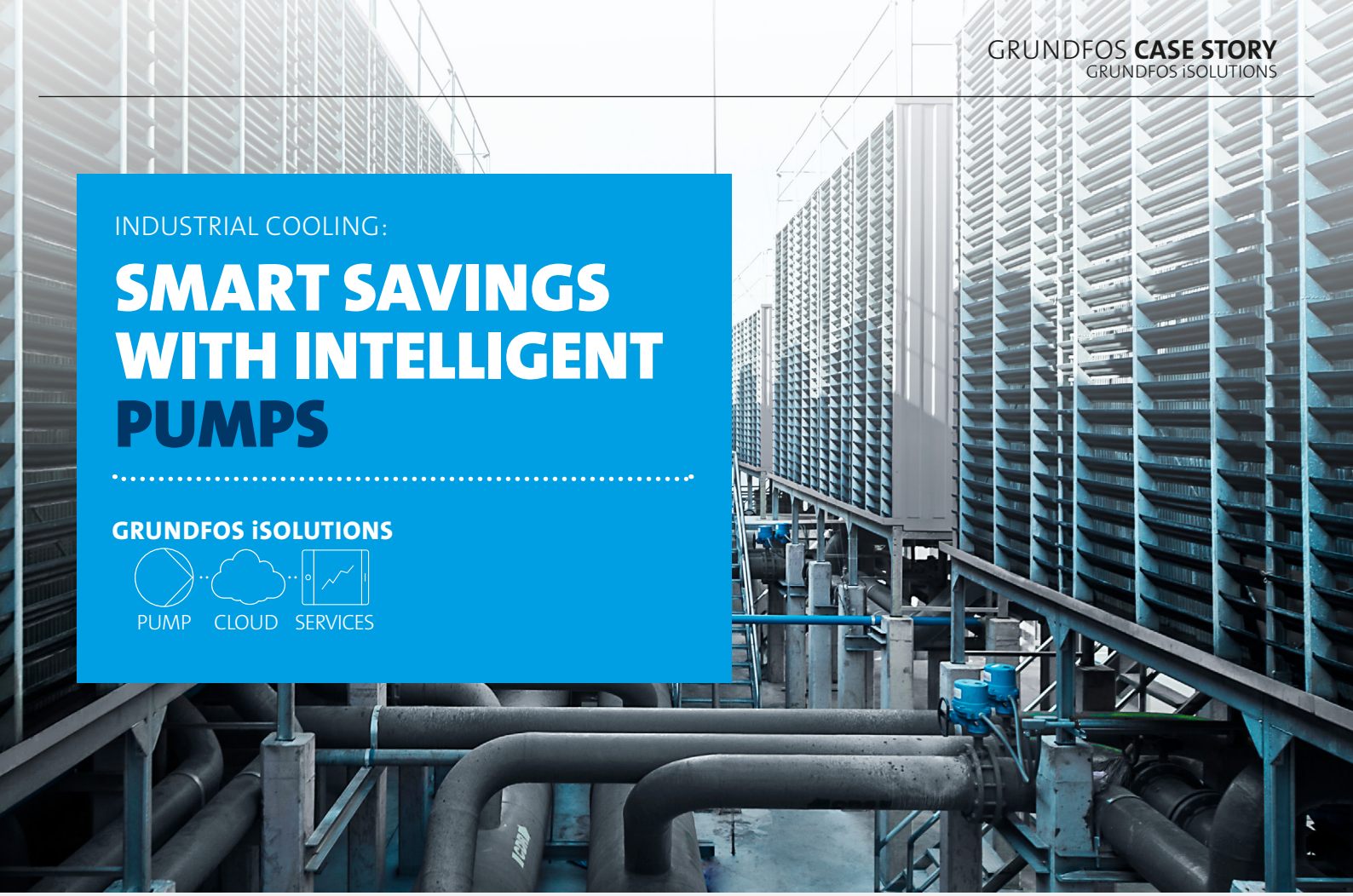


INDUSTRIAL COOLING:

SMART SAVINGS WITH INTELLIGENT PUMPS

GRUNDFOS iSOLUTIONS

PUMP CLOUD SERVICES

THE SITUATION

The Indian auto ancillary industry has over the years become a significant player in the manufacturing industry. Like all other industries, the auto ancillary industry in the country is also looking at leveraging the benefits of Industry 4.0. One of Industry 4.0 key focus areas is managing energy efficiently and this can be achieved only through the adoption intelligent solutions.

Grundfos combines customer demands, application expertise and intelligent pump design for the optimal performance and equipment choice. We have executed numerous projects for energy optimization in various industries successfully as well. One such tyre manufacturing OEM faced a challenge with its existing pump efficiency operating at one of its cooling towers.

THE PROCESS

Industrial processes and machines generate large amounts of heat while they function. It is necessary to control this temperature for efficient operation and it is controlled through a cooling tower. Water is added to the cooling tower basin to compensate for the water losses in the circuit. Thus, pumping and recirculation of water in and out of the cooling tower plays a major role.

EASY **OPERATION**

FULL **CONTROL**

MAXIMISED **RELIABILITY**

THE SOLUTION

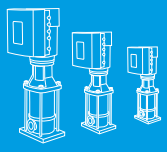
Grundfos conducted a pump energy audit which fully diagnosed the existing pumping system at the OEM's facility. The energy audit at the cooling tower reviewed 45 usage points and 22 air washers. While monitoring the flow, pressure, power consumption and the duty point of the pump during full load operation, it was identified that there was a drop in the efficiency to 38% and the energy absorbed per pump was 10.5kW per hour.

After computing and analysing the old pumping system, Grundfos replaced the old pumps at the OEM's facility with three of Grundfos' CRE 32-3 pump models with IE5 11kW motor. These CRE pumps are a vital part of Grundfos iSOLUTIONS portfolio offering the highest level of efficiency with in-built intelligence. Post retrofit, Grundfos iSOLUTIONS have improved the overall Power Drive System (PDS) efficiency upto almost 8% over the traditional solution (pump + IE 3 motor + external VFD) currently available in the industry. Through this integration, the customer was able to get an increased level of energy savings upto 7% over the traditional one.

BENEFITS OF GRUNDFOS iSOLUTION PUMPS

EASY OPERATION

Grundfos pumps in combination with our intelligent built-in controls have significantly improved the existing cooling tower's pump system - moving from unbalanced to reliable and optimal.



FULL CONTROL

With Grundfos iSolutions, the new system adapts the speed according to the return temperature measured by the sensor. The complete system has a variable flow, which enables maximum savings and improved uptime.

MAXIMISED RELIABILITY

Applying pump audits and continuous improvement techniques, Grundfos revised the system design to raise the quality of the final package well beyond the originally specified requirements.

THE OUTCOME

The Grundfos iSolutions enabled the client to improve their energy consumption by 30%. This in turn helped the OEM align to Industry 4.0 to build and implement a strong strategy in energy management process and reduce 10.8 MT of CO2 emission equivalent savings a year.

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