

# Da Zhang

## Curriculum Vitae

### Address

Institute of Energy, Environment and Economy,  
Tsinghua University  
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### Current Position and Affiliations

Associate Professor, Institute of Energy, Environment and Economy, Tsinghua University, since 06/2020  
Associate Editor, Journal of Global Economic Analysis, since 12/2020

### Academic and Professional Experience

Assistant Professor, Institute of Energy, Environment and Economy, Tsinghua University, 12/2018 – 06/2020  
Research Scientist, Joint Program on the Science and Policy of Global Change, Massachusetts Institute of Technology, 07/2017 – 11/2018  
Postdoctoral Associate, Joint Program on the Science and Policy of Global Change, Massachusetts Institute of Technology, 06/2014 – 06/2017  
Intern, Energy Research Institute, National Development and Reform Commission, Beijing, China, 04/2010 – 06/2010  
Intern, Sino-Danish Renewable Energy Development Program / National Renewable Energy Center, 10/2010 – 09/2011  
Intern, Northern Light Venture Capital Company, Beijing, China, 07/2010 – 10/2010

### Education

Ph. D., Institute of Energy, Environment and Economy, Tsinghua University, China, 06/2014.  
Visiting student, Chair of Economics/Energy Economics, Department of Management, Technology, and Economics D-MTEC, ETH Zurich, 06/2013 - 08/2013.  
Visiting student, Joint Program on the Science and Policy of Global Change, Massachusetts Institute of Technology, 01/2012 - 01/2013.  
B.S., Industrial Engineering, Tsinghua University, China, 06/2009.

## Research Interest

Energy and environmental economics, energy system modeling, applied general equilibrium modeling, organizational economics

## Publications

### Selected Publications

He, Guannan, Jeremy Michalek, Qixin Chen, Soumya Kar, Da Zhang\*, Jay Whitacre\*. Utility-scale portable energy storage systems. *Joule*, *accepted*.

Karplus, Valerie J., Thomas Geissmann, Da Zhang. Institutional complexity, management practices, and firm productivity. *World Development*, *accepted*.

Zhang, Xiliang\*, Andreas Löschel\*, Joanna Lewis\*, Da Zhang\*, Jinyue Yan\*. Emissions trading systems for global low carbon energy and economic transformation. *Applied Energy* (2020), 279: 115858.

Guo, Hongye, Michael R. Davidson, Qixin Chen\*, Da Zhang\*, Nan Jiang, Qing Xia, Chongqing Kang, Xiliang Zhang. Power Market Reform in China: Motivations, Progress, and Recommendations. *Energy Policy* (2020), 145: 111717.

Karplus, Valerie J., Xingyao Shen, Da Zhang\*. Herding cats: Firm non-compliance in China's industrial energy efficiency program. *The Energy Journal* (2020), 41(4): 3531.

Filippini, Massimo, Thomas Geissmann, Valerie J. Karplus, Da Zhang. The productivity impacts of energy efficiency programs in developing countries: Evidence from iron and steel firms in China. *China Economic Review* (2020), 59: 101364.

Zhang, Da, Qin Zhang, Shaozhou Qi, Jinpeng Huang, Valerie J. Karplus\*, Xiliang Zhang\*. Integrity of firms' emissions reporting in China's early carbon markets. *Nature Climate Change* (2019), 9: 164-169.

Zhang, Da\*, Justin Caron, Niven Winchester. Sectoral aggregation bias in the accounting of emissions embodied in trade and consumption. *Journal of Industrial Ecology* (2019), 23(2): 402-411.

Rausch, Sebastian, Da Zhang\*. Capturing natural resource heterogeneity in top-down energy-economic equilibrium models. *Energy Economics* (2018), 74: 917-926.

Li, Mingwei#, Da Zhang# (co-first author), Chiao-Ting Li, Kathleen M. Mulvaney, Noelle E. Selin, Valerie J. Karplus. Air quality co-benefits of carbon pricing in China. *Nature Climate Change* (2018), 8: 398-403.

Davidson, Michael R. #, Da Zhang# (co-first author), Weiming Xiong, Xiliang Zhang\*, Valerie J. Karplus\*. Modelling the potential for wind energy integration on China's coal-heavy electricity grid. *Nature Energy* (2016), 1: 16086 ([Nature Energy Editors' picks from 2016](#)).

Zhang, Da, Marco Springmann, Valerie J. Karplus. Equity and emissions trading in China. *Climatic Change* (2016), 134: 131-146.

Karplus, Valerie J., Sebastian Rausch, Da Zhang\*. Energy caps: Alternative climate policy instruments for China? *Energy Economics* (2016), 56: 422-431.

Springmann, Marco, Da Zhang, Valerie J. Karplus. Consumption-Based Adjustment of China's Emissions-Intensity Targets: An Analysis of its Potential Economic Effects. *Environmental and Resource Economics* (2015), 61: 615-640.

