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Assistant Professor *Ph.D. in Environmental Economics*

Dr. Dai's research focuses on green & low-carbon transformation and human & planetary health at the local, national and global scales. By developing and applying the state-of-the-art **IMED** model, key questions are explored on the mitigation costs of achieving ambitious climate targets and their co-benefits on improvements in air pollution, human health and resource efficiency.

Dr. Dai ranked as the World's Top 2% most-cited scientists released by Stanford University in 2020. His main publications, including 8 ESI 1% highly cited papers, are on energy economics and policy related journals. Introduction to the **IMED** model could be downloaded here in [Chinese](#) or [English](#). A brief review of the peer reviewed papers based on **IMED** model is available in [Chinese](#) or [English](#). More recent publications are available at [University homepage](#), [Google Scholar](#) or [Researchgate](#).

Dr. Dai serves as the Lead Author of the Global Environment Outlook Sixth Edition (GEO-6) for Cities, Contributing Author of the IPCC 6th Assessment Report, Global Burden of Disease (GBD) Collaborator, Standing Committee Member of Branch of Ecological and Environmental Systems Engineering, Systems Engineering Society of China, and Committee Member of City Air Integrated Management and Low Carbon Action Partnership of China.

Education

- 2009/10 – 2012/12 🎓 **Ph.D., Tokyo Institute of Technology, Japan** in Social Engineering.
Thesis title: *Integrated assessment of China's provincial low-carbon economy development towards 2030: Jiangxi Province as an example.*
- 2006/10 – 2009/03 🎓 **M.Sc., Technical University of Munich, Germany** in Environmental Planning and Engineering Ecology.
Core field: *Renewable resources and renewable energy.*
- 2002/09 – 2006/07 🎓 **B.Sc., Peking University, China** in Environmental Science.

Professional Experiences

Position

- 2017/01 – present 🎓 **Assistant Professor.** College of Environmental Sciences and Engineering, Peking University.
- 2017/10 – 2018/10 🎓 **Executive Director.** International Project Office of Monsoon Asia Integrated Research for Sustainability, Future Earth (MAIRS-FE).
- 2013/01 – 2016/12 🎓 **Research Associate.** Integrated Environment and Economics Section, Center for Social and Environmental Systems Research, National Institute for Environmental Studies, Japan.

Professional Experiences (continued)

2009/04 – 2009/09

■ **Research Assistant.** Integrated Assessment Modeling Section, National Institute for Environmental Studies, Japan.

Lectures

- Climate Change Economics ■ 2 hours per week, 2020–present.
- Climate Change Mitigation and Sustainable Development ■ 2 hours per week, 2021–present.
- Global Environment Outlook ■ 8 hours per semester.
- Environmental Research Method ■ 3 hours per week.
- Energy Economics and Policy ■ 2 hours per week, 2018–2019.
- Environmental Challenges and Sustainable Development in China ■ 2 hours per semester, 2020–present.
- Introduction to Environmental Science & Engineering ■ 2 hours per semester.
- Frontiers in Environmental Science & Engineering Research ■ 2 hours per semester.
- Frontiers in Environmental Management Research ■ 2 hours per semester.

Research

- Integrated Assessment ■ Development of **I**ntegrated Assessment **M**odel of **E**nergy, Environment and Economy for Sustainable **D**evelopment, or the **IMED** model ([Link](#)), of China and the world.

Research Publications

Journal Articles: First or Corresponding Author (SCI)

- 1 Cao, Jing, **Hancheng Dai***, Shantong Li*, Chaoyi Guo, Jianwu He, Mun Ho, Wenjia Cai, Jifeng Li, Yu Liu, Can Wang, Libo Wu and Xiliang Zhang (2021). *The General Equilibrium Impacts of Carbon Tax Policy in China: A Multi-model Comparison*. In: *Energy Economics* vol. 99, p. 105284. URL: <https://www.sciencedirect.com/science/article/pii/S0140988321001894>.
- 2 Ren, Ming and **Hancheng Dai*** et al (2021). *Decarbonizing China's Iron and Steel Industry from the Supply and Demand Sides for Carbon Neutrality*. In: *Applied Energy*.
- 3 Jin, Yana, Xiaorui Liu, Xiang Chen and **Hancheng Dai*** (2020). *How carbon emission allowances allocation matters for China's emission trading: a general equilibrium analysis*. In: *Energy Economics* vol. 92, p. 105012. URL: <https://www.sciencedirect.com/science/article/pii/S0140988320303522>.
- 4 Kim, Satbyul Estella, Yang Xie*, **Hancheng Dai***, Shinichiro Fujimori, Yasuaki Hijioka, Yasushi Honda, Masahiro Hashizume, Toshihiko Masui, Tomoko Hasegawa, Xinghan Xu, Kan Yi and Ho Kim (2020). *Air quality co-benefits from climate mitigation for human health in South Korea*. In: *Environment International* vol. 136, p. 105507. URL: <https://www.sciencedirect.com/science/article/pii/S0160412019319257>.
- 5 Li, Boshu, Yan Chen, Shaohui Zhang, Zheru Wu, Cofala Janusz and **Hancheng Dai*** (2020). *Climate and health benefits of phasing out iron steel production capacity in china: findings from the IMED model*. In: *Climate Change*

