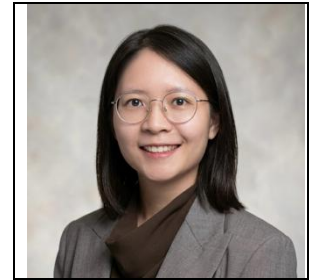


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Education

PhD, Ecology (Global Change Economics), Tsinghua University, China, 2023
MSc, Environmental Science (Environmental Planning and Management), Wuhan University, China, 2020
BSc, Environmental Science, Wuhan University, China, 2017

Academic Appointments

Presidential Assistant Professor in Environmental Science, CIS

Other Positions Held

Postdoctoral Researcher, ETH Zurich, Switzerland, 2023-2026

Awards and Honors

Best Paper Award, Global Youth Summit of Net-Zero Future and the 3rd Graduate Forum of the Global Alliance of Universities on Climate, 2021
Outstanding Postgraduate Graduate, Wuhan University, 2020
Postgraduate Academic Innovation Award, Wuhan University, 2020
National Scholarship for Postgraduates, Ministry of Education, China, 2019
Best Designed Poster Award, International Conference of Resource Sustainability, 2018

Professional Memberships

INFORMS, 2026-2027

International Society for Industrial Ecology, 2024-2027

European Geosciences Union, 2024

American Geophysical Union, 2022-2023

RESEARCH

Research Interests

Global supply chains of renewable energy technologies (solar PV, wind, heat pumps, batteries); energy system transition and net-zero pathways; carbon emissions accounting, drivers and inventories; climate and energy policy for emerging economies.

Publications

Journal Articles [Refereed]

First-authored papers

1. **Cui, C.**, Lonergan, K., & Sansavini, G. (2025). Policy-driven transformation of global solar PV supply chains and resulting impacts. *Nature Communications*, 16(1), 6742.
2. **Cui, C.**, Li, S., Zhao, W., Liu, B., Shan, Y., & Guan, D. (2023). Energy-related CO₂ emission accounts and datasets for 40 emerging economies in 2010-2019. *Earth System Science Data*, 15(3), 1317-1328.
3. **Cui, C.**, Guan, D., Wang, D., Meng, J., Chemutai, V., Brenton, P., Zhang, S., Shan, Y., Zhang, Q., & Davis, S. J. (2022). Global mitigation efforts cannot neglect emerging emitters. *National Science Review*, 9(12), nwac223.
4. **Cui, C.**, Wang, Z., Cai, B., Peng, S., Wang, Y., & Xu, C. (2021). Evolution-based CO₂ emission baseline scenarios of Chinese cities in 2025. *Applied Energy*, 281, 116116.
5. **Cui, C.**, Cai, B., Bin, G., & Wang, Z. (2020). Decennary spatial pattern changes and scaling effects of CO₂ emissions of urban agglomerations in China. *Cities*, 105, 102818.
6. **Cui, C.**, Wang, Z., He, P., Yuan, S., Niu, B., Kang, P., & Kang, C. (2019). Escaping from pollution: the effect of air quality on inter-city population mobility in China. *Environmental Research Letters*, 14(12), 124025.
7. **Cui, C.**, Shan, Y., Liu, J., Yu, X., Wang, H., & Wang, Z. (2019). CO₂ emissions and their spatial patterns of Xinjiang cities in China. *Applied Energy*, 252, 113473.
8. **Cui, C.**, Wang, Z., & Bin, G. (2019). Life-cycle CO₂ emissions and their driving factors in the construction sector in China. *Chinese Geographical Science*, 29, 293-305.

Co-authored papers

1. Cheng, D., Guan, D., Xue, Q., Shan, Y., Huo, J., **Cui, C.**, Zhou, Y., & Li, Y. (2025). Inclusive wealth growth pathways within the carbon peak target for Chinese cities. *Cell Reports Sustainability*, 2(4).
2. Peng, H., Kan, S., Meng, J., Li, S., **Cui, C.**, Tan, C., Wang, Z., Wen, Q., & Guan, D. (2024). Emission accounting and drivers in South American countries. *Applied Energy*, 358, 122528.
3. Wang, J., Shan, Y., **Cui, C.**, Zhao, C., Meng, J., & Wang, S. (2024). Investigating the fast energy-related carbon emissions growth in African countries and its drivers. *Applied Energy*, 357, 122494.
4. Wang, T., Xin, Y., Du, H., **Cui, C.**, Li, J., & Liu, X. (2024). Projecting future mercury emissions from global biofuel

combustion under the carbon neutrality target. *Earth's Future*, 12(10), e2024EF004917.

