Review of: "How Blockchain Technology Can Address Circularity and Trace Emission in the Energy Sector"

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Potential competing interests: No potential competing interests to declare.

Dear Authors

Thanks for submitting your research to Qeios. The paper outlines how blockchain can be leveraged for CE practices. I believe research on the topic is valuable. However, I would suggest reducing the hype on the technology a bit and providing a more critical overview with concerns and limitations. Please accept some further comments.

Abstract.
The abstract is quite wordy. I would suggest reducing the length to make it more concise. Focus on the paper's objective and motives and provide some small insights on the research results. At the moment, it is more perceivable as an introduction. So please give some more insights also into the methodology and results.

Introduction

Similar to the abstract, the introduction is also a bit wordy and dispersive. The initial part on the circularity definition and meaning can be in my opinion, moved to the literature background section. The piece that starts with “From the “Revised Industrial Strategy” [5] (after COVID-19) of the EU it emerges that….” can probably be more suitable as a starting point for an introduction.

Blockchain Technology

When you say that blockchain is used since 1990’ it feels a bit odd. There were some premises of blockchain before 90’ also, and there is research from 92’, but the term blockchain usually refers to late 2000. Please be more specific in what you wish to state here. I believe you should also specify that the characteristics you are listing only belong to some DLTs and not all platforms are, for example, energy intensive.

Blockchain Technology for supply chain and Circularity

I think this paragraph is too hyped and reflects an idea of a blockchain as a panacea that solves every problem. This view was shared at the beginning of the blockchain era, if we can call it like this, but now there is much more skepticism and more research that offers a critical overview of blockchain integration in the supply chain sector. I would suggest balancing the strengths and limitations of the technology and propositive and disruptive articles on this topic.

Blockchain in the EU ETS

I am afraid this paragraph is a bit unclear. Please provide more technical insights into how blockchain can be integrated into this field. If possible, provide an overview of the authorities involved, data transport, and validation mechanisms.

Blockchain in raw materials tracing.

The paragraph describes the implementation of Minespider for the traceability of raw materials. A scheme would help the reader to understand its functionality. However, it does not explain the relationship with the rest of the article, if not that it is linked with the circular economy in some sense. Please clarify that aspect.

Blockchain in certification of energy services delivery

This paragraph is a bit too descriptive of some examples and difficulties. It requires a bit more scientific approach with a critical overview of how DLTs can contribute to the mentioned sector. The approach appears to be also excessively theoretical.

Blockchain in raw materials tracing

This paragraph well balances theoretical and more practical approaches. I like the problem formulation, although it is a bit simplistic. Again it would also benefit from a critical approach from the authors enlightening the limitations and thoroughly explaining what aspects of the model can go wrong and under which circumstances it can fail. Also, probably here is expected a bit more reference to prior literature and similar works as to explain how authors contributed to literature and which areas are now more investigated, and which areas need further investigation.

Good luck with this research