Giacomo Falchetta

Edificio Porta dell'Innovazione - Piano 2, Via della Libertà, 12 - 30175 Marghera-Venezia (VE), Italia

Research areas:

Energy & Development, Climate Change Impacts, Inequality, WEFE Nexus, GIS analysis

Current positions

- **Researcher (tenured) at** the **Euro-Mediterranean Center on Climate Change (CMCC), ECIP division – RFF-CMCC European Institute on Economics and the Environment (EIEE) (January 2024 – present).**

- **Research Scholar (part time)** at the **Energy, Climate and Environment** program at **IIASA – International Institute for Applied Systems Analysis** in Laxenburg, Austria. **(October 2021 – present).**

Previous academic experience

- **Postdoctoral researcher** at the **Department of Economics**, **Ca' Foscari University of Venice** in Venice, Italy. Scientific affiliations with **Euro-Mediterranean Center on Climate Change (CMCC)** and **RFF-CMCC European Institute on Economics and the Environment (EIEE) (January 2022 – December 2023).**
    - **Project:** ERC – ENERGYA (PI: Prof. Enrica De Cian)

- **Postdoctoral researcher** at the **Department of Economics** of the **Free University of Bozen-Bolzano** in Bolzano, Italy. **(January 2021 – January 2022).**

- **Doctoral researcher** at **FEEM - Fondazione Eni Enrico Mattei** in Milan, Italy. **(November 2017 – December 2021).**

- **Visiting PhD student** at **PBL Netherlands Environmental Assessment Agency** in The Hague, the Netherlands. **(January 2020 – March 2020).**

- **Guest Research Scholar (visiting PhD student)** at the *Energy Program (ENE)* of **IIASA, International Institute for Applied Systems Analysis** in Laxenburg, Austria. **(November 2018 – February 2018).**

Previous non-academic employment and activities

- **Advisory Council Member (volunteer) at EarthArXiv.** (December 2020 – December 2022).

- **Trainee** at **Terra Institute**, in Bressanone - Brixen, Italy. (February 2016 – July 2016). Consultancy for sustainability, sustainability reporting, CSR and sustainable

development, business strategy, product development and sales for organic and sustainable agriculture.

- **Intern** at the *European and International Affairs Office* at the **Comune di Venezia**, in Venice, Italy (July 2014 - September 2014). Collaboration and support activities in the management of projects funded by the European Union including PUMAS, Eurocities, Central Markets and Sustcult.

Education

- **PhD** at the **Department of International Economics, Institutions and Development** of the **Catholic University of Milan**, in Milan, Italy. **(November 2017 – July 2021).** *Grade: Cum Laude.* **Dissertation: "***Essays on Energy and Development in sub-Saharan Africa: Energy Access, Climate Change, and the Nexus"* **Supervisors:** Prof. Roberto Zoboli and Dr. Shonali Pachauri

  TA experience:
  - Econometrics (Stata) for the MSc. course in Policy Evaluation and Decision Techniques (Prof. Uberti) (9 hours)
  - Spatial Statistics (GeoDa) for the BSc. course in Quantitative Methods for Social Sciences (Prof. Uberti) (16 hours).

- **Master of Science** in Environmental Economics and Climate Change at **the London School of Economics and Political Science** (LSE) in London, UK**. (September 2016 – September 2017).** *Grade: Merit.* **Dissertation: "***Ecosystem Services, Land Use Change, and Economic Growth: The long-run trends in the significance and in the value of natural capital".* **Supervisor:** Dr. Roger Fouquet. Grade: *Distinction*.

- **Erasmus+ student** at the Faculty of Economics and Social Sciences at the **University of Hamburg**, in Hamburg, Germany. **(October 2014 – March 2015).**

- **Bachelor of Science** in Economics and Social Sciences at the **Free University of Bolzano-Bozen**, in Bolzano-Bozen, Italy. **(October 2012 – October 2015).** *Grade: 107/110.* **Dissertation**: **"***The Sunk Cost Fallacy: A Literature Review and an Empirical Test".* **Supervisor:** Prof. Alessandro Fedele. Grade: *Distinction*.

Technical skills

- Data analysis, statistics, and econometric analysis with R (proficient), Python (intermediate) and Stata (intermediate)
- Geo-spatial analysis:(Py)QGIS, R, Google Earth Engine (proficient)
- Word, Excel, Power Point, Github, LaTeX

Languages

- **Italian**: native speaker

- **English**: professional working proficiency **(C1/2)** certified by the **IELTS English Language Certificate, Band 8 (**released by the *British Council* on Dicember, 15th 2015)

- **German**: professional working proficiency **(C1)** certified by the **Goethe Zertifikat C1,** score 80.5/100 (released by the *Goethe Institute* on June 10th 2015)

