CASE STORY

Compabloc saves 600.000 MWh and 171,000 tonnes of CO_2 in a single year

Liquified Natural Gas (LNG) producer, Qatar

By installing 16 pieces of fully-welded Compabloc 120 units from Alfa Laval, a major Qatari LNG producer was able to recover 600.000 MWh of energy per year, along with €4 million worth of fuel, and 171,000 tons of CO_2.

To produce LNG, hydrogen sulfide (H_2S) must be removed from the natural gas using an absorption and stripping system. Absorption works best at low temperatures, while stripping requires high temperatures and extreme volumes of steam in the reboiler.

When the decision makers for the Qatari plant went searching for a trusted supplier, Alfa Laval was the logic choice.

Improving sustainability and profits

Using Compabloc 120 units as interchangers, the plant now uses the rich solvent stream to cool the lean solvent stream, which both reduces the need for cooling water, and, by pre-heating the rich-solvent stream, simultaneously reduces the amount of steam needed in the reboiler. To put it short, Compabloc can recover more energy at lower cost compared to traditional technologies.

Compared to shell-and-tube heat exchangers, Compabloc can get the job done with lower capital equipment costs and a significantly smaller physical footprint, including a reduced weight that places less stress on the building foundation. As a consequence, the carbon dioxide footprint of the equipment is heavily reduced as less metal is needed. And because Compabloc also works with lower volumes, it requires less solvent.

Compabloc's unique X-plate pattern enhances turbulence and thermal efficiency – enabling it to sustain high levels of energy efficiency and recovery over longer periods of time. And with Alfa Laval's customized Cleaning-In-Place (CIP) system designed for amine applications, they can effectively and quickly return the units to full thermal efficiency.

Results

Energy savings yearly

600.000 MWh

Fuel savings yearly

65,655 tonnes

Fuel cost savings yearly

€4 million, based on the cost of steam
= €4 million per tonne

Yearly reduction in CO_2 emissions

171.000 tonnes

Yearly cost savings for CO_2 emissions

8,5 million, based on cost of CO_2 emission
= €50/ton

www.alfalaval.com/compabloc

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com

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