5. Xu, R., Tong, D., Xiao, Q., Qin, X., Chen, C., Yan, L., Cheng, J., **Cui, C.**, Hu, H., & Liu, W. (2024). MEIC-global-CO₂: a new global CO₂ emission inventory with highly-resolved source category and sub-country information. *Science China Earth Sciences*, 67(2), 450-465.
6. Lei, T., Wang, D., Yu, X., Ma, S., Zhao, W., **Cui, C.**, Meng, J., Tao, S., & Guan, D. (2023). Global iron and steel plant CO₂ emissions and carbon-neutrality pathways. *Nature*, 622(7983), 514-520.
7. Cheng, D., Reiner, D., Yang, F., **Cui, C.**, Meng, J., Shan, Y., Liu, Y., Tao, S., & Guan, D. (2023). Projecting future carbon emissions from cement production in developing countries. *Nature Communications*, 14(1), 8213.
8. Liu, B., Guan, Y., Shan, Y., **Cui, C.**, & Hubacek, K. (2023). Emission growth and drivers in Mainland Southeast Asian countries. *Journal of Environmental Management*, 329, 117034.
9. Zhao, C., Liu, B., Wang, J., Xue, R., Shan, Y., **Cui, C.**, Dong, X., & Dong, K. (2023). Emission accounting and drivers in Central Asian countries. *Environmental Science and Pollution Research*, 30(46), 102894-102909.
10. Sun, Y., Hao, Q., **Cui, C.**, Shan, Y., Zhao, W., Wang, D., Zhang, Z., & Guan, D. (2022). Emission accounting and drivers in East African countries. *Applied Energy*, 312, 118805.
11. Yang, P., **Cui, C.** (equal contribution), Li, L., Chen, W., Shi, Y., Mi, Z., & Guan, D. (2020). Carbon emissions in countries that failed to ratify the intended nationally determined contributions: a case study of Kyrgyzstan. *Journal of Environmental Management*, 255, 109892.
12. Wang, X., Wang, Z., **Cui, C.**, & Wei, L. (2020). Forward and backward critical sectors for CO₂ emissions in China based on eigenvector approaches. *Environmental Science and Pollution Research*, 27, 16110-16120.
13. Wang, Z., Wang, X., Peng, S., Ming, L., **Cui, C.**, & Niu, B. (2020). Interactions between households and industrial sectors in embodied carbon emission networks. *Journal of Cleaner Production*, 275, 123809.
14. Wei, L., Li, C., Wang, J., Wang, X., Wang, Z., **Cui, C.**, Peng, S., Liu, Y., Yu, S., & Wang, L. (2020). Rising middle and rich classes drove China's carbon emissions. *Resources, Conservation and Recycling*, 159, 104839.
15. Cai, B., **Cui, C.** (corresponding author), Zhang, D., Cao, L., Wu, P., Pang, L., Zhang, J., & Dai, C. (2019). China city-level greenhouse gas emissions inventory in 2015 and uncertainty analysis. *Applied Energy*, 253, 113579.
16. Wang, Z., Chen, S., **Cui, C.**, Liu, Q., & Deng, L. (2019). Industry relocation or emission relocation? Visualizing and decomposing the dislocation between China's economy and carbon emissions. *Journal of Cleaner Production*, 208, 1109-1119.
17. Wang, Z., Wang, Y., Peng, S., Niu, B., **Cui, C.**, & Wu, J. (2019). Mapping the research of energy subsidies: a bibliometric analysis. *Environmental Science and Pollution Research*, 26, 28817-28828.
18. Wang, Z., **Cui, C.**, & Peng, S. (2019). How do urbanization and consumption patterns affect carbon emissions in China? A decomposition analysis. *Journal of Cleaner Production*, 211, 1201-1208.
19. Wang, Z., Li, C., **Cui, C.**, Liu, H., & Cai, B. (2019). Cleaner heating choices in northern rural China: household factors and the dual substitution policy. *Journal of Environmental Management*, 249, 109433.
20. Wang, Z., **Cui, C.**, & Peng, S. (2018). Critical sectors and paths for climate change mitigation within supply chain networks. *Journal of Environmental Management*, 226, 30-36.