- **French**: basic knowledge (**B1/B2).**

Peer-reviewed publications

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1. Mazzone, A., De Cian, E., **Falchetta, G.** et al. (2023). Understanding systemic cooling poverty. Nature Sustainability
2. Malpede M., **Falchetta, G.** & Shayegh. S. Mosquitoes and Potatoes: How Climate-Induced Diseases Impede Development. Environmental and Resource Economics
3. **Falchetta G.,** Semeria, F., Giordano, V. Pachauri, S., Byers, E. and Tuninetti, M. (2023). Solar irrigation in sub-Saharan Africa: economic feasibility and development potential. Environmental Research Letters
4. Dagnachew, A., Choi, S., and **Falchetta, G**. Energy planning in Sub-Saharan African countries needs to explicitly consider productive uses of electricity Forthcoming at Scientific Reports
5. Carr, D., **Falchetta, G.;** Wing, I.S. (2023) Population Aging and Heat Exposure in the 21st Century: Which U.S. Regions Are at Greatest Risk and Why? *The Gerontologist*
6. Pelz S., Pachauri, S. and **Falchetta, G**. (2023). Short-run effects of grid electricity access on rural non-farm entrepreneurship and employment in Ethiopia and Nigeria. *World Development Perspectives*
7. Di Lascio, M., **Falchetta, G**., Ferrari, D. (2022) Change detection from high-resolution airborne laser scans using penalized composite likelihood screening. *Spatial Statistics*
8. Edwards, M. et al. (2022) Satellite Data Applications for Sustainable Energy Transitions. *Frontiers in Sustainability*
9. Hammad, A.T. and **Falchetta, G.** (2022). Probabilistic forecasting of remotely sensed cropland vegetation health and its relevance for food security. *Science of the Total Environment*
10. **Falchetta, G.** et al. (2022). A renewable energy-centred research agenda for planning and financing Nexus development objectives in rural sub-Saharan Africa. *Energy Strategy Reviews*
11. Edwards, M. et al. (2022). Satellite Data Applications for Sustainable Energy Transitions. *Frontiers in Sustainability.*
12. **Falchetta, G.**, Michoud, B., Hafner, M., and Rother, M. (2022). Harnessing finance for a new era of decentralised electricity access: A review of private investment patterns and emerging business models. *Energy Research & Social Science*
13. **Falchetta, G.** (2021). Energy access investment, agricultural profitability, and rural development: time for an integrated approach. *Environmental Research: Infrastructure and Sustainability*
14. Moner-Girona, M., Kakoulaki, G., **Falchetta, G.**, Taylor, N. and Weiss, D. (2021). Achieving universal electrification of rural healthcare facilities in sub-Saharan Africa with decentralised renewable energy technologies. *Joule*
15. Hunt et al. (2021). Hydropower and seasonal pumped hydropower storage in the Indus basin: pros and cons. *Journal of Energy Storage.*
16. **Falchetta, G.,** Hammad, H., Noussan, M. (2021). Comparing paratransit in seven major African cities: an accessibility and network analysis. *Journal of Transport Geography.*
17. **Falchetta, G.,** Stevanato, N., Moner Girona, M, Mazzoni, D., Colombo, E., Hafner, M. (2021). The M-LED platform: advancing electricity demand assessment for communities living in energy poverty. *Environmental Research Letters.*
18. **Falchetta, G.,** Golinucci, N., Noussan, M., and Rocco, M.V. (2021). Environmental and energy implications of meat consumption pathways in sub-Saharan Africa. *Sustainability.*

19. Hammed, A. T., **Falchetta, G.,** Wirawan, I. B. M**.** (2021). Back to the fields? Increased agricultural land greenness after a COVID-19 lockdown. *Environmental Research Communications.*
20. **Falchetta, G.** and Mistry M. (2021). The role of residential air circulation and cooling demand for electrification planning: implications of climate change in subSaharan Africa. *Energy Economics*.
21. **Falchetta, G.**, Dagnachew. A, Hof, A. and Milne D. (2021). The role of regulatory, market and governance risk for electricity access investment in subSaharan Africa. *Energy for Sustainable Development*.
22. **Falchetta, G.** and Noussan M. (2021) Electric vehicle charging network in Europe: an accessibility and deployment trends analysis. *Transportation Research Part D.*
23. **Falchetta, G.**, Hammad, A.T., Shayegh S. (2020). Planning universal accessibility to public healthcare in sub-Saharan Africa. *Proceedings of the National Academy of Sciences (PNAS)*.
24. Hunt, J., **Falchetta, G**., Zakeri B. et al. (2020). Hydropower impact on the river flow of a humid regional climate. *Climatic Change*
25. **Falchetta, G.**, Pachauri, S., Byers, E., Danylo, O. & Parkinson, S. C. (2020). Satellite Observations Reveal Inequalities in the Progress and Effectiveness of Recent Electrification in Sub-Saharan Africa. *One Earth*.
26. **Falchetta G.**, Kasamba C., and Parkinson S. (2020). Monitoring hydropower reliability in Malawi with satellite data and machine learning. *Environmental Research Letters.*
27. **Falchetta, G.**, Hafner M., Tagliapietra S (2020). Least-Cost Pathways to 100% Electrification in East Africa by 2030. *The Energy Journal*.
28. Hunt, J., Zakeri B., **Falchetta G.**, Nascimento A., Wada Y. and Riahi K. (2019) Mountain Gravity Energy Storage: A new solution for closing the gap between existing short- and longterm storage technologies. *Energy*.
29. Johnson N., Burek P., Byers E., **Falchetta G.** et al. (2019) Integrated solutions for the waterenergy-land nexus: Are global models rising to the challenge? *Water.*
30. **Falchetta, G.**, Pachauri, S., Parkinson, S., Byers, E. (2019) A high-resolution gridded dataset to assess electrification in sub-Saharan Africa. *Nature Scientific Data.*
31. **Falchetta, G.**, Gernaat, D., Hunt, D., Sterl, S. (2019) Hydropower dependency and climate change in sub-Saharan Africa: a nexus framework and evidencebased review. *Journal of Cleaner Production.*
32. **Falchetta, G.**, Noussan, M. (2019) Interannual Variation in Night-Time Light Radiance Predicts Changes in National Electricity Consumption Conditional on Income-Level and Region. *Energies.*

