

China Scholarships Council Project

Principal investigator:

- Dr. Lili Wang, Senior researcher, UNU-MERIT, Maastricht University, The Netherlands

Co-investigator

- Dr. Rasmus Lema, Associate professor, UNU-MERIT, Maastricht University, The Netherlands

Collaborators:

- Prof. Dr. René Kemp, Professor, UNU-MERIT, Maastricht University, The Netherlands
- Prof. Dr. Daniel Karthe, Professor, United Nations University - Institute for Integrated Management of Matter Fluxes and of Resources, UNU-FLORES, Dresden, Germany
- Dr. Lulu Zhang, Associate Programme Officer, United Nations University - Institute for Integrated Management of Matter Fluxes and of Resources, UNU-FLORES, Dresden, Germany
- Dr. Jack O'Connor, Senior scientist, United Nations University - Institute for Environment and Human Security, UNU-EHS, Bonn, Germany
- Dr. Thomas Ziesemer, Senior researcher, UNU-MERIT, Maastricht University, The Netherlands
- Dr. Sheng Zhong, Research fellow, Energy Studies Institute, National University of Singapore, Singapore.

Project title:

The road ahead: meeting the e-mobility challenge

Project description:

Electric vehicles (e-vehicles), without greenhouse gas emissions, are regarded as an important technology to fight climate change. However, if we look from another perspective, the mass production of e-vehicles is generating thousands of tons of battery waste every year that contains heavy toxic chemicals that is difficult to recycle and harmful to the surrounding environment and public health. This contradicts not only the original “green” intention of e-vehicles, but also the sustainable development goals. With the fast development of such new technologies, it becomes more and more important to understand the responsibility and uncertainty of new technologies and the associated social effects. In this project, we aim to study how emerging economies can build innovation capabilities in the e-mobility transition.

This project relates to the following priority areas recommended by the Chinese government in the National Medium- and Long-term Program for Talent Development (国家中长期人才发展规划纲要, 2010-2020):

- 能源资源 / Energy Resources
- 生态环境保护 / Eco-Environmental Protection

And also the areas in the Medium and Long-term Science and Technology Development Plan (国家中长期科学和技术发展规划纲要, 2006-2020) :

- 能源 / Energy
- 环境 / Environment
- 人类活动对地球系统的影响机制 / Human Activities and Their Impact on the Earth System
- 全球变化与区域响应 / Global Change and Regional Response
- 能源可持续发展中的关键科学问题 / Key Scientific Issues in Sustainable Energy Development

Keywords:

- E-mobility; E-waste; Green innovation; Environmental Economics; Eco-innovation; Sustainable development; Green transition.

Requirement:

- Highly motivated student with good English communication skills.
- Background (at the level of M.SC) in economics, management, or a relevant field.
- Knowledge in environmental economics and sustainable development.
- Excellent quantitative research skills.

5 major publications of the team:

- Lema, R., Andersen, M.H., Hanlin, R. & Nzila, C. (2022), Building innovation capabilities for sustainable industrialisation: Renewable electrification in developing economies, New York: Routledge. 292 P.
- Huang, P. & Lema, R. (2021), Green Innovation in China, in The Oxford Handbook of China Innovation. Fu, X., Jin, C. & McKern, B. (eds.). Oxford University Press, (Oxford Handbooks).
- Nie, H., Kemp, R. & Vasseur, V. (2020), Exploring the Changing Gap of Residential Energy Consumption per Capita in China and the Netherlands: A Comparative Analysis of Driving Forces, *Sustainability*, 12(11), DOI: <https://doi.org/10.3390/su12114634>
- Diepenmaat, H, Kemp, R. & Velter, M. (2020), Why sustainable development requires societal innovation and cannot be achieved without this, *Sustainability*, 12(3): 1270, DOI: <https://doi.org/10.3390/su12031270>
- Liu, Y., Zhong, S. & Jiang, H. (2018), A Key Pillar Of Energy Transition: Smart Grid Innovation Trends, Member Journal of GEIDCO, issue 10, Page 39.

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