

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

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"How Blockchain Technology Can Address Circularity and Trace Emission in the Energy Sector" (v1) presents a very interesting topic. However, the paper in question has a few things that could improve its overall quality. These concerns are summarized as follows:

1) Excessive wordiness and confusing structure make comprehending the author's intended message difficult.

One example is in the introduction, where an enumerated list describes waste reduction, raw materials circle closure, and Innovative business models. However, this list needs to be introduced; thus, it needs to be clarified what these elements are. The following paragraphs implicitly define them as principles of the circular economy. Another example is that there is a dedicated section for describing blockchain technologies (Section 2). However, several important concepts, such as Smart Contracts and Types of blockchain networks (public, private, etc.), are not discussed and introduced in the middle of other sections. In particular, Section 4.3, which aims to describe blockchain in the certification of energy services delivery, verbosely describes the Hyperledger Platform.

2) There needs to be more important references to ensure the credibility and validity of the paper.

For instance, the data about percentages (90% of water stress from raw material extraction) in the introduction. Another example is in Section 4.1 Blockchain in EU ETS. The last two paragraphs: "Several papers propose blockchain technology to overcome frauds and provide transparency to ETS monitoring and reporting. The architecture is depicted in Figure 3" There is no reference to the several papers, and there is no clear architecture of what is shown in Figure 3. Is the architecture a summary for all the papers? From a particular use case? Without these key sources, the arguments presented lack substantial support and fail to establish a solid foundation for the research.

Within this concern, Chapter 2 needs to provide a formal and critical overview of blockchain technology with appropriate references and key concepts (also mentioned in the previous concern).

3) The contribution of the paper still needs to be clarified. It is essential for scholarly work to clearly outline its unique contribution to the field, yet this aspect needs to be added to this paper.

On the one hand, the title is expected to have a more formal background on the European perspective. However, few details of how some of the authorities involved, or legislative frameworks presented in the introduction, connect to sections 3 and 4. Addressing the verbosity of the document could clarify the author's main contribution.

On the other hand, sections 3 and 4 lack a summary or discussion that connects the presented use cases with the

particular benefits (or advantages) of the technology's strengths and limitations. Section 4 presents a Table with a brief discussion, but this is only related to the use case described and does not provide the author's novel insights or critical analysis. Adding this type of insight could be a great contribution to the field.