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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Water consumption from hydropower plants – review of published estimates and an assessment of the concept" *by* T. H. Bakken et al.

M. Marence (Referee)

m.marence@unesco-ihe.org

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The paper discusses water consumption from hydropower plants by the water footprint concept. The authors give very good and concise overview of the existing studies, the most relevant works on this topic and discuss in particular not only the methods of the footprint calculation/definition, but also disadvantages of the method and difficulties by the definition of the hydropower footprint and its' relevance as an absolute number. The hydropower water footprint is exclusively connected with reservoir evaporation, but the reservoirs are also the most feasible measure to improve the availability of water in region. Definition of the water footprint for multi-purpose projects or series of reservoirs in

cascaded power plants could become a challenge and is difficult to be unique defined. In the paper authors gave overview of different approaches for footprint definition, suggested the most suitable method and gave critical view on the concept and relativise the importance of water footprint of the hydropower and specially selected method of calculation. Dealing with water footprint as numbers is in case of hydropower and especially by generalization a very dangerous method putting hydropower in very bed light, forgetting that hydropower is still far the strongest renewable source of the electrical energy. This is also the opinion of the reviewer that, in his work as co-author (Demeke at al. 2013), suggested use of the footprint as one additional topic in the environmental assessment of the hydropower project.

Technical comment:

Page 8089, line 20-23: Demeke et al. used measured evaporation value (mean) for several years.

Page 8107, Table 4: Units for "Estimated annual evaporation loses" as "Mm" not clear. A "mm" in my opinion should be a suitable unit

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 8071, 2013.