

Tentative Outline

Special Thematic Issue for the journal *Current Chinese Science* (Field: Energy)

Research on evolution game and policy intervention effect of complex system of energy industry chain under the background of "double carbon" and disturbance

Guest Editor: Junhai Ma

- **Scope of the Thematic Issue:**

The COVID-19 in 2019 has had a huge impact on world politics and the economy; It has caused a huge impact on the industrial chain and supply chain of the energy system. In order to reshape the global energy industry chain and supply chain system, it is necessary to study the evolution game and policy intervention effect of the complex system of the energy industry chain under the background of "double carbon" and disturbance, carbon emissions are considered one of the main causes of global warming. To protect the environment and reduce the impact of carbon emissions on human survival, governments of all countries are advocating the strategy of "low carbon". Scholars have also been trying to find a balance between reducing carbon emissions and achieving economic growth through data analysis and model construction. Research fields include Carbon neutralization, Carbon peak, Carbon Sink, Carbon capture, utilization and storage (CCUS), Carbon Emission Reduction (CER), Carbon trading, Carbon quota, and so on. Optimization of data transaction, blockchain, digital twin, metaverse sharing, metaverse management, virtual production, etc.

This special issue aims to gather the above original research on low-carbon, and especially welcomes the submission of new technologies application such as complex sensing technology, metaverse, virtual perception technology, big data, Internet of things, blockchain, artificial intelligence, inherent complexity, characteristic evolution, policy intervention, etc. to carbon emission reduction, including but not limited to the following research. It mainly (but not only) includes:

Keywords: Carbon Emission Reduction, blockchain, digital twin, metaverse sharing, metaverse management, virtual production

Sub-topics:

- Industrial upgrading, industrial transformation, sustainable development, circular economy, and urban transformation under the dual carbon goal;
- The financial support and complex path for the realization of the dual carbon goal;
- The influence factors and realization time of carbon peak and carbon neutralization;
- Double carbon goal realization and perception technologies, including blockchain, Internet of things, and big data application;
- Government regulation and policy support the dual carbon target.
- Green applications of digital twins, metaverse sharing, metaverse management, virtual production, and digital twin production methods.
- Stability analysis, time series analysis, bifurcation and chaos analysis, fluctuation control, and robustness of the above-mentioned systems.

Tentative titles of the articles:

1. Research on game behavior of three-oligarch shared vehicle operators considering power curtailment factors
2. Does a new electric vehicle manufacturer have the incentive to battery life investment? A study based on the game framework and complex dynamics
3. Study on the Economic Impact of Environmental Tax and perturbation effect under the Background of State-Owned Enterprise Shareholding Reform in Open Economic System

4. Dynamic game evolution mechanism and complex dynamics characteristics of green supply chain of fresh agricultural products under low carbon background
5. Research on the complexity and application of new energy battery innovation model based on dynamic Evolutionary game in low carbon context
6. How Does the Government's Limitation of Carbon Emission Policy Impacts Retailing Decision on the Heterogeneous Leadership Supply Chain?

Schedule:

✧ Thematic issue submission deadline: **31 July 2023**

Contacts:

1- Guest Editor

Name: Junhai Ma

Affiliation: College of Management and Economics, Tianjin University, Tianjin 300072

Email: mjhtju@aliyun.com

2- Co-Guest Editor

Name: Jieren Cheng

Affiliation: School of Computer Science and Technology, Hainan University, Haikou 570228, China

Email: cjr22@163.com

3- Co-Guest Editor

Name: Yang Liu

Affiliation: College of Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter EX4 4QF, UK

Email: y.liu2@exeter.ac.uk
