

Tremblay, A., Schetagne, R. 2006

**The Relationship Between Water Quality and Greenhouse Gas Emissions in Reservoirs.**  
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**Abstract:** The major greenhouse gases are carbon dioxide, methane and nitrous oxide. These gases are emitted from both natural systems and from anthropogenic sources. Hydropower is a very efficient way to produce electricity, in terms of greenhouse gases (GHGs), showing emission factors between one and two orders of magnitude lower than the thermal alternatives. The amount of GHGs emitted at the air-water interface of reservoirs varies over time. The magnitude of the GHG emissions of a future reservoir cannot be predicted adequately at present, but this information is becoming a major concern to evaluate the environmental issue of GHG as well as for determining the CO<sub>2</sub> trading emission credits of a project. Since GHG emissions from reservoirs are highly related to water quality, models predicting water quality could be used to predict the extent of anoxic waters with good confidence. In boreal reservoirs, the extent of anoxic waters is usually very limited and the methane emissions are very low.