

Greenhouse gas emissions from Swiss storage reservoirs

After the impoundment of reservoirs, Greenhouse gases (GHG) are emitted due to the decomposition of organic material in the flooded area. A multi-stakeholder research project, led by the International Hydropower Association (IHA), has developed the GHG Reservoir (G-res) tool (Fig. 1) to estimate the emissions attributable to the creation of a reservoir, taking into account the state of the land pre-impoundment, naturally occurring emissions and emissions related to other human activities over the lifetime of the reservoir.



Fig. 1: User guide cover for the G-res tool (source: <https://www.hydropower.org/>)

The aim of this thesis is to determine the GHG emission with the G-res tool for selected hydropower reservoirs in Switzerland. The obtained results should be compared with reservoirs worldwide where the GHG were also quantified using the G-res Tool. The findings shall also be assessed and discussed based on a comparison with the median life-cycle carbon equivalent intensities of other electricity sources, such as wind, solar photovoltaics and nuclear.

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