



EDITORIAL

The Importance of Governance Efficiency in Environmental Policy Research in Energy Shortage Period

Zeyuan Zheng Shujian Zhang*

School of Government, Shenzhen University, Shenzhen, China

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Global population is projected to reach 8 billion around mid-November this year ^[1], which highlights the resource strain future humanity will face. Many economies in Europe and Asia are experiencing extreme drought and power shortages because of the hot weather this summer, accompanied by severe water shortages. Germany revised a key climate target draft law to reach greenhouse gas emissions neutrality in the country's energy industry by 2035 ^[2]. European Parliament has rejected a motion to oppose the inclusion of nuclear and gas as environmentally sustainable economic activities meanwhile ^[3]. In a way, this makes parts of Europe look rather vulnerable to achieving carbon neutrality and weakens 2035 renewable target in continent of Europe where many advanced green development ideologies initiated. At the same time, geopolitical tension and conflict have undermined the stability of the international energy market, slowed down the process of global collaboration on climate governance.

In any case, many countries have invested a great deal of money and regulatory costs into sustainable energy

transition programs, in an attempt to continuously improve the structure of industries and the quality of jobs in response to global climate change ^[4]. In particular, the United States and China, the two largest economies, have enacted unprecedented legislation to ensure the renewable energy plan is promoted while taking the lead in developing new energy industries. The US just passed the Inflation Reduction Act as the biggest step against climate change the country has ever taken ^[5] and China also has pledged to end foreign coal investment and to stop building coal power plants overseas at the UN General Assembly meeting ^[6].

The total amount of fossil energy on the Earth is limited, and so is the fiscal expenditure of governments. Especially after the COVID-19 pandemic in the past few years, governments have costed a lot of financial resources in the fight against the epidemic. The negative effects of fiscal austerity will show up in the following period, which is not a positive sign for the global energy transition goals ^[7]. Plenty of political economy research will be essential to

*Corresponding Author:

Shujian Zhang,

School of Government, Shenzhen University, Shenzhen, China;

Email: zsj@szu.edu.cn

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figure out how to provide decent living with minimum energy and fund^[8,9]. Different local governments can use the same amount of funds to achieve different environmental governance efficiency, thus making local economic and social development more sustainable.

The US just passed the Inflation Reduction Act in August 2022, which invests more than \$360 billion in energy and climate change programs over the next decade, including enormous tax incentives to advance renewable energy and electric vehicles^[10]. The act uses huge financial resources and will have a significant impact on the development of related industries. The governance efficiency of fiscal investment in these industries is an extremely important research issue. The assessment studies at each policy stage can serve as a foundation for the implementation of a broader environmental governance plan in the future^[11]. The government's policy package should not only address environmental issues, but also improve employment structure and equity.

In recent years, in addition to maintaining a cooperative attitude on international climate governance issues, China has also actively invested in clean energy facilities, thanks to technological improvements in grid-connection and energy storage costs^[12-14]. Government investment efficiency in wind power requires cost and benefit studies. This kind of research should pay more attention to the imbalance of China's regional development and the necessity of cross-border comparison analysis^[15]. China's renewable energy sector is booming, solar and wind now account for 635 GW of power, making up 26.7% of total national capacity^[16]. The Chinese government will continue to promote widespread fiscal support for the new energy industry, aiming at addressing issues like clean energy capacity development, sustainable urban planning, technology innovation, green transport and air pollution.

Climate change is the most important issue of the 21st century, but it is also a very new area of governance^[17]. The world's major economies have invested significant financial resources to encourage projects in the clean energy transition, which is critical to the future economic structure, industry development and human health. However, governments have little experience in monitoring the funding needed to tackle climate change. Public economics profession should actively carry out empirical research on the efficiency of regulation and governance in related fields^[18].

Conflict of Interest

There is no conflict of interest.

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