

Refiner eliminates end point giveaway and increases profits thanks to ExxonMobil's dewaxing technology

Energy lives here™

ExxonMobil drop-in catalyst generates outstanding benefits through jet fuel increase and by enabling production of full-range diesel.

Estimated annual benefits:

\$20 MM/yr+

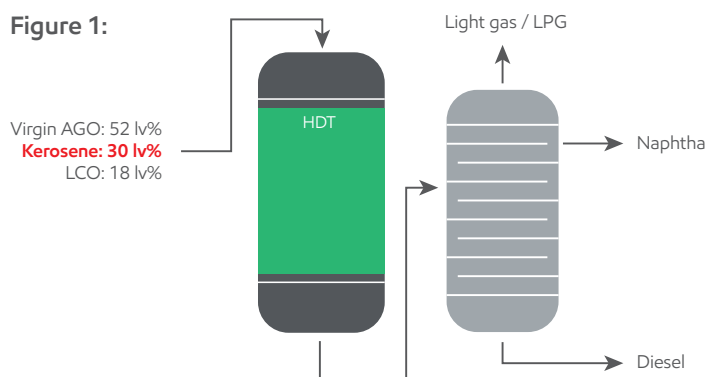
End point giveaway reduction:

Improved feed T90
→ ULSD unit by 63°F

Challenge — Reduce product giveaway in a cold flow property constrained environment

A North American refiner was producing ultra-low-sulphur-diesel (ULSD) in a 800 psig hydrotreater. Meeting pour point and cloud point specifications required the refiner to blend kerosene into the hydrotreater feed, resulting in downgrading jet fuel to diesel and significant giveaway on the product end-point. The refiner's goal was to increase profitability by eliminating this end-point giveaway to meet the hydraulic constraints of the unit. [Figure 1].

Figure 1:



Diesel	Value	Spec
Pour point, °F	-5.3	-5.0
Cloud point, °F	0.0	0.0
D86 T90 % off	577°F	640°F

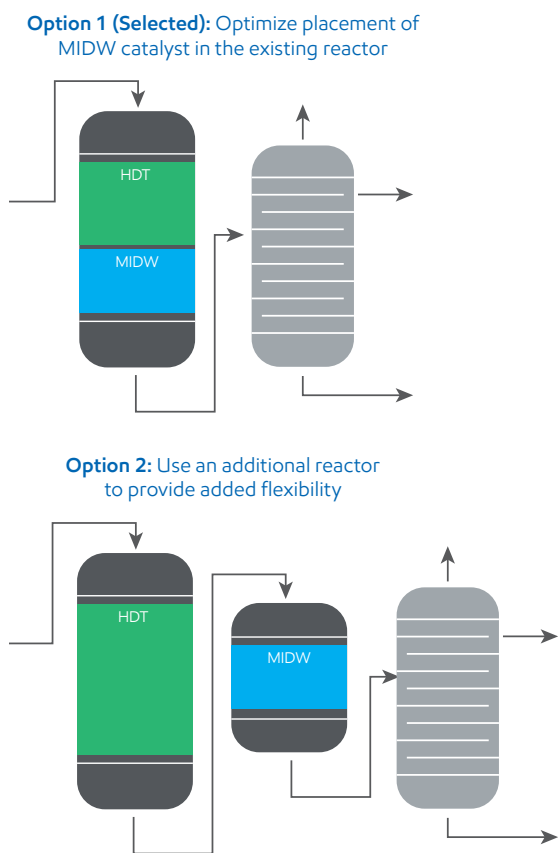
Solution — Introduce MIDW™ proprietary technology and services into the refining process

ExxonMobil applied its technical expertise and owner-operator experience while working closely with the refiner to analyze the situation and identify the best possible solution. Two options were proposed:

1. Optimize placement of MIDW catalyst within the reactor, which enables production of high cetane and low cloud and pour point diesel at higher yields, eliminating the need for kerosene blending to meet cold-flow properties.
2. Use an additional reactor to provide additional flexibility.

After evaluating both options, the refiner chose to optimize placement of MIDW catalyst in the existing reactor. [Option 1 in Figure 2].

Figure 2:



For more information, visit:

www.exxonmobilchemical.com/midw

Result – Improved profitability and elimination of end point giveaway

The implementation of ExxonMobil's robust catalyst solution enabled feed rebalancing, resulting in completely eliminating the end point reduction issue. The lighter kerosene component was routed to a separate, preexisting HDT unit to make Jet, which allowed the AGO endpoint to be increased, thereby netting more higher-value products. Pour point remained at -5.3°F and cloud point remained at 0.0°F (on spec). This led to a jet fuel yield increase and an AGO upgrade to diesel, resulting in estimated annual benefits greater than \$20 million per year. [Figure 3].

Figure 3:

