CASE STUDY

Global Pharmaceutical Company

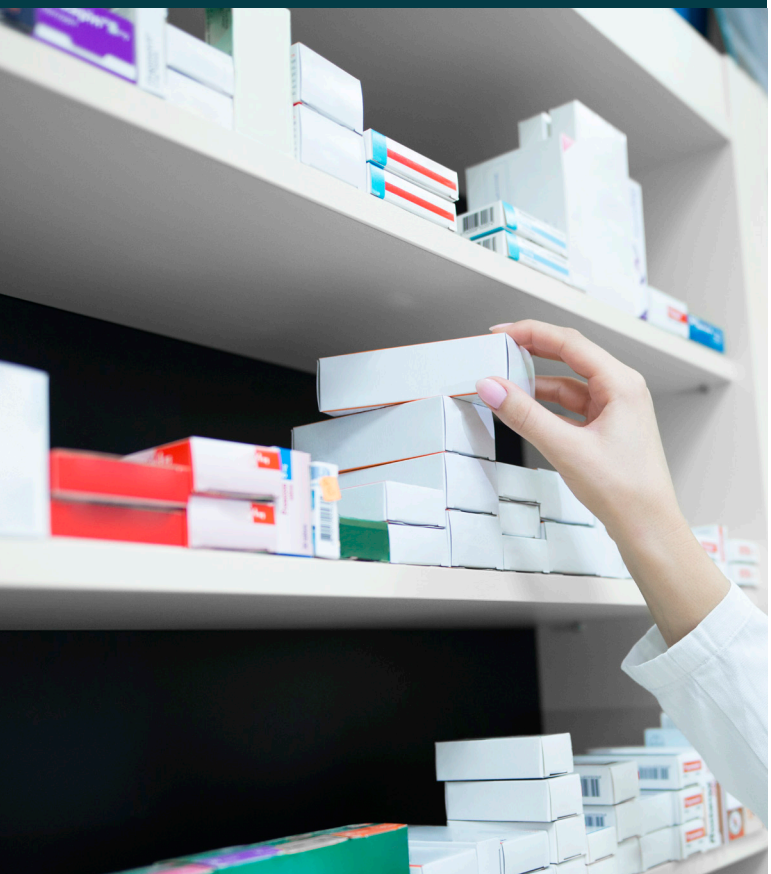
Pharmaceuticals | USA | FLU-ACE®

Overview

The pharmaceutical industry is significantly more emission-intensive than the automotive industry*, with a carbon footprint embedded in every stage of the pharmaceutical supply chain**. This customer invested up to $1.3bn globally to accelerate its carbon mitigation targets across its entire value chain, with a focus on natural resource efficiency and renewable energy.

Impact

- Over $1 million in annual savings
- 1,280 tons of annual CO2 reduction
- 82.7% boiler efficiency
- 90% steam distribution efficiency
- 4.1 years return on investment for a $4m investment prior to funding initiatives



Innovative Solution

This customer consulted with Thermal Energy International to undertake several carbon emission reporting and reduction initiatives, before concluding that the FLU-ACE® direct contact condensing heat recovery system presented the most financially viable solution to attaining their aggressive emission mitigation targets.

The FLU-ACE® system is designed to recover waste heat presently discharged through the boiler stacks, Water for Injection (WFI) Stills blowdowns and vents, and use the recovered energy to preheat the water going to the stills and the boiler makeup water resulting in Natural Gas savings at the boiler plant.

Thermal Energy's proven solutions are a perfect fit for the pharmaceutical sector, due to the prevalence of low-grade heat use, the sector's commitment to GHG reductions, and their financial wherewithal facilitating positive carbon reduction action.

As such, this customer is in further consultation with Thermal Energy to replicate the success across its other sites, with consideration for heating hot water loops and other electrification solutions that are complementary to Thermal Energy's technologies.

This project is key to this customer meeting looming 2030 reduction commitments as economically as possible, and paves the way to ultimately meeting carbon neutrality goals by 2040.

FLU-ACE® HEAT RECOVERY SYSTEM

- The FLU-ACE® is a direct contact condensing heat recovery system that recycles the heat normally lost through the boiler flue gas exhaust
- Implementation of the technology typically reduces energy consumption by 10% to 20%
- Average payback ranges from two to four years

*(Belkhir & Elmegli, 2019)
**(Jimenez, 2022)

Figures shown in CAD

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