

Koen van Greevenbroek

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Education & Career

- 2025– **Postdoc at Sustainable Solutions Lab, Stanford University**
- Project: trade-offs and synergies between health and environmental impacts of the global food system.
 - Principle investigators: Ken Caldeira & Steve Davis
- 2024 **PhD in Energy Systems Modelling, UiT The Arctic University of Norway**
- Thesis title: “Near-optimality and robustness in energy systems modelling”
 - Supervisors: Alexander Hörsch & Marianne Zeyringer
- 2020 **MSc in Mathematics, Universität Bonn**
- Master’s thesis: “Clustering Ordered Point Sequences Using Medians”
 - Supervisor: Anne Driemel
- 2017 **BSc in Mathematics, Simon Fraser University**
- Bachelor’s thesis: “The Largest Face in Maps with Few Faces”
 - Supervisor: Marni Mishna

Research Interests

- Modelling complex systems to gain policy-relevant insights for climate mitigation and adaptation.
- Participatory modelling to map out preferences within feasible system design space.
- The intersection of climate, land use, food systems and energy systems.
- Social preferences, equity and justice in societal transformation.

Selected Publications

- **K. v. Greevenbroek**, J. Schmidt, M. Zeyringer, *et al.*, “Little to lose: The case for a robust european green hydrogen strategy”, *Joule*, vol. 9, no. 7, 2025. DOI: 10.1016/j.joule.2025.101974
- **K. v. Greevenbroek***, A. Grochowicz*, M. Zeyringer, *et al.*, “Trading off regional and overall energy system design flexibility in the net-zero transition”, *Nature Sustainability*, vol. 8, no. 6, pp. 629–641, 2025. DOI: 10.1038/s41893-025-01556-2
- F. Lombardi, **K. v. Greevenbroek**, A. Grochowicz, *et al.*, “Near-optimal energy planning strategies with modeling to generate alternatives to flexibly explore practically desirable options”, *Joule*, vol. 9, no. 11, 2025. DOI: 10.1016/j.joule.2025.102144

* Equal contribution

- O. Vågerö, K. v. Greevenbroek, A. Grochowicz, *et al.*, “Exploring near-optimal energy systems with stakeholders: A novel approach for participatory modelling”, 2025. arXiv: 2501.05280
- C. Cheng*, K. v. Greevenbroek*, and I. Violen*, “The competitive edge of Norway’s hydrogen by 2030: Socio-environmental considerations”, *International Journal of Hydrogen Energy*, vol. 85, pp. 962–975, 2024. DOI: 10.1016/j.ijhydene.2024.08.377
- A. Grochowicz*, K. v. Greevenbroek*, and H. C. Bloomfield, “Using power system modelling outputs to identify weather-induced extreme events in highly renewable systems”, *Environmental Research Letters*, vol. 19, no. 5, p. 054038, 2024. DOI: 10.1088/1748-9326/ad374a
- A. Grochowicz*, K. v. Greevenbroek*, F. E. Benth, *et al.*, “Intersecting near-optimal spaces: European power systems with more resilience to weather variability”, *Energy Economics*, vol. 118, p. 106496, 2023. DOI: <https://doi.org/10.1016/j.eneco.2022.106496>

Contracted work

Jan 2025	Half-day internal workshop on the PyPSA-Eur modelling framework and data analysis at Rystad Energy.
Feb 2024	Three day workshop on the PyPSA-Eur modelling framework for BOKU & Wien Energie.