Economics vol. 11 (3), p. 2041008. URL:
<https://www.worldscientific.com/doi/abs/10.1142/S2010007820410080>.

- 6 Liu, Chao, **Hancheng Dai***, Lin Zhang and Changchun Feng* (2019). *The impacts of economic restructuring and technology upgrade on air quality and human health in Beijing-Tianjin-Hebei region in China*. In: *Frontiers of Environmental Science and Engineering* vol. 13 (5), p. 70. URL:
<https://link.springer.com/article/10.1007/s11783-019-1155-y>.
- 7 Su, Qiong, **Hancheng Dai***, Yun Lin, Yang Xie, Huan Chen and R. Karthikeyan (2019). *General equilibrium analysis of the cobenefits and trade-offs of carbon mitigation on local industrial water use and pollutants discharge in China*. In: *Environmental Science & Technology* vol. 53 (3), pp. 1715-1724. URL:
<https://pubs.acs.org/doi/10.1021/acs.est.8b05763>.
- 8 Wu, Yi-Hua, **Hancheng Dai*** and Toshihiko Masui (2019). *The Efforts of Taiwan to Achieve NDC Target: An Investigation on the Regional Emission Trading System*. In: *Natural Hazards* vol. 99, pp. 1295-1310. URL:
<https://link.springer.com/article/10.1007/s11069-019-03660-x>.
- 9 Wu, Rui, **Hancheng Dai***, Yong Geng, Yang Xie and Xu Tian (2019). *Impacts of export restructuring on national economy and CO₂ emissions: A general equilibrium analysis for China*. In: *Applied Energy* vol. 248, pp. 64-78. URL:
<https://www.sciencedirect.com/science/article/pii/S0306261919306567>.
- 10 Xie, Yang, **Hancheng Dai***, Yanxu Zhang*, Tatsuya Hanaoka and Toshihiko Masui (2019). *Comparison of health and economic impacts of PM_{2.5} and ozone pollution in China*. In: *Environment International* vol. 130, p. 104881. URL:
<https://www.sciencedirect.com/science/article/pii/S0160412019310530?via%3Dihub>.
- 11 Zhang, Xiang, Yana Jin*, **Hancheng Dai***, Yang Xie and Shiqiu Zhang (2019). *Health and economic benefits of cleaner residential heating in the Beijing-Tianjin-Hebei region in China*. In: *Energy Policy* vol. 127, pp. 165-178. URL:
<https://www.sciencedirect.com/science/article/pii/S0301421518308048?dgcid=author>.
- 12 **Hancheng Dai**, Yang Xie, Jingyu Liu and Toshihiko Masui (2018). *Aligning renewable energy targets with carbon emissions trading to achieve China's INDCs: A general equilibrium assessment*. In: *Renewable & Sustainable Energy Reviews* vol. 82, pp. 4121-4131. URL:
<http://www.sciencedirect.com/science/article/pii/S136403211731434X>.
- 13 **Hancheng Dai**, Yang Xie*, Haibin Zhang, Zhongjue Yu and Wentao Wang (2018). *Effects of the US withdrawal from Paris Agreement on the carbon emission space and cost of China and India*. In: *Frontiers in Energy* vol. 12.3, pp. 362-375. URL: <https://link.springer.com/article/10.1007%2Fs11708-018-0574-y>.
- 14 Li, Zhaoling, **Hancheng Dai***, Lu Sun, Yang Xie, Zhu Liu, Peng Wang and Helmut Yabar (2018). *Exploring the impacts of regional unbalanced carbon tax on CO₂ emissions and industrial competitiveness in Liaoning province of China*. In: *Energy Policy* vol. 113. **ESI 1% Highly Cited Paper in 2018-19**, pp. 9-19. URL:
<https://www.sciencedirect.com/science/article/pii/S0301421517307218>.
- 15 Liu, Zhiqing, Yong Geng*, **Hancheng Dai***, Jeffrey Wilson, Yang Xie, Rui Wu, Wei You and Zhongjue Yu (2018). *Regional impacts of launching national carbon emissions trading market: A case study of Shanghai*. In: *Applied Energy* vol. 230, pp. 232-240. URL:
<https://www.sciencedirect.com/science/article/pii/S030626191831287X>.
- 16 Qi, Yu, **Hancheng Dai***, Yong Geng* and Yang Xie (2018). *Assessment of economic impacts of differentiated carbon reduction targets: a case study in Tianjin of China*. In: *Journal of Cleaner Production* vol. 182, pp. 1048-1059. URL:
<https://www.sciencedirect.com/science/article/pii/S0959652618304025>.
- 17 Su, Qiong, **Hancheng Dai***, Yun Lin, Huan Chen and R. Karthikeyan (2018). *Modeling the carbon-energy-water nexus in a rapidly urbanizing catchment: A general equilibrium assessment*. In: *Journal of Environmental Management* vol. 225, pp. 93-103. URL: <https://www.sciencedirect.com/science/article/pii/S030147971830834X>.
- 18 Tian, Xu, **Hancheng Dai***, Yong Geng*, Jeffrey Wilson, Rui Wu, Yang Xie and Han Hao (2018). *Economic Impacts from PM_{2.5} pollution-related health effects in China's road transport sector: a provincial-Level analysis*. In:

Environment International vol. 115, pp. 220–229. URL:
<https://www.sciencedirect.com/science/article/pii/S0160412018301338>.

- 19 Wang, Heming, **Hancheng Dai***, Liang Dong, Yang Xie, Yong Geng*, Qiang Yue, Fengmei Ma, Jian Wang and Tao Du (2018). *Co-benefit of carbon mitigation on resource use in China*. In: *Journal of Cleaner Production* vol. 174, pp. 1096–1113. URL: <https://www.sciencedirect.com/science/article/pii/S0959652617327282>.
- 20 Weng, Zhixiong, **Hancheng Dai***, Zhongyu Ma*, Yang Xie and Peng Wang (2018). *A general equilibrium assessment of economic impacts of provincial unbalanced carbon intensity targets in China*. In: *Resources, Conservation and Recycling* vol. 133, pp. 157–168. URL: <https://www.sciencedirect.com/science/article/pii/S0921344918300326>.
- 21 Xie, Jiaoyan, **Hancheng Dai***, Yang Xie* and Lixuan Hong (2018). *Effect of carbon tax on the industrial competitiveness of Chongqing, China*. In: *Energy for Sustainable Development* vol. 47, pp. 114–123. URL: <https://www.sciencedirect.com/science/article/pii/S0973082618304101>.
- 22 Xie, Yang, **Hancheng Dai*** and Huijuan Dong (2018). *Impacts of SO₂ taxations and renewable energy development on CO₂, NO_x and SO₂ emissions in Jing-Jin-Ji region*. In: *Journal of Cleaner Production* vol. 171, pp. 1386–1395. URL: <http://www.sciencedirect.com/science/article/pii/S0959652617323508>.
- 23 Xie, Yang, **Hancheng Dai***, Xinghan Xu, Shinichiro Fujimori, Tomoko Hasegawa, Kan Yi, Toshihiko Masui and Gakuji Kurata (2018). *Co-benefit of climate mitigation on air quality and human health in Asian countries*. In: *Environment International* vol. 119, pp. 309–318. URL: <https://www.sciencedirect.com/science/article/pii/S0160412018305841>.
- 24 Yu, Zhongjue, Yong Geng*, **Hancheng Dai***, Rui Wu, Zhiqing Liu and Xu Tian (2018). *A general equilibrium analysis of the impacts of regional and sectoral emission quota allocation on carbon trading market*. In: *Journal of Cleaner Production* vol. 192, pp. 421–432. URL: <https://www.sciencedirect.com/science/article/pii/S0959652618313337>.
- 25 Dong, Huijuan, **Hancheng Dai***, Yong Geng, Tsuyoshi Fujita, Zhe Liu, Yang Xie, Rui Wu, Minoru Fujii, Toshihiko Masui and Liang Tang (2017). *Exploring impact of carbon tax on China's industrial CO₂ reductions and provincial disparities*. In: *Renewable & Sustainable Energy Reviews* vol. 77, pp. 596–603. URL: <http://www.sciencedirect.com/science/article/pii/S1364032117305488>.
- 26 **Hancheng Dai**, Shinichiro Fujimori, Diego Silva Herran, Hiroto Shiraki, Toshiko Masui and Yuzuru Matsuoka (2017). *The impacts on climate mitigation costs of considering curtailment and storage of variable renewable energy in a general equilibrium model*. In: *Energy Economics* vol. 64, pp. 627–637. URL: <http://www.sciencedirect.com/science/article/pii/S0140988316300391>.
- 27 **Hancheng Dai**, Haibin Zhang and Wentao Wang (2017). *The impacts of U.S. withdrawal from the Paris Agreement on the carbon emission space and mitigation cost of China, EU, and Japan under the constraints of the global carbon emission space*. In: *Advances in Climate Change Research* vol. 8.4, pp. 226–234. URL: <http://www.sciencedirect.com/science/article/pii/S1674927817301016>.
- 28 Li, Mingquan, **Hancheng Dai***, Yang Xie, Ye Tao, Lars Bregnbæk and Kaare Sandholt (2017). *Water conservation from power generation in China: a provincial level scenario towards 2030*. In: *Applied Energy* vol. 208, pp. 580–591. URL: <http://www.sciencedirect.com/science/article/pii/S0306261917313764>.
- 29 Mittal, Shivika, **Hancheng Dai***, Shinichiro Fujimori, Tatsuya Hanaoka and Runsen Zhang (2017). *Key factors influencing the global passenger transport dynamics using the AIM/Transport model*. In: *Transportation Research Part D: Transport and Environment* vol. 55, pp. 373–388. URL: <http://www.sciencedirect.com/science/article/pii/S1361920916300451>.
- 30 Tian, Xu, **Hancheng Dai***, Yong Geng, Zhen Huang, Toshihiko Masui and Tsuyoshi Fujita (2017). *The effects of carbon reduction on sectoral competitiveness in China: a case of Shanghai*. In: *Applied Energy* vol. 197, pp. 270–278. URL: <http://www.sciencedirect.com/science/article/pii/S0306261917304221>.

