



UK Refinery Increases Middle Distillate Production with Aspen GDOT™

10% increase in middle distillate production

Aspen GDOT allowed the refinery to implement operational instructions and strategies minute by minute around the clock to drive more profitable operations.

CHALLENGE

The refinery wanted to increase production of more profitable products.

SOLUTION

Aspen GDOT allowed the refinery to coordinate multiple units in closed loop to improve USLD production by 10%.

BENEFITS

With Aspen GDOT, the refinery:

- increased production to earn an additional \$10 million USD per year
- did not require any specialized staff, unit upgrades or equipment revamps
- gave operators a big-picture view of refinery targets and performance with insight into downstream constraints and opportunities to reduce product giveaway.



A 220,000 barrel a day refinery in the UK was looking to increase production of more profitable products—in most cases, ultra low-sulphur diesel (ULSD).

Like many refineries that produce ULSD, the site uses a rundown blending approach rather than a conventional batch blending system. While rundown blending requires less tank storage and manpower, it increased challenges in day-to-day operations for the refinery's two downstream hydro-treating units (HTUs). Maximizing throughput based on a variety of process constraints, including the availability of different feed components, took careful coordination between:

- the planning and scheduling teams
- process engineering staff
- the process control team
- several operations groups.

Reducing Complexity While Increasing Production

Implementing Aspen GDOT allowed the refinery to optimize units in a coordinated way, keeping all units within acceptable operating ranges to ensure diesel production remains on grade with minimum giveaway. Using closed loop optimization technology, GDOT automatically adjusts multiple process units based on changing conditions to maintain product consistency and improve overall refinery performance.

The refinery did not need specialized staff to manage GDOT; process control engineers responsible for the site's multivariable predictive control (MPC) applications could manage the new tool. The refinery was also able to work with its existing equipment and processes, avoiding costly upgrades and revamps. Leveraging existing process models and MPC data to develop the GDOT model ensured minimal impact on refinery operations.

Payback for the project occurred within just a few weeks. The refinery's staff saw the project as a success—especially in addressing changes to product specifications. The ability to adapt to changing operating scenarios, including unforeseen circumstances, has proven valuable.

About Aspen Technology

Aspen Technology (AspenTech) is a leading software supplier for optimizing asset performance. Our products thrive in complex, industrial environments where it is critical to optimize the asset design, operation and maintenance lifecycle. AspenTech uniquely combines decades of process modeling expertise with machine learning. Our purpose-built software platform automates knowledge work and builds sustainable competitive advantage by delivering high returns over the entire asset lifecycle. As a result, companies in capital-intensive industries can maximize uptime and push the limits of performance, running their assets safer, greener, longer and faster.

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