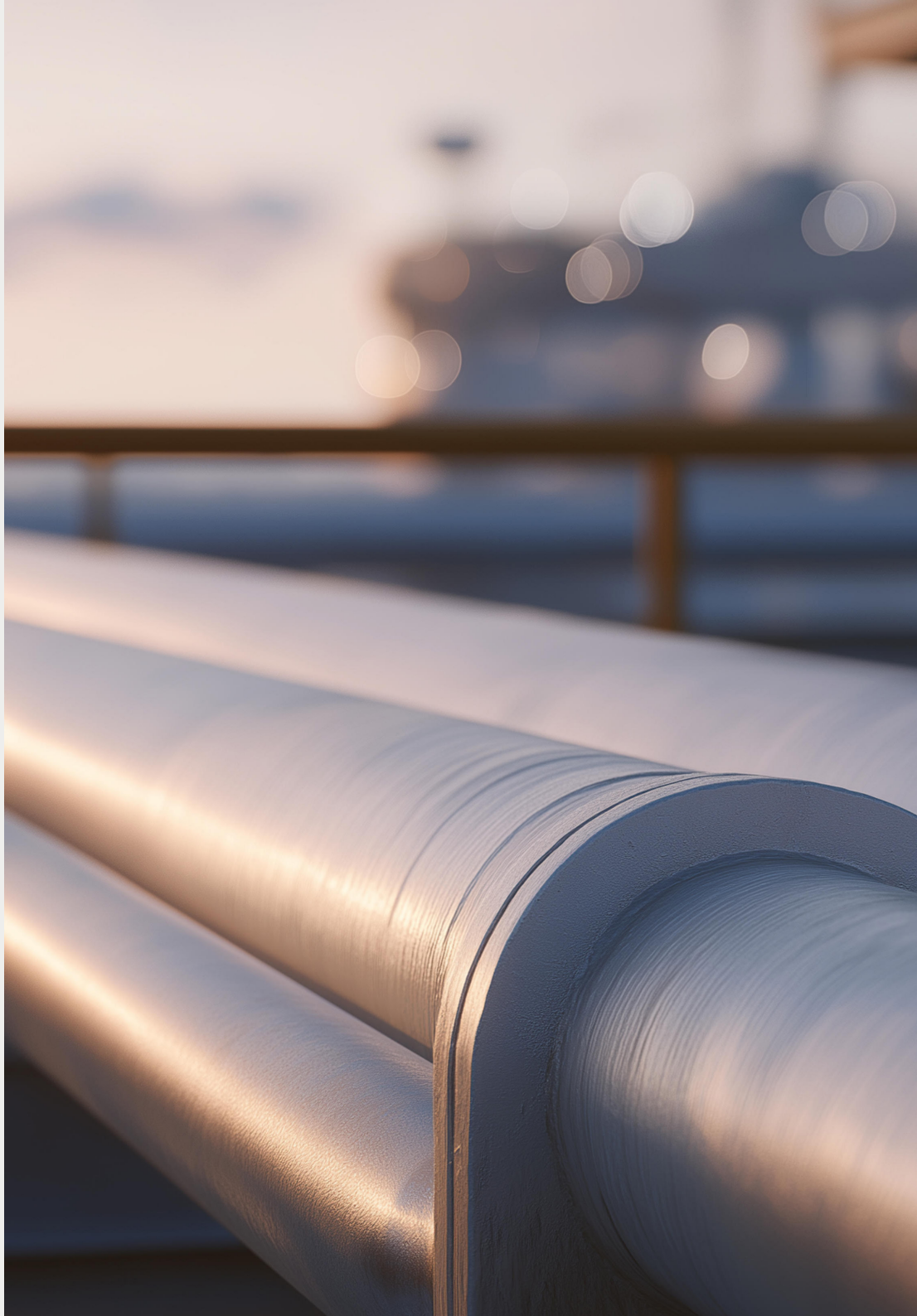
Case story
District energy, Sweden

Transforming heat exchanger maintenance: 33% fewer cleanings and 42 hours of downtime eliminated

A district energy provider in Sweden relied on a fixed maintenance schedule for its gasketed plate heat exchangers for years, without visibility into whether it was still effective. This led to unnecessary cleaning cycles, avoidable downtime, and reduced thermal efficiency.



After installing Alfa Laval Performance Monitoring on six heat exchangers and analyzing one year of operational data, the company implemented a data-driven maintenance strategy. The result: a 33% reduction in cleaning-in-place (CIP) procedures during peak season, saving 42 hours of annual downtime, while also reducing energy use, water consumption, and CO_2 emissions.

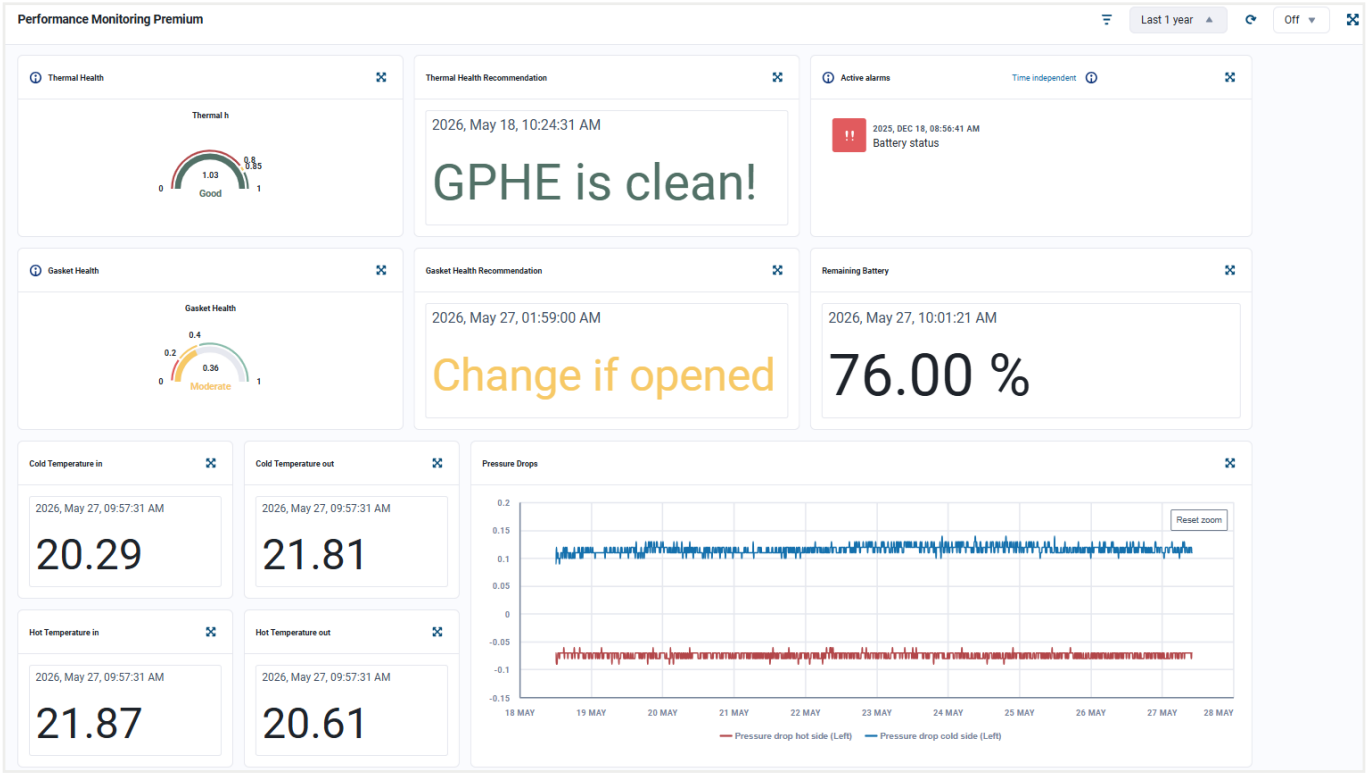
A district energy provider serving the city´s cooling network
The customer is a district energy provider serving the city´s heating and cooling network. Its operations rely on a fleet of gasketed plate heat exchangers to distribute thermal energy across the system.

As a district energy provider, the company's commercial performance is directly linked to the thermal efficiency of its heat exchangers. Any loss in performance directly translates into cooling it cannot sell to its customers.