- 31 Wu, Rui, **Hancheng Dai***, Yong Geng, Yang Xie, Toshihiko Masui, Zhiqing Liu and Yiying Qian (2017). *Economic Impacts from PM_{2.5} Pollution-Related Health Effect: A Case Study in Shanghai*. In: *Environmental Science & Technology* vol. 51.9, pp. 5035–5042. URL: <http://pubs.acs.org/doi/abs/10.1021/acs.est.7b00026>.
- 32 Cheng, Beibei, **Hancheng Dai***, Peng Wang, Yang Xie, Li Chen, Daiqing Zhao and Toshihiko Masui (2016). *Impacts of low-carbon power policy on carbon mitigation in Guangdong Province, China*. In: *Energy Policy* vol. 88. **ESI 1% Highly Cited Paper in 2016-17**, pp. 515–527. URL: <http://www.sciencedirect.com/science/article/pii/S0301421515301841>.
- 33 **Hancheng Dai**, Diego Silva Herran, Shinichiro Fujimori and Toshihiko Masui (2016). *Key factors affecting long-term penetration of global onshore wind energy integrating top-down and bottom-up approaches*. In: *Renewable Energy* vol. 85, pp. 19–30. URL: <http://www.sciencedirect.com/science/article/pii/S0960148115300239>.
- 34 **Hancheng Dai**, Peggy Mischke, Xuxuan Xie, Yang Xie and Toshihiko Masui (2016). *Closing the gap? Top-down versus bottom-up projections of China's regional energy use and CO₂ emissions*. In: *Applied Energy* vol. 162, pp. 1355–1373. URL: <http://www.sciencedirect.com/science/article/pii/S0306261915008272>.
- 35 **Hancheng Dai**, Xuxuan Xie, Yang Xie, Jian Liu and Toshihiko Masui (2016). *Green growth: The economic impacts of large-scale renewable energy development in China*. In: *Applied Energy* vol. 162. **ESI 1% Highly Cited Paper in 2016-17**, pp. 435–449. URL: <http://www.sciencedirect.com/science/article/pii/S0306261915012763>.
- 36 Mittal, Shivika, **Hancheng Dai***, Shinichiro Fujimori and Toshihiko Masui (2016). *Bridging greenhouse gas emissions and renewable energy deployment target: Comparative assessment of China and India*. In: *Applied Energy* vol. 166. **ESI 1% Highly Cited Paper in 2016-17**, pp. 301–313. URL: <http://www.sciencedirect.com/science/article/pii/S0306261916000118>.
- 37 Mittal, Shivika, **Hancheng Dai*** and P. R. Shukla (2016). *Low carbon urban transport scenarios for China and India: A comparative assessment*. In: *Transportation Research Part D: Transport and Environment* 44, pp. 266–276. URL: <http://www.sciencedirect.com/science/article/pii/S1361920915000346>.
- 38 Tian, Xu, Yong Geng, **Hancheng Dai***, Tsuyoshi Fujita, Rui Wu, Zhe Liu, Toshihiko Masui and Yang Xie (2016). *The effects of household consumption pattern on regional development: A case study of Shanghai*. In: *Energy* vol. 103, pp. 49–60. URL: <http://www.sciencedirect.com/science/article/pii/S036054421630202X>.
- 39 Wu, Rui, **Hancheng Dai***, Yong Geng, Yang Xie, Toshihiko Masui and Xu Tian (2016). *Achieving China's INDC through carbon cap-and-trade: Insights from Shanghai*. In: *Applied Energy* vol. 184. **ESI 1% Highly Cited Paper in March 2019**, pp. 1114–1122. URL: <https://www.sciencedirect.com/science/article/pii/S0306261916307863>.
- 40 Xie, Yang, **Hancheng Dai***, Huijuan Dong, Tatsuya Hanaoka and Toshihiko Masui (2016a). *Economic impacts from PM_{2.5} pollution-related health effects in China: A provincial-level analysis*. In: *Environmental Science & Technology* vol. 50.9. **ESI 1% Highly Cited Paper in 2018-19**, pp. 4836–4843. URL: <https://pubs.acs.org/doi/abs/10.1021/acs.est.5b05576>.
- 41 Wang, Peng, **Hancheng Dai***, Songyan Ren, Daiqing Zhao and Toshihiko Masui (2015). *Achieving Copenhagen target through carbon emission trading: Economic impacts assessment in Guangdong Province of China*. In: *Energy* vol. 79. **ESI 1% Highly Cited Paper in 2015-16**, pp. 212–227. URL: <http://www.sciencedirect.com/science/article/pii/S0360544214012638>.
- 42 **Hancheng Dai**, Toshihiko Masui, Yuzuru Matsuoka and Shinichiro Fujimori (2012). *The impacts of China's household consumption expenditure patterns on energy demand and carbon emissions towards 2050*. In: *Energy Policy* vol. 50, pp. 736–750. URL: <http://www.sciencedirect.com/science/article/pii/S0301421512007057>.
- 43 — (2011). *Assessment of China's climate commitment and non-fossil energy plan towards 2020 using hybrid AIM/CGE model*. In: *Energy Policy* vol. 39.5, pp. 2875–2887. URL: <http://www.sciencedirect.com/science/article/pii/S0301421511001558>.