Conference Proceedings

- Cui, C.** (2024). Sustainable, Reliable, or Affordable: The Future European Renewable Energy Infrastructure. EGU General Assembly Conference Abstracts, EGU-12941.
- Xu, R., Zhang, Q., Tong, D., Xiao, Q., Qin, X., Chen, C., Yan, L., Cheng, J., **Cui, C.**, & Hu, H. (2023). Development of a new global CO₂ emission database with highly-resolved source category and sub-country information. EGU General Assembly Conference Abstracts, EGU-1647.

Conference Presentations

Modelling policy interactions in the global battery supply chain: a multi-regional agent-based approach for SEM.

Oral presentation, Cambridge, UK, 2026.

From flow to stock dependency: rethinking supply chain resilience in the net-zero transition. Poster presentation, Gordon Research Conference, Newry, USA, 2026.

Optimizing the global heat pump supply chain for net-zero transition. Oral presentation, International Energy Workshop, Osaka, Japan, 2025.

Potential transformation and impacts of the global PV supply chain. Oral presentation, International Energy Workshop, Bonn, Germany, 2024.

Sustainable, reliable, or affordable: the future European renewable energy infrastructure. PICO presentation, European Geosciences Union General Assembly, Vienna, Austria, 2024.

Global mitigation efforts cannot neglect emerging emitters. Poster presentation, American Geophysical Union Fall Meeting, Chicago, USA, 2022.

Global mitigation efforts cannot neglect emerging emitters. Global Youth Summit of Net-Zero Future and the 3rd Graduate Forum of the Global Alliance of Universities on Climate, Beijing, China, 2021 (Best Paper Award).

Forward and backward critical sectors for CO₂ emissions in China based on eigenvector approaches. International Conference of Resource Sustainability, Beijing, China, 2018 (Best Designed Poster Award).

Life-cycle CO₂ emissions and their driving factors of the construction sector in China. Oral presentation, Sustainable Use of Natural Resource Graduate Forum, Xiamen, China, 2017.

TEACHING

Teaching Areas

Environmental science and sustainability

Energy systems and the low-carbon transition

Climate and energy policy

Courses Taught

Singapore Management University

Undergraduate Programmes :

Energy Transition: Technologies, Trade-offs, and Justice

THESES AND DISSERTATIONS

Theses and Dissertations Supervised

Master's Theses, ETH Zurich

Lisa Bueler, "Quantifying global dependencies in fossil fuel and clean energy supply chains", 2025-2026

Marvin Schwander, "Measuring complexity index of the global energy industry", 2025

Felix Tobler, "Supply risks of Swiss renewable energy devices", 2025

Nicola Laubscher, "Linking renewable energy models to device supply", 2025

Fiona Kriwan, "Optimizing global supply chains of heat pumps", 2024 (selected as one of three ETH Zurich students to present at CERAWEEK 2025)

Matthias Vogt, "Supply chains of solar PV based on the ZEN-garden framework", 2024

Bachelor's Theses, ETH Zurich

Mattia Barbaza, "Optimizing the global battery supply chains", 2025

Adriano Airal di, "Linking renewable energy device supply to energy models", 2025

Varun Agarwal, "Optimizing global supply chains of wind turbines", 2024

Lucas Ehl, "Satellite account for supply chains of renewable energy devices", 2024

Research Assistants Supervised

Tianxing Shang, Institute of Urban Environment, Chinese Academy of Sciences, "Critical elements for energy storage technologies in China", 2025

Fiona Kriwan, ETH Zurich, "Optimizing the global heat pump supply chain for net-zero transition", 2025

Tim Kopka, ETH Zurich, "Investigating the global battery supply chain via agent-based modelling", 2024

EXTERNAL SERVICE – PROFESSIONAL

Manuscript Reviewer

Global Environmental Change; Environmental Science & Ecotechnology; Environmental Research Letters; Applied Energy; Scientific Data; Journal of Cleaner Production; Environmental Impact Assessment Review; Ecological Economics; Environmental and Sustainability Indicators; Annals of the American Association of Geographers

Conference Session Chair

INFORMS Annual Meeting 2026 - Energy, Natural Resources, and the Environment Cluster