Zhang, Da, Valerie J. Karplus, Cyril Cassica, Xiliang Zhang. Emissions Trading in China: Progress and Prospects. *Energy Policy* (2014), 75: 9-16.

Zhang, Da, Sebastian Rausch, Valerie J. Karplus, Xiliang Zhang. Quantifying regional economic impacts of CO<sub>2</sub> intensity targets in China. *Energy Economics* (2013), 40: 687-701.

### Other Peer-reviewed Publications

Mulvaney, Kathleen M., Noelle E. Selin, Amanda Giang, Marilena Muntean, Chiao-Ting Li, Da Zhang, H el ene Angot, Colin P. Thackray, Valerie J. Karplus. Mercury benefits of climate policy in China: Addressing the Paris agreement and the Minamata convention simultaneously. *Environmental Science and Technology* (2020), 54, 3: 1326-1335.

Cai, Bofeng, Can Cui, Da Zhang, Libin Cao, Pengcheng Wu, Lingyun Pang, Jihong Zhang, Chunyan Dai. China city-level greenhouse gas emissions inventory in 2015 and uncertainty analysis. *Applied Energy* (2019), 253: 113579.

Li, Mingwei, Da Zhang, Chiao-Ting Li, N. E. Selin, Valerie Karplus. Co-benefits of China's climate policy for air quality and human health in China and transboundary regions in 2030. *Environmental Research Letters* (2019), 14: 084006.

Yang, Yuanzhe, Hongyu Zhang, Weiming Xiong, Da Zhang\* (corresponding author), Xiliang Zhang\*. Regional power system modeling for evaluating renewable energy development and CO<sub>2</sub> emissions reduction in China. *Environmental Impact Assessment Review* (2018), 73: 142-151.

Kwon, Sae Yun, Noelle E. Selin, Amanda Giang, Valerie J. Karplus, and D. Zhang. Present and future mercury concentrations in Chinese rice: Insights from modeling. *Global Biogeochemical Cycles* (2018), 32(3): 437-462.

Weng, Yuyan, Da Zhang\* (corresponding author), Lanlan Lu, Xiliang Zhang\*. A general equilibrium analysis of floor prices for China's national carbon emissions trading system. *Climate Policy* (2018), 18(S1): 60-70.

Zhang, Xu, Xunmin Ou, Xi Yang, Tianyu Qi, Kyung-Min Nam, Da Zhang, Xiliang Zhang. Socioeconomic burden of air pollution in China: Province-level analysis based on energy economic model. *Energy Economics* (2017), 68: 478-489.

Zhang, Xiliang, Valerie J. Karplus, Tianyu Qi, Da Zhang, Jiankun He. Carbon emissions in China: How far can new efforts bend the curve? *Energy Economics* (2016), 54: 388-395.

Luo, Xiaohu, Justin Caron, Valerie J. Karplus, Da Zhang, Xiliang Zhang. Interprovincial Migration and the Stringency of Energy Policy in China. *Energy Economics* (2016), 58: 164-173.

Qi, Tianyu, Niven Winchester, Valerie J. Karplus, Da Zhang, Xiliang Zhang. An analysis of China's climate policy using the China-in-Global Energy Model. *Economic Modelling* (2016), 52, Part B: 650-660.

Zhu, Zhao, Da Zhang\* (corresponding author), Peggy Mischke, Xiliang Zhang. Electricity generation costs of concentrated solar power technologies in China based on operational plants. *Energy* (2015), 89: 65-74.

Zhang, Da, Weiming Xiong, Chun Tang, Zhen Liu, Xiliang Zhang. Determining the appropriate amount of subsidies in wind power: The Integrated Renewable Power Planning (IRPP) model and its application in China. *Sustainable Energy Technologies and Assessments* (2014), 6: 141-148.

Kishimoto, Paul, Da Zhang, Valerie J. Karplus. Modeling regional transportation demand in China and the impacts of a national carbon constraint. *Journal of the Transportation Research Board* (2014).

Zhang, Da, Qimin Chai, Xiliang Zhang, Jiankun He, Li Yue, Xiufen Dong, Shu Wu. Economical assessment of large-scale photovoltaic power development in China. *Energy* (2012), 40: 370-375.

Zhang, Da, Songlin Tang, Bao Lin, Zhen Liu, Xiliang Zhang. Co-benefit of polycrystalline large-scale

photovoltaic power in China. *Energy* (2012), 41: 436-442.

He, Jiankun, Zhiwei Yu, Da Zhang. China's strategy for energy development and climate change mitigation. *Energy Policy* (2012), 53: 7-13.

