

Interactive comment on “Reducing cost uncertainty in the drivetrain design decision with a focus on the operational phase” by Freia Harzendorf et al.

Anonymous Referee #2

Received and published: 16 October 2020

The paper addresses an important issue, and, in my view, should be published as an interesting contribution to an ongoing discussion. However, it cannot be regarded as excellent or a major breakthrough. The conclusions are a bit too trivial. They reveal that the proposed method is in principle working, but still suffering from a lack of reliable accessible data. So the original problem is not yet solved. And the advantage of direct drives versus drives with gears when using such a methodology in the way described in the paper comes as no surprise at all. What is not considered is e.g. the role of power density. Gears mean higher power density, and therefore less volume of material. And therefore, less risk of material imperfections and smaller probability of fatigue failures originating from such flaws. This aspect should be addressed.

In detail, I have a remark regarding line 240:

“...whereas the two-stage gearbox, the three-stage gearbox with a three-point suspension system, and the DFIG can mainly be attributed to wear out behavior” The term “wear out behavior” is too unspecific and incomplete. There are numerous failure modes and among them are fatigue and also wear; the expression “wear” in itself is comprising various mechanisms. The suitable distributions, e.g. Weibull, and their shapes vary considerably. Therefore, I regard the way gearbox failures are considered summarily and indiscriminate as “wear out” as too simplistic. There should be a comment on this!

Interactive comment on Wind Energ. Sci. Discuss., <https://doi.org/10.5194/wes-2020-37>, 2020.

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Discussion paper