- 44 Xie, Yang, **Hancheng Dai***, Yanxu Zhang, Tatsuya Hanaoka and Toshihiko Masui (Discussion paper). *Economic impacts from ozone pollution-related health effects in China: A provincial-level analysis*. In: *Atmospheric Chemistry and Physics*. URL: <https://www.atmos-chem-phys-discuss.net/acp-2017-849>.

Journal Articles: Other

- 1 Cai*, Wenjia, Chi Zhang, Hoi Ping Suen, Siqi Ai, Yuqi Bai, Junzhe Bao, Bin Chen, Liangliang Cheng, Xueqin Cui, **Hancheng Dai**, Qian Di and et al (2021). 'The 2020 Chinese Report of The Lancet Countdown on Health and Climate Change'. In: *The Lancet Public Health* 6.1, e64–e81. URL: [https://doi.org/10.1016/S2468-2667\(20\)30256-5](https://doi.org/10.1016/S2468-2667(20)30256-5).
- 2 Lamb, William F., Thomas Wiedmann, Julia Pongratz, Robbie Andrew, Monica Crippa, Jos G J Olivier, Dominik Wiedenhofer, Giulio Mattioli, Alaa Al Khourdajie, Joanna House, Shonali Pachauri, Maria Figueroa, Yamina Saheb, Raphael Slade, Klaus Hubacek, Laixiang Sun, Suzana Kahn Ribeiro, Smail Khennas, Stephane de la Rue du Can, Lazarus Chapungu, Steven J Davis, Igor Bashmakov, Hancheng Dai, Shobhakar Dhakal, Xianchun Tan, Yong Geng, Baihe Gu and Jan C Minx (2021). 'A review of trends and drivers of greenhouse gas emissions by sector from 1990 to 2018'. In: *Environmental Research Letters*. URL: <https://iopscience.iop.org/article/10.1088/1748-9326/abee4e>.
- 3 Fujimori, Shinichiro, Tomoko Hasegawa, Kiyoshi Takahashi, **Hancheng Dai**, Jing-Yu Liu, Haruka Ohashi, Yang Xie, Yanxu Zhang, Tetsuya Matsui and Yasuaki Hijioka (2020). 'Measuring the sustainable development implications of climate change mitigation'. In: *Environmental Research Letters* 15, p. 085004. URL: <https://iopscience.iop.org/article/10.1088/1748-9326/ab9966>.
- 4 GBD 2019 Viewpoint Collaborators (2020). 'Five insights from the Global Burden of Disease Study 2019'. In: *The Lancet* 396.20, pp. 31404–5.
- 5 Guo, Chaoyi, **Hancheng Dai***, Xiaorui Liu, Yazhen Wu, Xiaoyu Liu and Yong Liu (2020). 'Impacts of climate change mitigation on agriculture water use: a provincial analysis in China'. In: *Geography and Sustainability* 1 (3), pp. 189–199. URL: <https://www.sciencedirect.com/science/article/pii/S2666683920300298>.
- 6 Hess, Jeremy J., Nikhil Ranadive, Chris Boyer, Lukasz Aleksandrowicz, Susan C. Anenberg, Kristin Aunan, Kristine Belesova, Michelle L. Bell, Sam Bickersteth, Kathryn Bowen, Marci Burden, Diarmid Campbell-Lendrum, Elizabeth Carlton, Guéladio Cissé, Francois Cohen, **Hancheng Dai** and et al (2020). 'Guidelines for Modeling and Reporting Health Effects of Climate Change Mitigation Actions'. In: *Environmental Health Perspectives* 128.11, pp. 115001–1. URL: <https://ehp.niehs.nih.gov/doi/10.1289/EHP6745>.
- 7 Lu, Pantao, Yalong Han and **Hancheng Dai*** (2020). 'Co-benefits of decarbonizing China's transport sector in energy saving and air pollution improvement under 1.5- and 2-degree targets in 2050'. In: *Acta Scientiarum Naturalium Universitatis Pekinensis (In Chinese)*.
- 8 Peng, Wei, **Hancheng Dai**, Hao Guo, Pallav Purohit, Johannes Urpelainen, Fabian Wagner, Yazhen Wu and Hongliang Zhang (2020). 'The Critical Role of Policy Enforcement in Achieving Health, Air Quality, and Climate Benefits from India's Clean Electricity Transition'. In: *Environmental Science & Technology* 54.19, pp. 11720–11731.
- 9 Cao, Zhi, Gang Liu*, Shuai Zhong, **Hancheng Dai** and Stefan Pauliuk (2019). 'Integrating dynamic material flow analysis and computable general equilibrium models for both mass and monetary balances in prospective modelling: A case for Chinese building sector'. In: *Environmental Science & Technology* 53.1, pp. 224–233. URL: <https://pubs.acs.org/doi/pdf/10.1021/acs.est.8b03633>.
- 10 Li, Zhaoling, **Hancheng Dai**, Junnian Song, Lu Sun, Yong Geng, Keyu Lu and Tatsuya Hanaoka (2019). 'Assessment of the carbon emissions reduction potential of China's iron and steel industry based on a simulation analysis'. In: *Energy* 183, pp. 279–290. URL: <https://www.sciencedirect.com/science/article/pii/S0360544219312319>.

- 11 Xu, Tian, **Hancheng Dai**, Yong Geng, Shaohui Zhang, Yang Xie, Xiaorui Liu, Pantao Lu and Raimund Bleischwitz (2019). 'Toward the 2-degree target: evaluating co-benefits of road transportation in China'. In: *Journal of Transport & Health* 15, p. 100674. URL: <https://www.sciencedirect.com/science/article/pii/S2214140519303391?via%3Dihub>.
- 12 Zhang, Xiang, **Hancheng Dai**, Yana Jin and Shiqiu Zhang* (2019). 'Evaluation of Health and Economic Benefits from "Coal to Electricity" Policy in the Residential Sector in the Jing-Jin-Ji Region'. In: *Acta Scientiarum Naturalium Universitatis Pekinensis (In Chinese)* 55 (2), pp. 367–376. URL: <http://xbna.pku.edu.cn/CN/abstract/abstract3355.shtml>.
- 13 Geng, Yong, Tsuyoshi Fujita, Anthony Chiu, **Hancheng Dai** and Han Hao (2018). 'Responding to the Paris Climate Agreement: global climate change mitigation efforts'. In: *Frontiers in Energy* 12.3, pp. 333–337. URL: <https://link.springer.com/article/10.1007%2Fs11708-018-0587-6>.
- 14 Jiang, Kejun, Chenmin He*, **Hancheng Dai**, Jia Liu and Xiangyang Xu (2018). 'Emission Scenario Analysis for China under the Global 1.5°C Target'. In: *Carbon Management* 9 (5), pp. 481–491. URL: <https://www.tandfonline.com/doi/full/10.1080/17583004.2018.1477835>.
- 15 Ma, Fengmei, Heming Wang, Bing Zhu, Dingjiang Chen, Hancheng Dai, Jian Wang, Shen Zhao, Qiang Yue, Guangsheng Zhang, Yang Xie, Yong Geng and Tao Du (2018). 'Material footprint of a fast-industrializing region in China, Part I: Exploring the materialization process of Liaoning Province'. In: *Resources, Conservation and Recycling* 134, pp. 228–238. URL: <https://www.sciencedirect.com/science/article/pii/S0921344918301174>.
- 16 Zhang, Runsen, Shinichiro Fujimori, **Hancheng Dai** and Tatsuya Hanaoka (2018). 'Contribution of the transport sector to climate change mitigation: Insights from a global passenger transport model coupled with a computable general equilibrium model'. In: *Applied Energy* 211, pp. 76–88. URL: <https://www.sciencedirect.com/science/article/pii/S0306261917315490>.
- 17 Fujimori, Shinichiro, Tomoko Hasegawa, Toshihiko Masui, Kiyoshi Takahashi, Diego Silva Herran, **Hancheng Dai**, Yasuaki Hijioka and Mikiko Kainuma (2017a). 'SSP3: AIM Implementation of Shared Socioeconomic Pathways'. In: *Global Environmental Change* 42. **ESI 0.1% Hot Paper in 2018**, pp. 268–283. URL: <http://www.sciencedirect.com/science/article/pii/S0959378016300838>.
- 18 Zhang, Haibin, **Hancheng Dai**, Huaxia Lai and Wentao Wang (2017). 'U.S. withdrawal from the Paris Agreement: reasons, impacts, and China's response'. In: *Advances in Climate Change Research* 8.4, pp. 220–225. URL: <http://www.sciencedirect.com/science/article/pii/S1674927817301028>.
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Research Project

- 2021/01 – 2024/12  **General Program, National Natural Science Foundation of China (NSFC)**, Co-benefit and trade-off of carbon reduction and water conservation targets at provincial level in China, 0.48 mRMB (70 kUSD), **Principal Investigator**

Research Project (continued)