Zhang, Da, Xiliang Zhang, Jiankun He, Qimin Chai. Offshore wind energy development in China: Current status and future perspective. *Renewable and Sustainable Energy Reviews* (2011), 15: 4673-4684.

### Working papers

Li, Chenxing, Yang Yu, Andrew Yao\*, Da Zhang\*, Xiliang Zhang\*. An authenticated and secure accounting system for international emissions trading.

Qin, Shize, Lena Klaußen, Ulrich Gallersdörfer, Christian Stoll\*, Da Zhang\*. Bitcoin's future carbon footprint.

Karplus, Valerie J., Da Zhang\*. When low hanging fruit is beyond reach: New practice orientation and firm energy efficiency.

Karplus, Valerie J., Yasheng Huang, Da Zhang. State Control as a Substitute for Environmental Regulation? Evidence from Chinese Cities.

## **Research Projects**

*Principal-Investigator*, "The optimization and supporting mechanism of coordinated development of wind and solar power in China", the National Science Foundation of China (RMB 495,000), 01/2020-12/2023.

*Principal-Investigator*, "Integrated economic and social benefit evaluation of energy revolution led by renewable energy in China", the National Energy Administration/ World Bank China Renewable Energy Scale-up Program (CRESP) (RMB 1,500,000), 10/2019-10/2020.

*Principal-Investigator*, "Regional analysis of China's carbon pricing policy implications on energy and CO<sub>2</sub> emissions", the International Energy Agency (EUR 131,200), 07/2019-06/2022.

*Principal-Investigator*, "The embodied domestic demand for oil to support energy security", the National Development and Reform Commission (RMB 100,000), 04/2020-12/2020.

*Principal-Investigator*, "Energy consumption forecast and control targets in the 14th Five-Year Plan period", the National Development and Reform Commission (RMB 100,000), 10/2019-04/2020.

*Principal-Investigator*, "Data quality analysis and warning systems for the ETS firms", the Environmental Defense Fund (RMB 495,000), 10/2020-10/2021.

*Principal-Investigator*, "The application of big data in enterprise continuous online monitoring system to environmental governance practice: statistical analysis and field trials", Tsinghua-INDITEX Sustainable Development Fund (RMB 300,000), 01/2020-12/2021.

*Principal-Investigator*, "Research and application demonstration of big data system for energy environment of new energy vehicles", Tsinghua University - Toyota Joint Research Institute (RMB 300,000), 01/2020-12/2021.

*Co-PI*, "Management and energy efficiency in a Chinese manufacturing cluster" (jointly with Valerie J. Karplus), multiple funding sources to support a firm-level field experiment (~\$150,000), since 03/2016.

*Key Person*, "Technical Assistance: Developing Cost-Effective Policies and Investments to Achieve

Climate and Air Quality Goals in the Beijing– Tianjin–Hebei Region”, funded by Asian Development Bank (\$597,785), 10/2016-09/2019.

*Key Person*, “Tsinghua-MIT China Energy and Climate Project”, funded by multiple sponsors (~\$500,000 annually), 10/2011-10/2016.

*Key Person*, “Analysis of Potential Areas for Danish-Chinese R&D Cooperation within Innovative Renewable Energy (RE) Technologies” (jointly with Aalborg University, Denmark), funded by Sino-Danish Renewable Energy Development Program (860,000 DKK), 03/2011 – 10/2011.

## **Professional Activities**

2019

- Research visit at MIT Joint Program on the Science and Policy of Global Change, December 2019
- Research visit at Department of Economics, Stanford University (host: Prof. Lawrence Goulder), November 2019.
- Invited talk at School of Environment, Peking University, Beijing, China, October 2019.
- Invited discussant, The IEA/OECD Climate Change Expert Group (CCXG) Global Forum, the 19th Annual International GHG ETS workshop, Paris, France, October 2019.
- Invited discussant, Asia-Pacific Climate Week (APCW), Bangkok, Thailand, September 2019.
- CAERE-RUC Summer School of Environment and Natural Resources Economics 2019, Beijing, China, July 2019.
- Invited talk at School of Environment, Nanjing University, Nanjing, China, June 2019.
- Invited talk at School of Urban and Regional Science, Shanghai University of Finance and Economics, Shanghai, China, June 2019.
- Invited talk at School of Management, Shanghai Jiaotong University, Shanghai, China, June 2019.
- Invited talk at School of Economics, Fudan University, Shanghai, China, June 2019.
- Invited talk at China-Australia Forum on New Energy Opportunities, Beijing, China, May 2019.
- Invited talk at School of Management, Beihang University, Beijing, China, April 2019.

2018

- Session Chair, the 6th World Congress of Environmental and Resource Economists, Gothenburg, Sweden, June 2018.
- Invited speaker at USAEE Energy Symposium: China’s Role in The Global Energy Landscape, Lehigh University, Bethlehem, U.S., April 2018.
- The Association of Environmental and Resource Economists Session at Eastern Economics Association Conference, Boston, U.S., March 2018.
- Invited talk at School of Environment, Southern University of Science and Technology, Shenzhen, China, January 2018.

