

## Abstract

The energy transition is a very hot topic. This can create an information overload. For this reason, the first chapters create an overview and compare different energy carriers/fuels.

This thesis explores the requirements to supply hydrogen via *LOHC* (Liquid Organic Hydrogen Carriers). One of the few hydrogen storage and transport systems where the carrier can be reused.

The goal is to study the needs for developing a hydrogen supply chain to power ships while remaining objective. Tunnel vision is avoided.

The liquid organic hydrogen carriers first need to be hydrogenated. This means ‘loading’ hydrogen into the carrier molecule. Afterwards it can be released by a reactor and the carrier can be reused.

The carrier should be relocated again to the hydrogenation plant.

Mainly operations are influenced while infrastructure needs minor adaptations.

Conventional bunkering only has one direction of flow while with an LOHC system there are two. This translates to the entire supply chain.

Smaller projects illustrate that this technology is still in its early stages. But at the same time investments and fundings reflect overall interest.