- 2020/06 – 2023/05 ■ Wellcome Trust Foundation, UK, "Electric vehicles' health and climate benefits in China and India", 2.4 mRMB (400 kUSD), **Co-Principal Investigator**
- 2019/12 – 2021/12 ■ Key Projects of National Key Research and Development Program of the Ministry of Science and Technology of China (MOST), Principles and Technical Approaches of Regional Air Quality Control, 0.54 mRMB (80 kUSD), **Key Member**
- 2019/01 – 2023/12 ■ Funds for International Cooperation and Exchange, NSFC, "The principles of green and low carbon development of Chinese society and economic system", 400k/2 mRMB (60k out of 300 kUSD), **In charge of sub-topic 2**
- 2018/01 – 2021/12 ■ Bilateral International Cooperation Program, NSFC, Multi-model innovations in Integrated Assessment Modelling of Chinese, Irish and Global energy-economy-environment-climate systems investigating deep decarbonisation pathways from the Paris Agreement to the United Nations sustainable development goals, 51861135102, 600k/3 mRMB (100 kUSD out of 500 kUSD), **In charge of sub-topic 2**
- 2018/01 – 2020/12 ■ Youth Science Fund, NSFC "Study on the green and low-carbon co-benefits of addressing overcapacity in the steel and cement industries based on integrated assessment models", 71704005, 180k RMB (30k USD), **Principal Investigator**
- 2017/12 – 2021/05 ■ Key Projects of National Key Research and Development Program of MOST, "Joint demonstration of air pollution prevention and control and heavy pollution emergency technology and integration in Beijing-Tianjin-Hebei and surrounding areas", **WP6**: Study on the System and Implementation Plan of Joint Air Pollution Prevention and Control Mechanism, 2017YFC0213000, 1.9 mRMB (0.3 mUSD), **Participate in sub-topic 6**
- Key Projects of National Key Research and Development Program of the Ministry of Science and Technology of China (MOST), "Joint demonstration of air pollution prevention and control and heavy pollution emergency technology and integration in Beijing-Tianjin-Hebei and surrounding areas", **WP3**: Genesis analysis and source identification technology for typical heavy pollution processes, 2017YFC0213000, 8.7 mRMB (1.4 mUSD), **In charge of sub-topic 3**
- 2017/10 – 2018/09 ■ NSFC, "The Impacts of U.S. Withdrawal from the Paris Agreement on Global Climate Governance and China's Response", NSFC, 80 kRMB (12 kUSD), 71741011, **Participate**
- 2017/01 – 2019/12 ■ Startup Research Fund of College of Environmental Science and Engineering at Peking University, 1 mRMB (0.17 mUSD), **Principal Investigator**

Skills

