

# Circular use of pilger oil

## Problem

At Sandvik AB, a world-leading engineering group, a very-high-performance chlorinated paraffin oil is used in the production of non-standard, stainless steel tubes and pipes. The total oil volume in the process is 100 m<sup>3</sup>, serving 11 pilger mills.

The process contaminates the extremely environmentally hazardous oil with large quantities of submicron particles. Eventually, up to 40% of the oil volume is made up of these particles. Sandvik AB saw productivity decreases by 20 – 30% leading up to oil changes. Maintenance cost also increased and keeping up the production became increasingly difficult as the oil contamination levels rose. The used oil was frequently sent to destruction and new oil had to be bought, accumulating high costs.

**To minimize cost and reduce the environmental impact, Sandvik wanted to find ways to reuse the oil in the process.**

## Solution

A first generation Stand-alone Double Separation Technology (DST) system was installed at Sandvik AB's factory site.

The DST system is used for cleaning and regenerating highly contaminated and high viscosity oil in industrial processes.

The system is used to regenerate the pilger oil again and again, removing the need to discard and replace the oil.

The unit installed at the factory site can serve several pilger mills with regenerated oil.

## Result

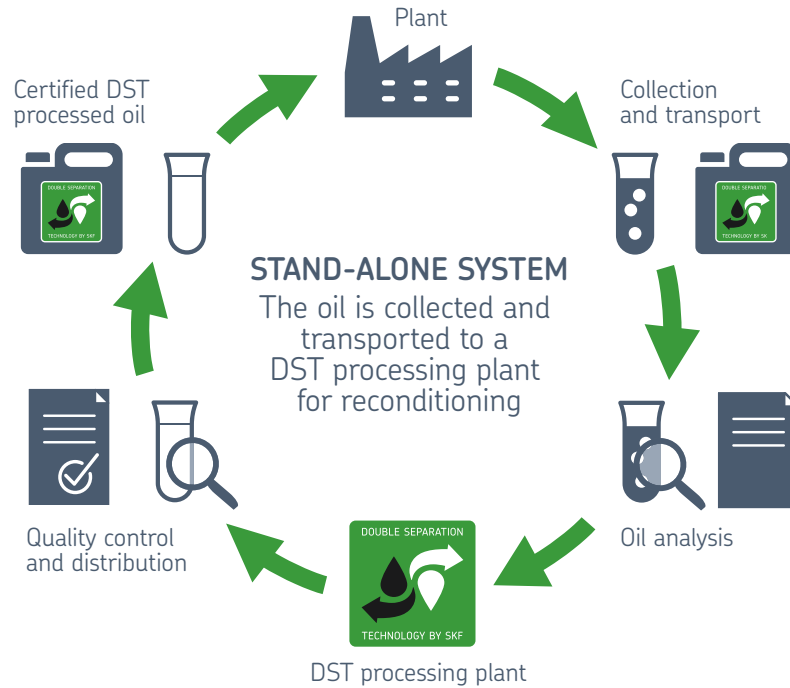
- The regenerated oil has the same quality as new oil.
- CO<sub>2</sub> emission is reduced by 2.4 tonnes every time it is circulated. In total, a reduction of up to 90% of CO<sub>2</sub> emission.
- Total recovery rate of the oil is between 95-99%, which means minimal waste generation.
- The waste results in a dry cake-like matter which can then be disposed of in an environmentally safe manner, without extreme costs for handling and disposal.
- The same technology can be used for other types of pilger oils.



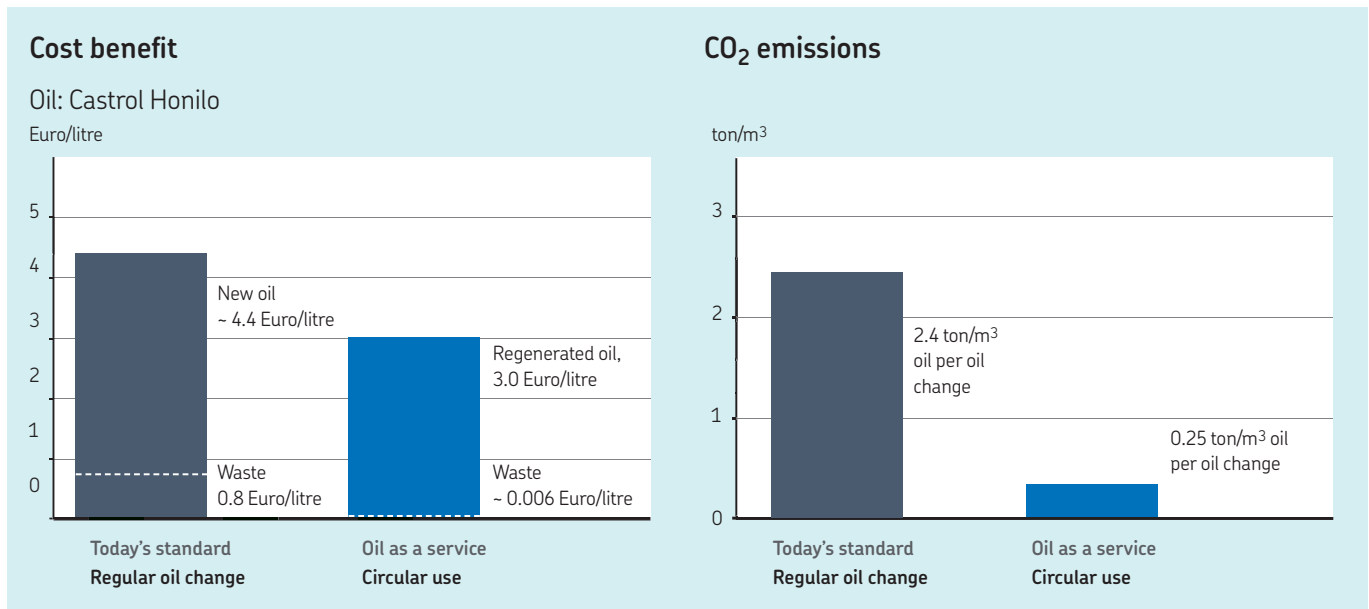
Cleaned oil, dirty oil and dried waste.



## Stand-alone DST system.



## Increased productivity. Reduced cost and CO<sub>2</sub> emissions.



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