Infrastructures, Risk and Resilience.” European Commission Joint Research Centre Workshop on ‘Extreme Events and Energy Transition’, 23 – 27 September 2019.
- 2018 “Crossing Borders: Social Sciences and Humanities Perspectives on European Energy Systems Integration.” Anglia Ruskin University, Cambridge, 24 September 2018.
- 2018 “Infrastructure Risk and Biography of Artefacts: Multiple Dynamics and Temporalities.” University of Sussex (SPRU), Brighton, 17 April 2018.
- 2017 “Control Room Ethnography: Maintenance of Electricity Networks and Markets.” National Museum of Scotland, Edinburgh, 20 November 2017.
- 2017 “Energy Systemic Risk.” Workshop on ‘Systemic Risk’, Cambridge University, 30 June 2017.
- 2016 “Scotland in an Integrated European Energy System.” University of Bergen, 20 June 2016.

CONFERENCE AND WORKSHOP ORGANISATION

- 2022 3CIRAN (Increased Vulnerability due to Climate Change of Critical Infrastructures in the Nordic Countries), leadership and co-organization, NOS-HS (The Joint Committee for Nordic research councils in the Humanities and Social Sciences), workshops engaging policy practitioners and researchers, Åre (Sweden), 18-21 May 2022 and Copenhagen (Denmark), 31 October 2022.

PANELS ORGANISED

- 2020 “Applied Interdisciplinary Sustainable Transitions Research.” European Association for the Study of Science and Technology (EASST) and Society for Social Studies of Science (4S) Conference, Prague (virtual), 18-21 August 2020. (With Ruth Woods.)
- 2019 “Disaster, Conflict, and Social Crisis.” Main responsibility for the network sessions at the 14th European Sociological Association Conference, Manchester, UK, 20-23 August 2019.
- 2017 “Critical Infrastructure Risks and Emergent Responses.” 13th European Sociological Association Conference, Athens, Greece, 29 August – 1 September 2017.
- 2015 “Modeling Uncertainties, Producing Differences.” Semiplenary panel with the speakers Prof Paul N. Edwards (Michigan) and Prof Robin Williams (Edinburgh). 12th European Sociological Association Conference, Prague, Czech Republic, 25 – 28 August 2015. (Together with Turo-Kimmo Lehtonen, University of Tampere, Finland.)

PAPERS PRESENTED

- 2022 “Energy Supply as an Information Infrastructure: A Reconceptualisation of Governance by Infrastructure.” Governance by Infrastructure Workshop, University of Lausanne, organized by ISSTI (Edinburgh) and STS Lab, SSP-UNIL, 16-18 March 2022. (Together with Robin Williams and Sampsa Hyysalo.)
- 2020 “Flexibility of Real-Time Supply-Demand Relations: The Changing Politics of Energy Control Rooms in UK and Finland.” Histories of Flexibility Workshop, UK CREDS project, Lancaster University, 9-10 January 2020. (Together with Simone Abram.)
- 2019 “Infrastructure Resilience and Energy Systems Integration.” 14th European Sociological Association Conference, Manchester, UK, 20-23 August 2019. (Together with Simone Abram.)
- 2019 “Epistemic Values in Energy Modelling.” The Eindhoven Energy Ethics Workshop on ‘Fair Energy Transition’, Eindhoven University of Technology, 25 – 26 January 2019. (Together with Erik Laes, Gunter Bombaerts, and Simone Abram.)
- 2018 “Modelling the Future?” 15th EASA (European Association of Social Anthropologists) Biennial Conference, Stockholm, 14 – 17 August 2018. (Together with Simone Abram.)
- 2017 “Infrastructure Risk and Biography of Artefacts: Multiple Dynamics and Temporalities.” 13th European Sociological Association Conference, Athens, 29 August – 1 September 2017. (Together with Mikko J. Virtanen.)
- 2017 “Making Energy Security: A Socio-Technical Systems Perspective on Europe's Internal Electricity Market.” European Consortium for Political Research General Conference, University of Oslo, 6-9 September 2017. (Together with Ronan Bolton, Mark Winskel, and Matthias Schimmel.)
- 2016 “Infrastructure Risk and Biography of Artefacts: Multiple Dynamics and Temporalities.” Society for Social Studies of Science (4S) and European Association for the Study of Science and Technology (EASST) conference, Barcelona, 31 August - 3 September 2016.
- 2016 “Understanding the European Energy Union: a Single Concept for Many Systems.” 39th International Association for Energy Economics (IAEE) Conference, Bergen, Norway, 19-22 June 2016. (Together with Ronan Bolton and Mark Winskel.)
- 2015 “Security and Risk in a Liberalized Electricity Infrastructure: Does Competition Compromise Resilience?” 12th European Sociological Association Conference, Prague, Czech Republic, 25-28 August 2015.
- 2014 “Normal Accidents vs. High Reliability: The Emergence and Non-Emergence of Low-Probability, High-Consequence Risks in Electricity Supply.” Global Systemic Risk Luncheon Presentation, Princeton University, NJ, US, 9-12-2014.

2014 “Two Kinds of Risk: Enacting Markets and Security in Neighboring Electricity Control Rooms.” Nordic Worlds: Energy & Environment, Cornell University, Ithaca, NY, US, 19-11-2014.

LANGUAGES

English	speaking, reading, writing: working language
Danish	speaking, reading, writing: level B1, currently enrolled at level B2
Norwegian	speaking, reading, writing: level B1/B2
Swedish	speaking, reading, writing: public administration in the second official language
German	speaking: basic; reading: competent; writing: basic
Finnish	speaking, reading, writing: native