2017

- The 1<sup>st</sup> China Association of Environmental and Resource Economists (CAERE) Conference, Beijing, August 2017.
- Invited talk at School of Economics and Management, China University of Petroleum, Beijing, China, July 2017.
- The 40<sup>th</sup> IAEE Conference. Singapore, June 2017.
- 2017 China Econometric Society Meeting, Wuhan, China, June 2017
- The 3<sup>rd</sup> Biennial Conference of China Development Studies, Shanghai, China, June 2017.

- Invited talk at School of Environment, Shanghai Jiao Tong University, Beijing, China, June 2017.  
2016

- Invited talk at School of Management, Beihang University, Beijing, China, June 2016.  
2015

- The 2nd Empirical Management Conference, Stanford, U.S., December 2015.
- Invited talk at “New Developments in CGE Modeling” Workshop, Mannheim, Germany, November 2015.
- The 33<sup>rd</sup> USAEE Conference, Pittsburgh, U.S., October 2015.
- The 2<sup>nd</sup> Biennial Conference of China Development Studies, Shanghai, China, June 2015.
- The 4<sup>th</sup> AERE Conference, San Diego, U.S., June 2015.
- Organizer and speaker at the 2<sup>nd</sup> Chinese Youth Environmental Scholar Forum at Yale University, New Haven, U.S., May 2015.
- Invited discussant at “Brown University workshop on environmental governance in China”, Providence, U.S., May 2015.

2014

- Invited talk at “Climate Policy in China and Europe: Progress and Prospects in Emissions Trading” Workshop, Mannheim, Germany, December 2014.
- Moderator at MIT Center for Energy and Environment Policy Research (CEEPR) Workshop, Cambridge, U.S., November 2014.
- Presentation at EPPA Workshop, MIT Joint Program on the Science and Policy of Global Change, Cambridge, U.S., November 2014.
- Invited talk at the 1<sup>st</sup> Chinese Youth Environmental Scholar Forum at Harvard University, Cambridge, U.S., November 2014.
- Invited talk at Zentrum für Europäische Wirtschaftsforschung (ZEW) lunch seminar, Mannheim, Germany, August 2014.
- Invited research tour at Humboldt University of Berlin, University of Bonn and Deutsche Forschungsgemeinschaft, Germany, August 2014.
- The 5<sup>th</sup> Lindau Meeting on Economics Sciences, Lindau, Germany, August 2014.
- Invited short visit, Chair of Economics / Energy Economics, Department of Management, Technology, and Economics D-MTEC, ETH Zurich, Zurich, Switzerland, August 2014.
- The 5<sup>th</sup> World Congress of Environmental and Resource Economists, Istanbul, Turkey, June 2014.
- The 37<sup>th</sup> IAEE Conference. New York, U.S., June 2014.
- 2014 International Energy Workshop, Beijing, China, June, 2014.

2013

- Invited presenter, Tsinghua-Rio Tinto Energy Modeling Workshop, Brisbane, Australia, December 2013.
- Invited short visit, Zentrum für Europäische Wirtschaftsforschung (ZEW), Mannheim, Germany, July 2013.
- Annual GTAP conference, Shanghai, China, June 2013.

2012

- The 31<sup>st</sup> USAEE Conference. Austin, U.S., November 2012.
- The 6<sup>th</sup> Graduate Climate Conference. Pack Forest, U.S., October 2012.
- Ecomod 2012 Conference, Seville, Spain, July 2012.
- The 4<sup>th</sup> International Conference on Applied Energy, Suzhou, China, July 2012.

- Annual GTAP conference, Geneva, Switzerland, June 2012.

2011

- RETScreen International 2011 Conference, Niagara, Canada, June 2011.

2010

- The 8<sup>th</sup> National Doctoral Student Forum, Hohhot, China, September 2010.

## **Referee Service**

Reviewer for Nature Energy, Nature Climate Change, Nature Geoscience, Nature Sustainability, Joule, The Energy Journal, Climatic Change, China Economic Review, Environmental and Resource Economics, Environmental Politics, Resource and Energy Economics, Energy Economics, Ecological Economics, Journal of Global Economic Analysis, Transportation Research Part A: Policy and Practice, Global Environmental Politics, China: An International Journal, Climate Policy, Energy Policy, Applied Energy, Energy, Energy Strategy Reviews, Utility Policy, Journal of Cleaner Production, Resources, Conservation and Recycling, Science of the Total Environment, Environment and Planning C: Government and Policy, Computers & Industrial Engineering, Energy Science and Engineering, Sustainability Science, Computers & Industrial Engineering.