



INNOVATION AT AND WITH GRÖNINGER

The Gröninger high pressure cleaning technology has been developed in the Netherlands and is in use all over the globe. Strict environmental and labour laws in the Netherlands have made Gröninger innovative and creative. Together with our customers and

partners a wide set of principles and solutions has been developed, readily available for all future oriented tank cleaning facilities.



REDUCE YOUR (TANK) CLEANING FOOTPRINT

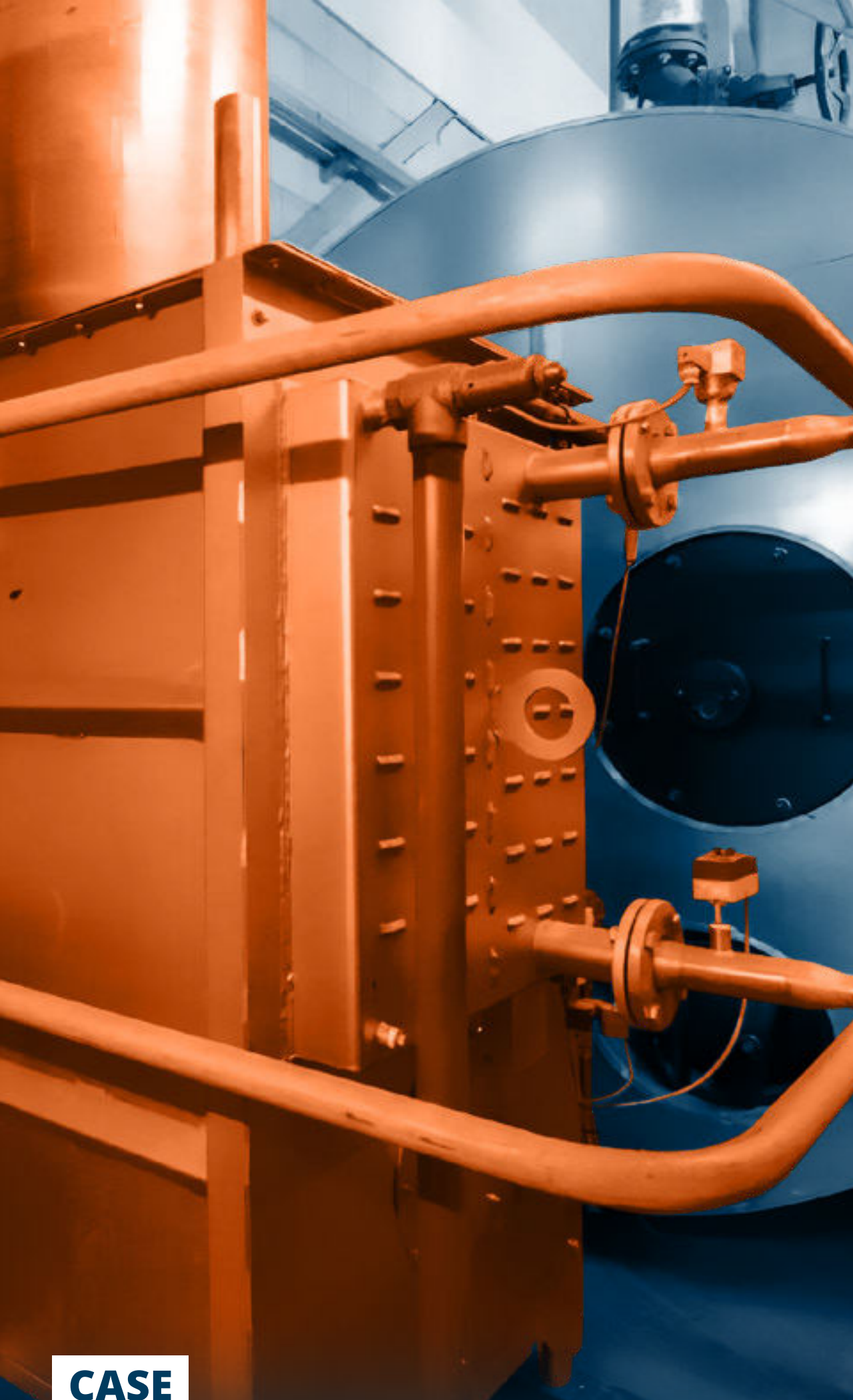
Will a sustainable approach to traditional tank cleaning pay off? By nature, the sector has a large carbon footprint. Fuel and power are needed for both logistics and cleaning aspects. The urge

to change is widely accepted throughout the industry. Gröninger has developed a sustainability scan to allow a realistic and practical analysis of the current state of facilities and the readiness for the future.

CASE

WATER REUSE

Water is becoming more and more precious and valuable. To minimize the water consumption, an advanced water treatment facility can purify the water in a way it can be reused for cleaning. This leads to water reductions of up to 70%.



CASE

HEAT RECOVERY

Most cleaning stations rely on fossil fuel to heat up the cleaning water. By recovering heat from waste water and flue gasses, the fuel consumption can be lowered; leading to lower variable costs and a reduced footprint.

**REDUCE
(TANK)
CLEANING
FOOTPRINT**

First of all the Gröninger systems are fully wired and PLC controlled, reducing the amount of manual labour to an absolute minimum and at the same time improving working conditions drastically. The cleaner becomes a process operator, the expertise and consistency is in the system. By carefully managing and setting-up the system water and energy usage can be reduced.

Innovative pump control allows for optimal temperature selection during the cleaning process, thereby eliminating idle time and waste of energy.

The combination of insulation, intelligent heat recovery and buffering is another source of improvement, allowing for both a reduction in variable costs and emissions. Any combination of heat pumps, solar panels and cogeneration can be integrated into Gröninger system's solutions.



CASE

CIP

Some cleaning procedure can be performed by recirculating water. This to meet the customers requirements or to increase the cleaning performance. Gröninger have developed a number of recirculation units for different product like beer and latex.

**JOINTLY GO THE ROAD
OF SUSTAINABILITY**

In addition everything can be visualized in the Gröninger cloud. Numbers tell the tale. Too good to be true?

Allow us to jointly go the road of sustainability by:

- Define and interpret your cleaning characteristics, i.e. your cleaning volumes and typical product ranges;
- Analyze your energetic situation and local technical options;
- Model your current situation and compare to a Gröninger situation;
- Determine short and medium term steps;
- Jointly decide if there is a valid business case;
- Start cleaning the green way... NOW!

We look forward to developing a winning solution with you!

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