

Reinventing liquid nitriding through Life Cycle Assessment: innovation towards a circular economy

Life Cycle Assessment as a tool for eco-design

In response to the challenges of decarbonization and resource conservation, the HEF Group has embarked on a major transformation of its CLIN[™] liquid nitriding technologies, such as ARCOR[®].

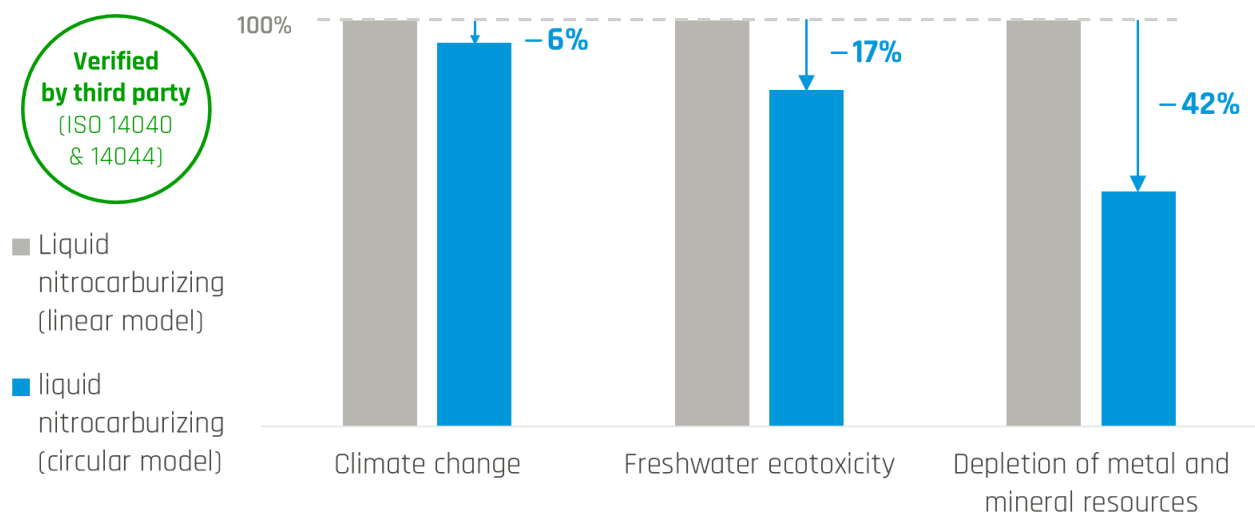
A Life Cycle Assessment helped identify the key drivers for environmental improvement and guided the development of a circular economy model, in which the waste generated is recycled into consumables that can be used directly on production lines.

What is Life Cycle Assessment?

Life Cycle Assessment (LCA) is a method for evaluating and quantifying the environmental impacts of a product or process throughout its entire life cycle, from the extraction of raw materials to the end of its life.

Proven environmental benefits

The transition to a circular economy model helps reduce resource extraction while improving the process's environmental performance across the impact categories studied.



This study illustrates how Life Cycle Assessment can support innovation, guide eco-design decisions, and objectively demonstrate the environmental benefits of the solutions developed.

A solution implemented worldwide

The recycling of waste from liquid nitrocarburizing processing lines, is made possible thanks to the ECO-CLIN[™] innovation.

This industrial process is being implemented worldwide through the GREEN-CENTER network.

As a result, the circular economy model developed for liquid nitriding has become a global reality.

