Seth van Wieringen

⚲ Arnhem, Nederland   ✉ s.w.p.vanwieringen@gmail.com   ☎ 06 57104496

🔗 sethvanwieringen.dev   🔗 seth-van-wieringen   🔗 theseththruth

About

Energy systems modeller who builds tools that make complexity accessible. I bring hands-on consulting experience with a drive to teach and research. Physics teacher by qualification, coach by nature. Abstract thinker, excellent communicator. I clear the path and bring others along.

Education

MSc   **University of Twente**, Sustainable Energy Technology & Mechanical Engineering (Design Engineering)   Enschede, Netherlands — Sept 2018 – Dec 2021
  - Graduated Cum Laude in both master programmes
  - Thesis: Transitioning to cost-optimal renewable energy systems under uncertainty (9.2/10). *Supervisors: Sebastiaan Trip (UT), Yashar Hajimolana (UT), Emiel van Druten (W+B)*

    2G Energietechnik GmbH, Research internship in Multiphysics Engineering   Heek, Germany — Sept 2019 – Dec 2019
  - Multi-phase CFD analysis of urea-water solution mixing and evaporation for SCR in decentralised CHP units (9/10)

BSc   **University of Twente**, Mechanical Engineering   Enschede, Netherlands — Sept 2014 – Aug 2018
  - Thesis: Blending of pyrolysis oil, biodiesel and sustainable alcohols for maritime diesel engines (8.3/10)
  - Minor BioRobotics (2016)
  - Minor Teaching Physics (2016)

Experience

Witteveen+Bos, Energy Systems Modeller, Project & Team Manager   Deventer, Netherlands — Jan 2021 – present — 5 years 1 month
  - Built a centre of expertise on energy system modelling by developing and applying in-house optimisation frameworks for national policy advice
  - Lead modeller on national policy studies: Scenario Study Nuclear Energy (2022, Ministry of Climate), CO2-free electricity system 2035 (2024, National Program Energy), pMIEK infrastructure prioritisation (2025, Zuid-Holland), NPE meta-study (2023, National Program Energy)
  - Broad professional experience using PyPSA(-eur) and the Energy Transition Model (API) in consulting
  - Research and model development on semi-autonomous energy systems using innovative data architectures and agent-based modelling
  - Full-stack development of energy decision-support tools
  - Founded and led W+B company wide AI adoption program (2024-2026); Team leader AI Development team (2025-2026)
  - Project and team management, professional and stakeholder communication, strategic advisory

University of Twente, Guest Lecturer, Energy Systems Integration

Enschede, Netherlands
Sept 2024 – present
1 year 5 months

- Co-developed course content including lecture materials and course project manual
- Developed and delivered lecture on energy system modelling for MSc course Energy Systems Integration
- Created hands-on PyPSA workshop with code repository, drawing from the Grid Outlook studies and National Program Energy
- Case studies drawn from industry challenges: bridging industry challenges with academic curriculum

BPR Solar, Project & Quality Manager

Netherlands
Jan 2018 – Jan 2021
3 years 1 month

- Project management during construction phase of large-scale solar parks (30+ MWp)
- Digitisation of quality management at European EPC level

University of Twente Pre-University, Working Student

Enschede, Netherlands
Jan 2016 – July 2017
1 year 7 months

- Developed and delivered workshops introducing high school students to academic technical studies

Publications

Cable pooling to add renewables amid grid congestion: Exploring optimal integration of solar and batteries with existing onshore wind under cost uncertainty

2025

Emiel van Druten, *Seth van Wieringen*

10.1016/j.segan.2025.101971 (Sustainable Energy, Grids and Networks)

Research Interests

- Energy system optimisation under uncertainty: robust decision-making for infrastructure planning when costs, policies, and technologies evolve
- Grid integration of variable renewables: cable pooling, storage co-location, and network-aware capacity expansion
- Bridging models and policy: explainability of optimisation outcomes, stakeholder engagement, and translating academic methods to actionable policy advice
- Agent-based approaches to energy markets: representing actor behaviour and market dynamics beyond perfect-foresight optimisation

Skills

Energy System Modelling: PyPSA, Energy Transition Model (API), linear/mixed-integer optimisation, agent-based modelling, exploratory modelling analysis, uncertainty quantification, scenario development, co-creation, stakeholder engagement, explainability and desirability of modelling outcomes, spatial analysis, techno-economic analysis

Research: Academic writing, peer-reviewed publishing, literature review, methodology development, data analysis, reproducible workflows

Data & Visualisation: Large dataset analysis, interactive dashboards, Plotly, Matplotlib

Consulting: Technical reporting, presenting results, stakeholder management, government relations (ministries, TKI, RVO, provinces), proposal development

Project & Team Management: Consortium collaboration, budgeting, financial control, timelines, quality assurance, work breakdown structures, team leadership, team and personal capability development, coaching

Programming: Python, TypeScript, JavaScript, SQL, Java

Languages: Dutch (native), English (fluent)

Certifications

Physics Teaching Qualification: Tweedegraads Onderwijsbevoegdheid - University of Twente, 2018

Professional Affiliations

- Sector Lead Energy Systems, Klimaat en Energie Koepel (KEK) - cross-sectoral network of 1000+ young professionals in energy and climate transition