Review of: "Effective use of Waste Materials: A Case Study of Utilization of Fly Ash in Flexible Pavement Structures"

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Potential competing interests: No potential competing interests to declare.

The article presents valuable added value in the fields of civil engineering and environmental science, since the authors propose using waste material instead of natural minerals extracted from non-renewable deposits. Therefore, it is an example of cleaner production with a view to sustainable development rules. I have some minor comments. The abstract is not that clear. Please simplify it. Please complete the information about the carbon footprint and the increase of the binder percentage when incorporating fly ash.

Could the chemical composition of the fly ash be a factor that determines asphalt concrete mix behaviour? According to Woszuk et al. ("Fly ash as a low-cost and environmentally friendly filler and its effect on the properties of mixed asphalt," Journal of Cleaner Production), that might have been possible. Additionally, as tabulated, there is a quite large amount of carbon as well as CaO. Please try to interpret the results according to the chemical composition of fly ash in the discussion section.

Furthermore, the question to be raised is how the use of fly ash can increase asphalt pavement performance.

The authors can refer to the following studies conducted by the reviewer about the use of fly ash in flexible pavement.

10.1007/s41062-023-01230-6

10.1007/s42947-022-00190-x

10.1016/B978-0-323-90791-0.00007-X

10.1080/10298436.2022.2099855

10.1080/14680629.2022.2071756