

Review of: "Low-Carbon Hydrogen Economy Perspective and Net Zero-Energy Transition through Proton Exchange Membrane Electrolysis Cells (PEMECs), Anion Exchange Membranes (AEMs) and Wind for Green Hydrogen Generation"

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Potential competing interests: No potential competing interests to declare.

The authors, Mittal et al., reported their work titled "Low-Carbon Hydrogen Economy Perspective and Net Zero-Energy Transition through Proton Exchange Membrane Electrolysis Cells (PEMECs), Anion Exchange Membranes (AEMs), and Wind for Green Hydrogen Generation." This work contains a thorough discussion of the results, the organization, and interpretation of the results. Hence, I recommend this work for publication after including the following points in the manuscript.

- 1) Are there any potential challenges or limitations associated with the scalability and practical implementation of this technology for meeting energy demands on a larger scale?
- 2) Has the long-term stability and durability of the AEMs, PEMECs, and wind been assessed under continuous operation? Are there any concerns related to material degradation or performance degradation over time?
- 3) Does the study discuss the environmental and sustainability aspects of this technology, such as the source of materials used for membrane formation?
- 4) For the integrity of the research background, the following literature about energy production applications of metal oxides is recommended to be considered: <https://doi.org/10.1016/j.mtcomm.2023.105661>; <https://doi.org/10.1016/j.jclepro.2023.138124>; <https://doi.org/10.1016/j.mseb.2023.117000>;