

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"

Alessandro Cosenza¹

¹ University of Palermo

Potential competing interests: No potential competing interests to declare.

The present work addresses advancing low-carbon hydrogen production methods, exploring the potential of AEM electrolyzers, ethanol electrocatalysis, and water electrolysis on the green hydrogen production. The manuscript is well-written, and a large part of it is dedicated to the state of the art. Nevertheless, some minor corrections should be done before publication. Here are some suggestions:

1. Reformulate and provide a clearer explanation of the research objective in the abstract. Moreover, explain the novelty of the present work in the introduction.
2. Elaborate on the statements in 1.1: "The water-gas shift reaction produces carbon dioxide with a CO₂ intensity of 5.5 kg CO₂/kg H₂" and "The NEF predicts that by 2050, 24% of the energy mix may be generated."
3. Define CCS in 1.1 and verify all abbreviations used.
4. The caption for Fig. 5 extends beyond the page.
5. Capitalize the word "Power" in the second line of point 3.
6. Correct the superscript in 5 to read 4,425 Nm³.
7. Check for appropriate spacing before the references in the text.
8. Provide an explanation of the functional principle of AEM when you introduce them.
9. The repetition of the abbreviation AEM in the conclusion should be addressed.