

# China's Way towards Decarbonization: Unrealistic Promise or a Credible Commitment?

*Francesco Macheda, Associate Professor | Political Economy, Xi'an Jiaotong - Liverpool University, Suzhou, China*  
*Email: Francesco.Macheda@xjtlu.edu.cn*

This article analyses the strategy of carbon neutralization pursued by the Chinese government over the past decade. It is argued that the crucial position of State-owned enterprises (SOEs) in China's energy sector, combined with the adoption of selective industrial policies by the government, have been playing a paramount role in effectively restraining the consumption of fossil fuels, on the one hand, and fostering the advancement of domestic capabilities in the field of renewable energy, on the other. This helped China set in motion a virtuous cycle of technology substitution of obsolete technologies for cleaner technologies, thus facilitating the transition to renewable energy. Overall, the analysis of the structural features underlying the progressive decoupling of carbon emissions from the use of energy resources suggests that China has been setting the preconditions for decreasing the costs of energy transformation, thereby balancing the policy goals of reducing environmental pollution and of securing economic growth in the long run.

## The objectives and research questions



The main objective is to show that in low- and middle-income countries like China market forces alone are structurally inadequate to spark the rapid development of renewable energy resources and initiate the technological replacement of obsolete technologies with cleaner technologies. In particular, I will attempt to answer two questions: first, has the public prominence in the ownership structure of coal and thermoelectric companies provided the public sphere with the institutional capacity to accelerate the contraction of fossil fuel consumption in spite of the comparative advantage of coal price? Second, have the involvement of SOEs and the mobilization of public resources towards the renewable energy sector contributed to effectively solving market externalities and supporting the growth of firms in low-carbon industries?

## The methods



After outlining the structural characteristics of the Chinese energy-economic model, the paper develops the hypotheses concerning the role of the State in energy transition processes in less developed countries. In particular, the paper questions the main assumptions underlying the Environmental Kuznets Curve (EKC), which reduces technological progress in the field of clean energy production to a mere byproduct of economic growth. Against this background, the research theoretically explains the effects of State intervention in fostering innovation in the energy sector. Finally, the suggested hypothesis is tested through a detailed examination of the critical role played by public institutions in laying the foundations for a progressive energy transition in China.

---

## The main policy recommendations



The main policy recommendations are to a. strategically use green industrial policies to internalize positive externalities and stimulate the entrance of new operators in the market; b. strategically support public research institutes, universities, and basic research centres with the aim of increasing the level of technological capacities in the field of green technologies and reducing the production cost faced by the enterprises; c. further expand the new-energy infrastructure network in order to increase the efficiency of energy transmission and reduce transaction costs, thereby supporting the upgrading of a manufacturing industry specialized in the production of renewable energy equipment.