Jun Gao

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Education

Harvard University — Cambridge, the U.S.
Ph.D. in Public Policy — *Aug. 2022 – June. 2027 (Expected)*
Fields: environmental economics, trade and spatial economics.

University of Oxford — Oxford, the U.K.
M.Phil. in Economics — *Sep. 2020 – Jul. 2022*
Visiting Student — *Sep. 2018 – Jul. 2019*

Tsinghua University — Beijing, China
B.Eng. Environmental Policy and Management — *Aug. 2016 – Jul. 2020*

Work in Progress

- **Temperature Shocks and Electricity Trade**

  The significant temporal variations in and spatial mismatch between electricity generation and consumption indicate gains from trading and transmitting electricity across space. The size of trading and the value of expanding trade capacity depend crucially on demand and supply profiles. Correlation in demand and supply shocks across countries, for example induced by correlated temperature shocks and extreme weather events, affect which countries trade more with each other. This project first shows theoretically how correlation in shocks affects trading patterns: 1) negative correlation in shocks increases volatility in unconstrained trade flows between countries; 2) shock correlation does not map simply to the aggregate level of unconstrained trade flows and the shadow value of trade constraints, which depends on the full distribution of shocks and the resulting net trade positions. To quantify value of expanding trade capacity (i.e. transmission capacity in the electricity sector), I empirically estimate countries' supply and demand responses to temperature shocks and derive the distribution of shadow value of capacity constrains, which implies where transmission expansion should be more beneficial.

- **Data Centers and the Power System** (*with Katie Zhang*)

- **Misallocation of Renewables**

Selected Grants & Awards

Vicki Norberg-Bohm Fellowship, Harvard University	2023-2024
IQSS research grant, Harvard University	2023-2024
Summer Predissertation Fellowship, Harvard University	2023
MPhil Examination Prize, University of Oxford	2021
Outstanding Graduate of Beijing	2020
Outstanding Graduate of Tsinghua University	2020
Rhodes Scholarship	2019
National Scholarship (top scholarship in Chinese universities)	2019
Special Scholarship (top scholarship at Tsinghua University)	2019

Teaching and Tutorial Experience

- Teaching Fellow, Economics of Climate Change and Environmental Policy, Harvard College — Spring 2025
- Teaching Fellow, The Global Economy, Harvard College — Fall 2024

Other Writings

- Michael Grubb et al. "The New Economics of Innovation and Transition: Evaluating Opportunities and Risks." EEIST Reports, 2021.

- Da Zhang, Jun Gao et al. "Switching on auxiliary devices in vehicular fuel efficiency tests can help cut CO2 emissions by millions of tons." One Earth, 4(1), 135-145, 2021.
- Xiangyi Li, Jun Gao, and Su Song. "The Costs and Benefits Appraisal Tool for Transit Buses." WRI Publications, 2020.
- Minghao Zhuang et al. “Emissions of non–CO2 greenhouse gases from livestock in China during 2000–2015: Magnitude, trends and spatiotemporal patterns.” Journal of Environmental Management, 242, 40–45, 2019.

Service and Affiliations

- Ph.D. student Fellow, Harvard Environmental Economics Program (2022-present)
- Affiliate, Harvard Institute for Quantitative Social Science (2023-present)
- Co-Coordinator, Harvard Kennedy School Environmental and Social Policy Workshop (2024-2025)
- Committee Member, Kennedy PhD Student Association (2024-2025)

Skills

- Language: English, Chinese (native), Spanish (basic)
- Computer: Python, R, Stata, QGIS.