

# Reduction of routine flaring at the gas processing plant located at Kollsnes by reinjecting the gas into the process

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## Introduction and background:

The process plant at Kollsnes uses flares for emergencies and routine. Routine flaring is performed during maintenance – amongst other reasons - because the pressure is too low to inject it into the process. Therefore, a way of minimizing flaring is to reinject the gas into the process with the aid of compressors.

Two studies have already been conducted on reinjecting the gas into the process using existing flash gas compressors. The studies were conducted in 1997 and 1999. Based on the financial aspect, it was decided that the studies should not continue to the design phase before eventual stricter regulation or higher emissions fees to air were implemented.

Since 1999 the regulations have become stricter, emissions fees higher, and gas prices have multiplied. A new flash gas compressor has also been installed with larger and unused capacity. The flash gas compressor is referred to as flash gas compressor C.

## Problem description and objective:

This thesis investigates the possibility of reinjecting the gas into the process using flash gas compressor C.

The objective of this thesis is the following. First, propose a design based on recycling time, gas recovery, and minimum modifications to the current system. Second, to create a case study on the proposed design in UniSim Design and evaluate it using dynamic modeling. The design shall be evaluated on recycling time, amount of gas recovered (including emission and cost reduction), and feasibility of the proposed solution. Third, a final design will be presented based on the case study, including a simple control philosophy and safety evaluation.



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