

## Riventa's pump system optimisation reduces Korean tyre manufacturer's energy costs by 13%

In the port city of Yeosu in South Korea, pump optimisation specialists Riventa have created significant savings at a global tyre manufacturer's water pumping plant, including an annual energy reduction of 13%.

For a pressurised system that circulates cooling water for synthetic rubber processing, Riventa utilised its FREEFLOW technology and Green Pump Index (GPX) benchmarking system to simultaneously monitor five pumps. For 150 hours, system pressure was measured, together with flow rate and head combinations to pinpoint how effectively the pumps could meet the varying demands of the system.

Included in the tyre manufacturer's objectives was the need to address pressure objectives for the system, which were operating at 4.5 kg/cm<sup>2</sup>, compared to the contractual minimum supply pressure of 3.8 kg/cm<sup>2</sup>. Although the five pumps had the same casing (in fact, two of the impellers were

significantly different) Riventa found that by trimming the diameter of three pumps by 3.5%, an 11% reduction in pressure would be achieved.

By fully understanding the operation of the system and how the pumps interacted with it, Riventa were also able to calculate optimum performance and make potential GPX Recommendations.

At the start of the project, the GPX index (which indicates the amount of power as a percentage that is successfully converted into useful work by the drive, motor, pump and system) was 54 – but after Riventa’s modifications, had improved to a GPX index of 64. So, for example, of the 100% of electrical power consumed by the motor, just 54% of that power was being successfully converted into net hydraulic output power.

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