Conferences

Presentations

- “Diverse developments of European green hydrogen production”, *INFORMS*, Seattle, WA (October 2024)
- “The prospects of European green hydrogen production”, *EGU*, Vienna (April 2024)
- “Identifying weather stress events from power system optimisation outputs”, *INFORMS*, Phoenix, AZ (October 2023)
- “Enabling agency: trade-offs between regional and European design flexibility in renewable energy systems”, *EGU*, Vienna (April 2023)
- “Modelling Longyearbyen’s transition to renewables”, *PyPSA User Meetup*, digital (October 2022)
- “Intersecting near-optimal feasible spaces: robust energy system designs over multiple decades of weather data”, *OR*, Karlsruhe (September 2022)
- “Resilience of energy systems over 41 weather years”, *SPATUS*, Oslo (May 2022)

Posters

- “Little to Lose: the case for a robust European green hydrogen strategy”, *AGU*, New Orleans, LA (December 2025)
- “Using power system modelling outputs to identify weather-induced extreme events”, *NextGen Energy Workshop*, digital (September 2024)
- “Effect of different weather years on policymakers’ decision space”, *NextGen Energy Workshop*, digital (September 2022)

Outreach

Writing

- “The weather making trouble for the future electricity grid”¹ (Norwegian), *Forskning.no blog* (18 March 2024)
- “Strong disagreement about the energy transition in Longyearbyen”² (Norwegian), *Forskning.no blog* (18 March 2024)
- “Is nuclear power the answer to a Norwegian energy shortage?”³ (Norwegian), *Forskning.no blog* (18 December 2023)
- “We need independent research, not wishful thinking about nuclear power.”⁴ (Norwegian), *Aftenposten* (26 June 2023)
- “Nuclear power is not necessary for Norway. It would not be profitable either.”⁵ (Norwegian), *Aftenposten* (7 June 2023)

Talks

- “Math meets the environment: modelling wind power in Norway” (Norwegian), *School tour presentation series Forskerne Kommer*, Nordreisa, Kvænangen, Alta, Målselv, Tromsø (September 2023)
- “Does Norway need wind power?”, *Pint of Science*, Tromsø (May 2023)

Teaching

- August 2024 Guest-lectured 4 days in an intensive course on energy systems modelling in the Arctic at UNIS, Longyearbyen.
- 2020–2024 25% teaching assistant position at UiT.
- Prepared and gave lectures, developed course material, graded assignments and mentored undergraduate students.
 - Completed a 30 hour course on university pedagogics, including both theoretical and practical components.
 - Developed of a lecture on how to give constructive feedback in a teaching context.

Service

- 2023 Elected representative for temporary employees on board of the Faculty of Science and Technology (UiT).
- 2022 Elected board chair for TODOS, the interest organisation for PhDs and postdocs at UiT.
- 2021 Elected chair of academic affairs for TODOS, the interest organisation for PhDs and postdocs at UiT.

¹<https://blogg.forskning.no/blogg-energiomstillinga/vret-som-skapar-trobbel-for-framtidas-straumnett/2358789>

²<https://blogg.forskning.no/blogg-energiomstillinga/stor-usemje-om-energiomstilling-i-longyearbyen/2339136>

³<https://blogg.forskning.no/blogg-energiomstillinga-energi-kjernefysikk/er-kjernekraft-svaret-pa-norsk-energimangel/2297515>

⁴<https://www.aftenposten.no/meninger/debatt/i/JQXRW7/vi-treng-uavhengig-forskning-ikkje-droeymetenking-om-kjernekraft>

⁵<https://www.aftenposten.no/meninger/debatt/i/3E7EzP/kjernekraft-er-ikkje-naudsynt-for-noreg-det-vil-heller-ikkje-loenna-seg>

Scholarships and Award

- 2021 *Best Paper Award (1st Energy Informatics.Academy Asia Ph.D. Workshop)*. For “Flexible time aggregation for energy systems modelling”
- 2018–2020 *Qualifying Scholarship (Universität Bonn)*. Full scholarship, living expenses.
- 2017 *Undergraduate Research Prize (Simon Fraser University)* Received for research project in discrete mathematics with Jonathan Jedwab.
- 2014–2017 *Ronald Heath Full Entrance Scholarship (Simon Fraser University)* Full scholarship, tuition and living expenses.

Languages

Native / fluent

- Norwegian
- English
- Dutch

Working proficiency

- German
- Spanish

References

Available upon request.

February 2, 2026