

Keeping carbon capture running at peak performance — with a service partner from day one

A major European fertilizer producer was investing in a large-scale carbon capture and storage project — one where unplanned downtime was simply not an option. Their German-based engineering contractor needed a service partner who could engage early, address reliability concerns before they became failures, and build a maintenance programme around the plant's long-term efficiency targets.

A large-scale CCUS project in the European fertilizer industry

The end customer is a major fertilizer producer in the Netherlands with decades of experience capturing and handling CO₂ as part of its ammonia production process. Decarbonising hard-to-abate industrial production is a strategic priority, and the company has committed to a large-scale CCS investment to permanently reduce its CO₂ emissions. The engineering and construction of the CO₂ liquefaction facility is led by a specialist contractor headquartered in Germany, with deep expertise in industrial gas processing and large-scale plant delivery.

Reliability doubts in a process where failure means plant shutdown

In a CO₂ liquefaction plant, subcooling heat exchangers are critical. If they fail, the plant stops. For a contractor delivering a facility of this scale and strategic importance, that was not an acceptable risk.

The contractor had genuine doubts about long-term plate reliability under these operating conditions. They needed more than a product, but confidence that the equipment would hold up, and a credible plan for what happens when it eventually needs attention.

Early engagement and a maintenance programme built around uptime

Our team engaged with the contractor from the early stages of the project. This allowed both sides to build a shared understanding of what was at stake: continuous operation, energy efficiency targets, and the need for a structured response to future maintenance needs. As confidence in the partnership grew, so did its scope. We have since agreed to carry out a Visual Condition Assessment (VCA) in another part of the facility — a direct result of the trust built through consistent service delivery.

Rather than a one-off supply, we have proposed a regular maintenance programme for the plate heat exchangers. This is still under discussion. Scheduled interventions keep the units performing at their best, catching degradation early and avoiding the unplanned failures that would shut the plant down. The programme is also designed to recover energy efficiency over time — ensuring that no savings that could be made are left on the table.

“Alfa Laval’s team, Capital Sales & Service, worked closely with the customer in the early stages of the projects to understand their operational challenges including uptime, optimization and energy efficiency targets. Thanks to good cooperation and a solid maintenance program we have just agreed to perform a VCA Assessment in another part of the customer’s plant”, says Dadie Makiadi Field Sales Engineer at AL Benelux.



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