Review of: "Research on the uncertainty of low-carbon environmental governance system and its impact on the dual goals of carbon emission reduction"

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Potential competing interests: No potential competing interests to declare.

This paper studies the impact of China's low-carbon governance environment on the dual goals of carbon emission reduction. They constructed a comprehensive uncertainty index to evaluate China's low-carbon governance environment. And the dynamic panel model and PSTR transfer model are used to further identify the impact of this environmental uncertainty. Additionally, they discussed the specific impact of different dimensions of this index. This paper may contribute to the existing literature. However, I have the following comments or questions for discussion.

1. Is mentioning "the dual goal" in the title necessary? This is a scientific paper trying to uncover what truth China tells us. Such expression is more often seen in government reports.

2. The introduction may need to be better organized. The logic should not be that you study this topic because the uncertainty of a low-carbon environmental governance system is important. It should be that carbon emission reduction is crucial; China built the low-carbon environmental governance system for emission reduction, so the impact of its uncertainty on carbon emission reduction is essential. Additionally, the meaning of the uncertainty of a low-carbon environmental governance system should be further clarified.

3. As the construction of the uncertainty index (named fuzzy comprehensive evaluation) may be your contribution to the current work, you should clarify the promotion of this index compared to previous studies. In addition, what concerns me is that such a comprehensive evaluation has its shortcomings. As you can see, so many indicators are used in the construction; some are not related to the low carbon governance.

4. I suggest adding more details on variable selection, especially for the indicator of carbon intensity. Maybe most studies use carbon emissions/GDP to measure carbon intensity; if this paper is the case, I think carbon intensity works better than carbon emission. Just using carbon intensity can explain the results. I believe another better indicator you may consider is carbon efficiency. PS, this is just a suggestion for reference, not a must-change.

5. You use the PSTR model to study the nonlinear relationship. Discussing more in the introduction will be helpful. It's better to find some theoretical support for this nonlinear relationship.