- Languages ■ Native in Mandarin Chinese. Strong reading, writing and speaking competencies in English. Moderate reading, writing and speaking competencies in German and Japanese.
- Coding ■ GAMS, Python, R, \LaTeX .
- Misc. ■ Academic research, teaching, training, consultation, \LaTeX typesetting and publishing.

Scientific Services

Journal Reviewer	■ Nature; Nature Climate Change ; Nature Sustainability; Energy Economics ; Environment, Development and Sustainability; International Journal of Energy Research ; Renewable Energy; Journal of Cleaner Production ; Ecological Indicators; Economic Modelling ; Applied Energy; Sustainability ; Journal of Environmental Planning and Management; Science of the Total Environment ; The Energy Journal; Frontiers in Energy (Excellence in Review Awards in 2018); Natural Hazards; Omega ; Environment International; Resources, Conservation & Recycling (Excellence in Review Awards in 2017); Environmental Science & Technology; National Science Review ; Geography and Sustainability; Atmospheric Environment ; International Journal of Environmental Research and Public Health; World Development ; Energy for Sustainable Development; Advances in Climate Change Research ; Regional Environmental Change; Environmental Science and Pollution Research ; Atmosphere; Carbon Management ; Energies; Climatic Change ; Sustainability Science; Energy Policy .
Report Reviewer	■ Global Environment Outlook Sixth Edition (GEO-6)
Dissertation Reviewer	■ Peking University; Tsinghua University
Guest Editor	■ Frontiers in Energy
Editor	■ Geography and Sustainability
Committee	■ Branch of Ecological and Environmental Systems Engineering, Systems Engineering Society of China (Standing Committee Member) ■ Branch of Climate Change, Chinese Society for Sustainable Development (Committee Member) ■ City Air Integrated Management and Low Carbon Action Partnership of China (CAM-CAP, Committee Member) ■ Committee for Ozone Pollution Control, Chinese Society for Environmental Sciences (COPC-CSES, Committee Member)
Scientific Report	■ Global Environment Outlook Sixth Edition (GEO-6) for Cities, Lead Author ■ IPCC 6 th Assessment Report (In charge of Volume 3 Chapter 2), Contributing Author ■ Assessment of Climate and Environment Changes in China: 2021 (In charge of Volume 3 Chapters 2 and 3), Lead Author ■ Synergy Pathway of Carbon Neutrality and Clean Air in China (In charge of Indicator 15: Health Co-benefits of Climate Change and Clean Air Policies), Lead Author ■ Lancet Countdown China Special Report (In charge of Indicators in Section 4), Coordinated Lead Author ■ Global Burden of Disease (GBD) Collaborator

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