Book contributions

- **Falchetta, G**. and Tagliapietra, S. (2021) Economics of access to energy. In*:* Hafner, M. & Luciani, G. *Handbook of International Energy Economics*. Palgrave Macmillan.

- Hafner, M.; Tagliapietra, S.; Occhiali, G.; **Falchetta, G**. (2019). Renewables for Energy Access and Sustainable Development in East Africa. SpringerBriefs in Energy.

Main conference presentations

- ***European Geoscience Union 2023:*** **Vienna, April 2023**
- ***IAMC Conference 2022:*** **Maryland, December 2022**
- ***European Geoscience Union 2022:*** *Quantifying the economic feasibility of solar irrigation in sub-Saharan Africa. Online. 23rd May 2022. Oral presentation.*

- ***AMENET: Africa, the Mediterranean and Europe in the era of global integration 2021****. Private investment in decentralised energy access: towards new financing strategies? October 2021, online.*
- ***Night lights workshop 2021.*** *Satellite observations reveal inequalities in the progress and effectiveness of recent electrification in sub-Saharan Africa. February 2021, online.*
- ***AGU Fall Meeting 2020:*** *M-LED: a Multi-sectoral Latent Electricity Demand Assessment Platform for Energy Access Planning and Nexus Implications Evaluation. Online. December 2020. Poster*
- ***European Geoscience Union 2020:*** *Energy and environmental implications of meat consumption pathways in sub-Saharan Africa. Online. 7th May 2020. Oral presentation.*
- ***International Energy Workshop 2019:*** *A high-resolution gridded dataset to assess electrification in sub-Saharan Africa. Paris, 4th June 2019. Oral presentation.*
- ***European Geoscience Union 2019:*** *Monitoring Climate Impact on Hydropower and Electricity Consumption with Satellite Data: Preliminary Evidence from Malawi. Vienna, 8th April 2019. Oral presentation.*

Reviewer for scholarly journals

Expert Reviewer of the Second Order Draft of the IPCC's WGII and WGIII contribution to the Sixth Assessment Report (AR6) Nature Climate Change (Nature) Nature Communications (Nature) Scientific Data (Nature) Mitigation and Adaptation Strategies for Climate Change (Elsevier) Energy Economics (Elsevier) Energy Policy (Elsvier) The Energy Journal (IAEE) Energy Research and Social Science (Elsevier) Energy Strategy Reviews (Elsevier) Sustainability: Science, Practice and Policy (Taylor & Francis) African Geographical Review (Taylor & Francis) Advances in Geosciences (Copernicus) Resources, Environment and Sustainability (Elsevier) F1000Research

Theses co-supervision

- Giammauro Soriano (MSc. Comparative International Relations – Global Studies, Ca' Foscari University of Venice). The role of hydropower in the broader context of climate change and sustainable development. Evidence from sub-Saharan Africa. March 2022

- Su-Min Choi (MSc. Sustainable Energy Systems, Utrecht University), Developing a Bottom-Up Methodology to Project Electricity Demand for Productive Uses in sub- Saharan Africa in 2030 in IMAGE. October 2020

- Paolo Cornali (MSc. Energy Engineering, Politecnico di Milano), Integrating agricultural uses of water in geospatial electrification planning. The case study of Kenya. April 2020

References

- Dr. Shonali Pachauri – International Institute for Applied Systems Analysis, pachauri@iiasa.ac.at
- Prof. Roberto Zoboli – Catholic University of Milan, roberto.zoboli@unicatt.it

- Prof. Manfred Hafner – Sciences Po & John Hopkins SAIS, manfred.hafner@sciencespo.fr

Besides work

I’m into guitar jams, cooking, and water-related activities.

Last updated on Feb 2024