



CHEMICAL ENGINEERING OPTIMIZATION PROGRAM

โครงการปรับปรุงการใช้พลังงานภายในบริษัทไทยลู่เบสด้วยการรับลองเรซิดิวอุณหภูมิสูง

BACKGROUND

At present, Thai Lube Base (TLB) is able to obtain try residues (LR) from Thai Oil's CDU-2 (CDU-2) as the main raw material for lube base oil production. Delivered will be cooled down, by exchanging heat with water It is first sent to TLB's LR storage tanks and then sent to a vacuum distillation unit (VDU). This causes unnecessary heat loss. TLB saw an opportunity to use wasted heat energy, by installing an additional heat exchanger To bring the heat of high temperature LR that normally transfers to Cooling water and Tempered water to heat the Asphalt mix at the asphalt extraction unit (PDA) for separating between propane solution and asphalt.

There is also enough residue heat to be transferred to the Dewaxed oil mix at the Paraffin Wax Separation Unit (SDU) to separate the solvent from the base oil. This can reduce heat energy consumption at the heat exchanger of the Asphalt Extraction Unit (200L-E-112) and the heat exchanger of the Paraffin Wax Separator Unit (400L-E-208) that uses hot oil. reduced, resulting in reducing the use of natural gas for combustion at the hot oil furnace (Hotoil Furnace).

At present, Long Residue that the 2nd Crude Distillation Unit produces for TLB is high sulfur LR The crude oil distillation unit 2 has a limitation in the ability to reduce the temperature of the high temperature long residue at the heat exchanger inside the distillation unit (E-1124) before it is sent to TLB's tanks. Sending some of the high sulfur LR as a precursor to the TOP distillation unit, which will affect the production of low sulfur fuel oil (Fuel Oil IMO). This project will solve the problem.

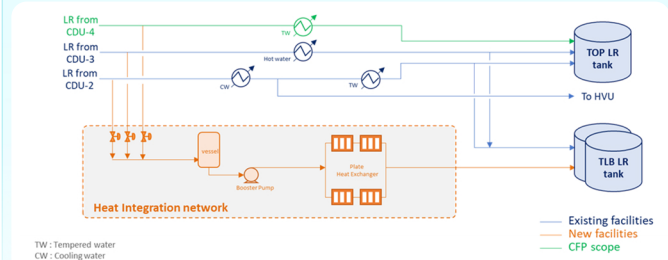
OBJECTIVE

To reduce the use of fuel for combustion and increase the yield from the use of low-cost precursors (long-residues).

PROCESS

- 1 Consider opportunities for incorporating heat from the LR into the TLB to reduce unnecessary heat loss and found to be used in PDA and SDU units to separate solvents from lubricant base oil in the production unit.
- 2 Conduct a feasibility study and preliminary design (Feasibility Study) to assess the initial investment budget along with assessing the benefits received and find cost-effectiveness.
- 3 Study details in engineering (Detail Engineering).
- 4 Prepare the system and proceed with the installation of equipment.
- 5 Measure performance

BENEFIT AND CONCLUSION



This project can reduce unnecessary heat loss. This resulted in a reduction in fuel consumption by 5,626 tons per year and TOP's high-sulfur LR consumption by 450 tons per month. The company also benefited from energy savings and feed efficiency improvements. LR was 338 million baht per year.

Remark : %Participating = 5% (87 Staffs from 1,881 Staffs)