Years of routine cleaning with no data to back it up
For years, the customer had been running the same cleaning schedule without questioning it. Every peak summer season - June, July, August - they carried out three CIP procedures on each unit, with mechanical cleanings in April and September. It was the routine they had always followed. The problem was that no one knew whether it was the right one.

Fouling reduces heat transfer performance. For a district energy provider, this has direct commercial implications: reduced efficiency means less cooling capacity available for sale. While the team understood this impact, they lacked the data needed to act on it effectively. **In particular, they could not determine whether a unit required cleaning based on its actual condition. Instead, clean-in-place (CIP) procedures were being carried out according to a fixed schedule rather than operational need.**

Sensors and deep-dive analysis replaced guesswork with a data plan
Alfa Laval installed Performance Monitoring sensors on all six units. The sensors collected operational data continuously



* To maintain client confidentiality, we are unable to share actual monitoring data. This screenshot is a demo; the figures and recommendations may vary depending on the heat exchanger's performance.

over a prolonged period, covering the units during peak cooling months. This gave both teams a real-time view of how each unit was performing.

What made this engagement different was what happened alongside the monitoring. Throughout the pilot year, both teams stayed in close contact; not just to refine the algorithms, but to understand what the customer needed from a performance analysis. This distinction mattered.

Once sufficient data had been gathered, Alfa Laval carried out a deep-dive analysis and produced a personalized report tailored to the customer's operational needs. The report assessed the effectiveness of their existing CIP procedures, evaluated whether cleaning was being carried out at the right times, and identified where thermal performance could be improved.

Based on the analysis, Alfa Laval proposed a revised maintenance plan grounded in actual operational data rather than fixed intervals. The plan included specific recommendations on how to carry out more effective CIPs and how to optimize the heat exchangers' use across the site.

The data make it clear: 33% were unnecessary
The analysis confirmed what the team had long suspected but could not previously prove: not all three summer CIPs were necessary. Based on performance data, reducing to two CIPs per peak season across all six units was sufficient.

Beyond the time saving, the team gained something equally valuable: visibility. Maintenance decisions that were previously made by calendar are now made by data. As a result, water consumption, energy use, and CO_2 emissions from unnecessary cleaning cycles were all reduced.

What any district energy operator can learn from this
Most maintenance intervals were set up for a valid reason, but they are rarely revisited. Over time, the original rationale fades while the schedule remains unchanged.

If your team is following the same maintenance routine it always has, the critical question is: do you know whether it still is the right one? Not in principle, but for your specific equipment, under specific operating conditions, this season?

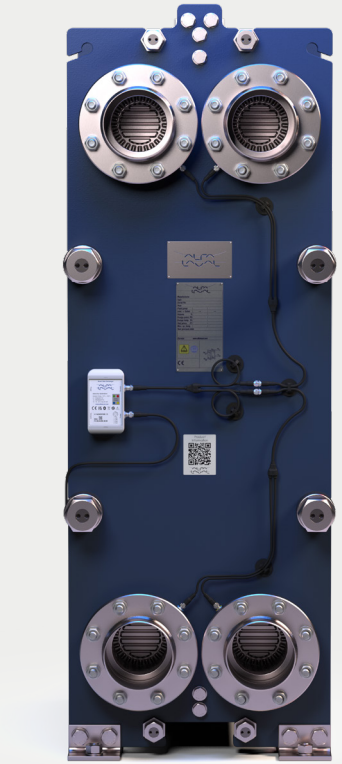
For district energy providers or maintenance managers who carry maintenance assumptions forward year to year, that is the real takeaway: visibility doesn't just improve efficiency. It gives you the confidence to change a habit that has never been questioned, and the evidence to back the decision. Performance Monitoring with data-backed analysis offers a practical path from reactive and routine maintenance to truly optimized operations.

Performance monitoring

Real-time insights. Maximum performance.

- Real-time monitoring
- Smart alarms & notifications
- Historical trends
- Actionable recommendations
- Improved uptime & realibility

Download leaflet: https://assets.alfalaval.com/documents/p2235b071/alfa-laval-performance-monitoring-premium-for-gphes.pdf



Contact Alfa Laval
Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com

100023094-1-EN 2606