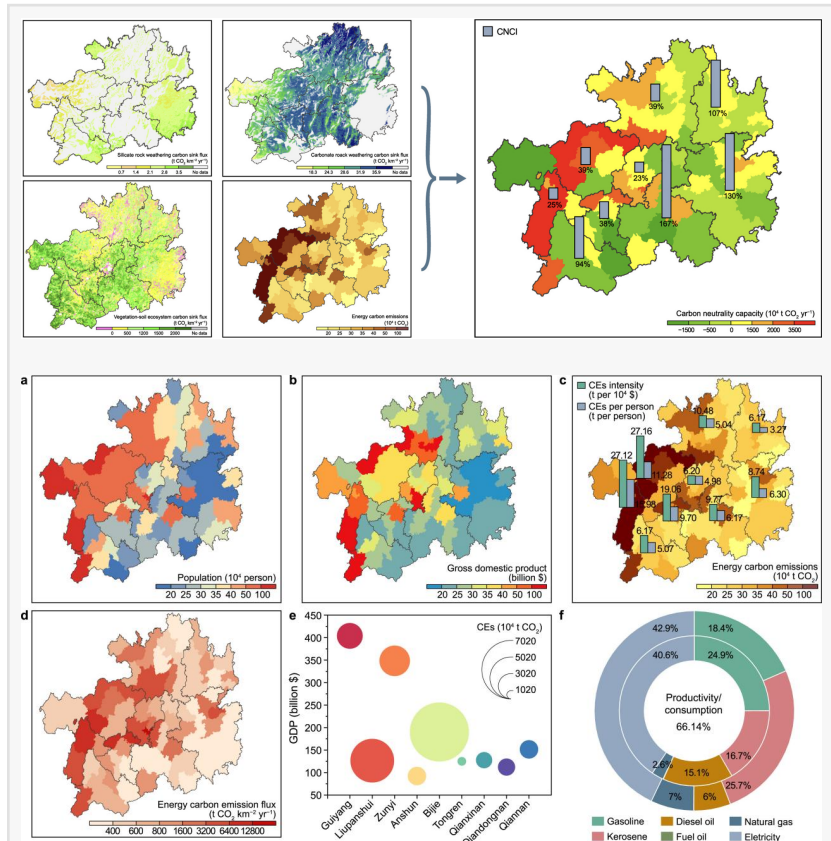


Introducing the Carbon Neutrality Capacity Index: A Revolutionary Model for Evaluating Global Carbon Sink Contributions

FAYETTEVILLE, GA, USA, July 23, 2023 /EINPresswire.com/ -- Currently, achieving carbon neutrality has become a paramount global concern. As the world's largest carbon emitter, China is crucial to global climate change mitigation efforts. To achieve sustainable development and meet carbon neutrality targets by 2060, it's important to accurately understand China's carbon neutrality capacity (CNC).

In a new study published in Volume 15 of the journal [Environmental Science and Ecotechnology](#), researchers from the Chinese Academy of Sciences (Guiyang), revealing a new model for accurately evaluating carbon neutrality capacity, has been published by leading climate scientists. The Carbon Neutrality Capacity Index (CNCI) model evaluates contributions from various carbon sinks, providing vital data for climate change policy development and emission reduction strategies. The study utilized a variety of advanced analytical methods to construct the CNCI model, with a key innovation being the inclusion of carbonate and silicate rock chemical weathering as carbon sinks, an area often overlooked in carbon neutrality assessments. In addition to this, the model also evaluated the vegetation–soil ecosystem as a carbon sink. The results show that Guizhou has a CNCI of 57%, significantly higher than both China's average (11.88%) and the global average (27.14%). Furthermore, regions within Guizhou, such as Libo and Pingtang, showed surpluses, with CNCIs as high as 643% and 581%, respectively.



Guizhou's carbon emissions totalled 280 Tg CO₂, with notable spatial differences: higher in the west and lower in the east. Bijie and Liupanshui cities had the highest emissions due to their significant roles in energy production and mineral resources, ma

Highlights

- Rock weathering carbon sinks are incorporated into the carbon neutrality evaluation.
- A new model of the carbon neutrality capacity index (CNCI) was established.
- CNCI in Guizhou is 57%, accounting for 4.8 times that of China.
- Comparing with national and global data to enhance comparability.

These results highlight the region's potential to make a substantial contribution towards China's carbon neutrality goal. The study concludes by emphasizing the critical role rock weathering carbon sinks play in evaluating the CNC of terrestrial ecosystems. It also proposes the CNCI model as an efficient and applicable tool for comprehensive and systematic analysis of carbon neutrality, both at a national and global level. In the long term, the findings of this study could play a pivotal role in accelerating progress towards global carbon neutrality, a goal of significant importance in tackling climate change. The researchers hope that the findings of this study will provide valuable insights for scientists, policymakers, and climate activists around the globe.

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References

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