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Strategic Cooling System Upgrade & Energy Optimisation

At a Glance

- €150,600 annual energy savings delivered through chilled water system optimisation
- 934 tonnes CO_2 reduction achieved via system upgrades
- 33% reduction in electrical consumption across HVAC cooling systems
- Phased out refrigerant chillers replaced with high-efficiency, compliant units

Strategic Context & Operational Risk

Two secondary manufacturing sites in Ireland were operating high-energy chilled water systems, consuming over 5GWh annually. Ageing infrastructure and the use of refrigerant posed compliance risks and potential production disruption. Projective was engaged to deliver a compliant, efficient and resilient solution.

Operational Challenges:

- High energy overheads and carbon footprint
- Risk exposure from legacy cooling assets
- Fragmented system architecture limiting performance
- Imminent regulatory non-compliance

Engineering Approach & Technical Innovation

Using our Process Energy model, we mapped system dependencies and identified opportunities for consolidation and intelligent control. This enabled a reduction in asset replacement CAPEX and improved system resilience

Key Engineering Interventions:

- Consolidation of DX units into centralised chilled water systems
- Intelligent chiller sequencing and dynamic set-point control
- Constant pressure, variable volume pump configuration
- Enhanced load control across secondary distribution

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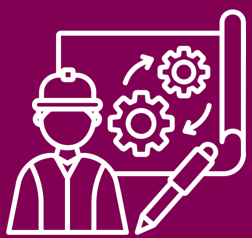
Solution Summary



Smart Engineering

33% energy cut

Proven Sustainability

934t CO_2 saved

Scalable Delivery

2 sites upgraded

Performance Gains & Return on Investment

Projective delivered full design, project management and commissioning of the chilled water system upgrades. The result was a significant reduction in energy use and carbon emissions, alongside improved system resilience.

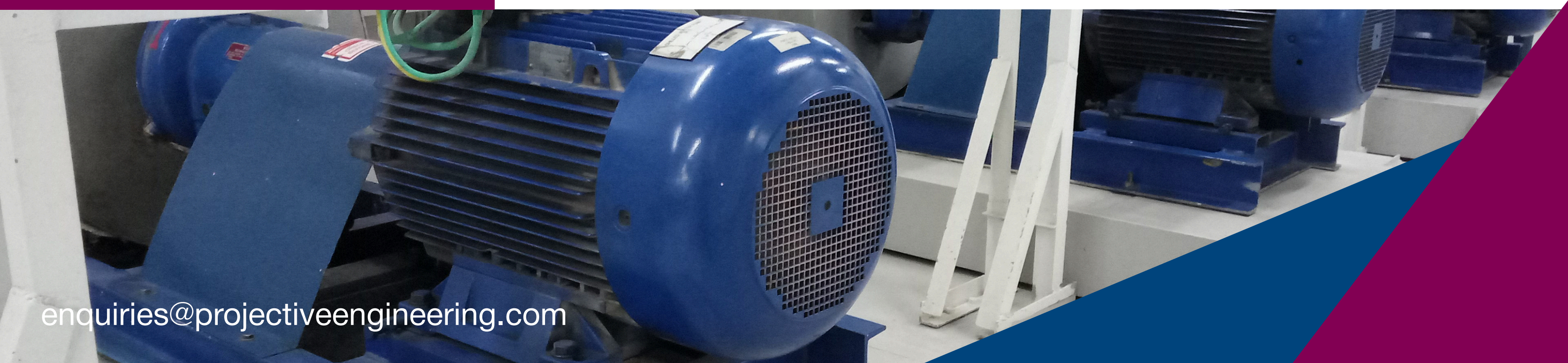
The project achieved an annual energy saving of €150,600, equating to 1,700MWh, enough to power over 400 homes. Electrical consumption across the HVAC infrastructure dropped by 33%, easing pressure on site systems and lowering operational costs.

In parallel, the client achieved a reduction of 934 tonnes of CO_2 emissions annually, supporting their corporate sustainability targets. These outcomes represent a clear return on investment, with rapid payback and long-term operational benefits.

Built for Long-Term Resilience

This project reflects Projective's ability to deliver intelligent, future-ready engineering solutions that align with strategic business goals. Projective's approach combined deep technical insight with agile thinking to help a leading pharmaceutical manufacturer navigate regulatory change and optimise performance.

By consolidating systems and implementing intelligent control, Projective future-proofed operations against environmental and compliance risks. The upgraded infrastructure is now more robust, efficient and aligned with long-term operational strategy.



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