



THERE'S ALREADY A WAY

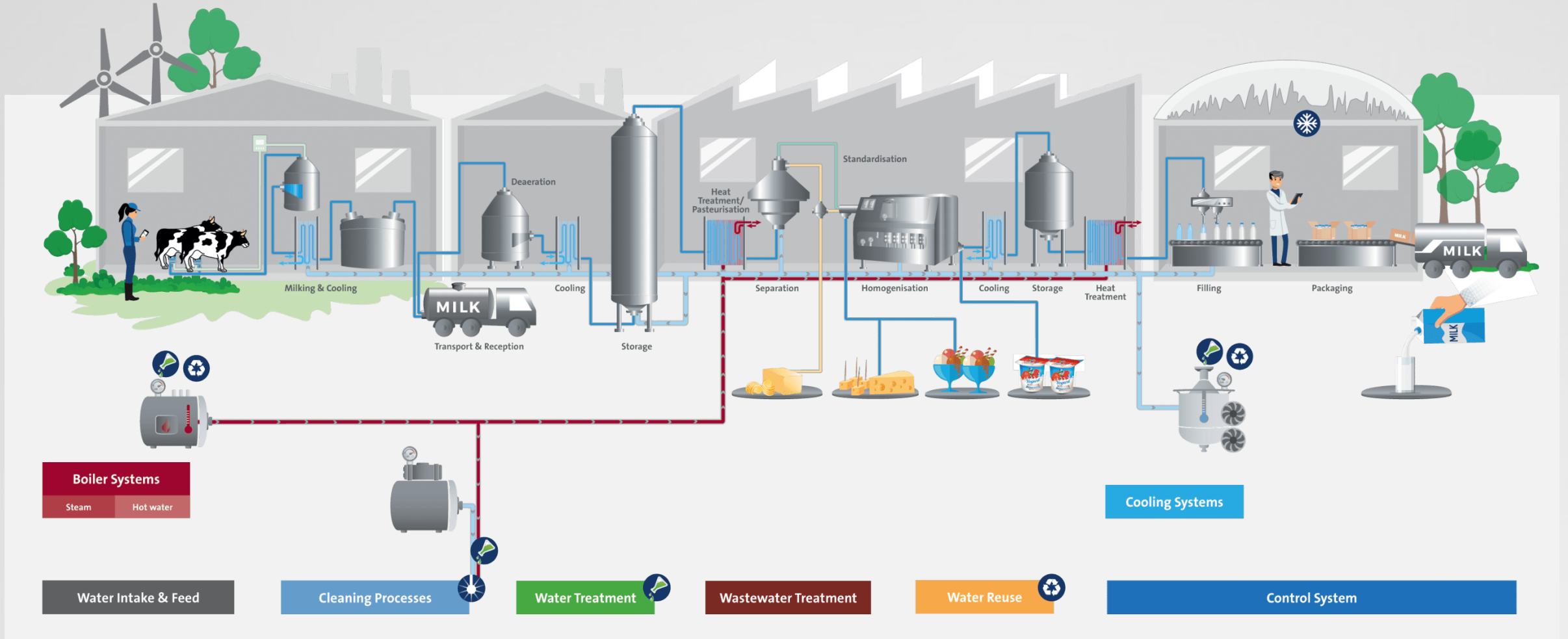
TO MAKE YOUR DAIRY MORE SUSTAINABLE

AGENDA

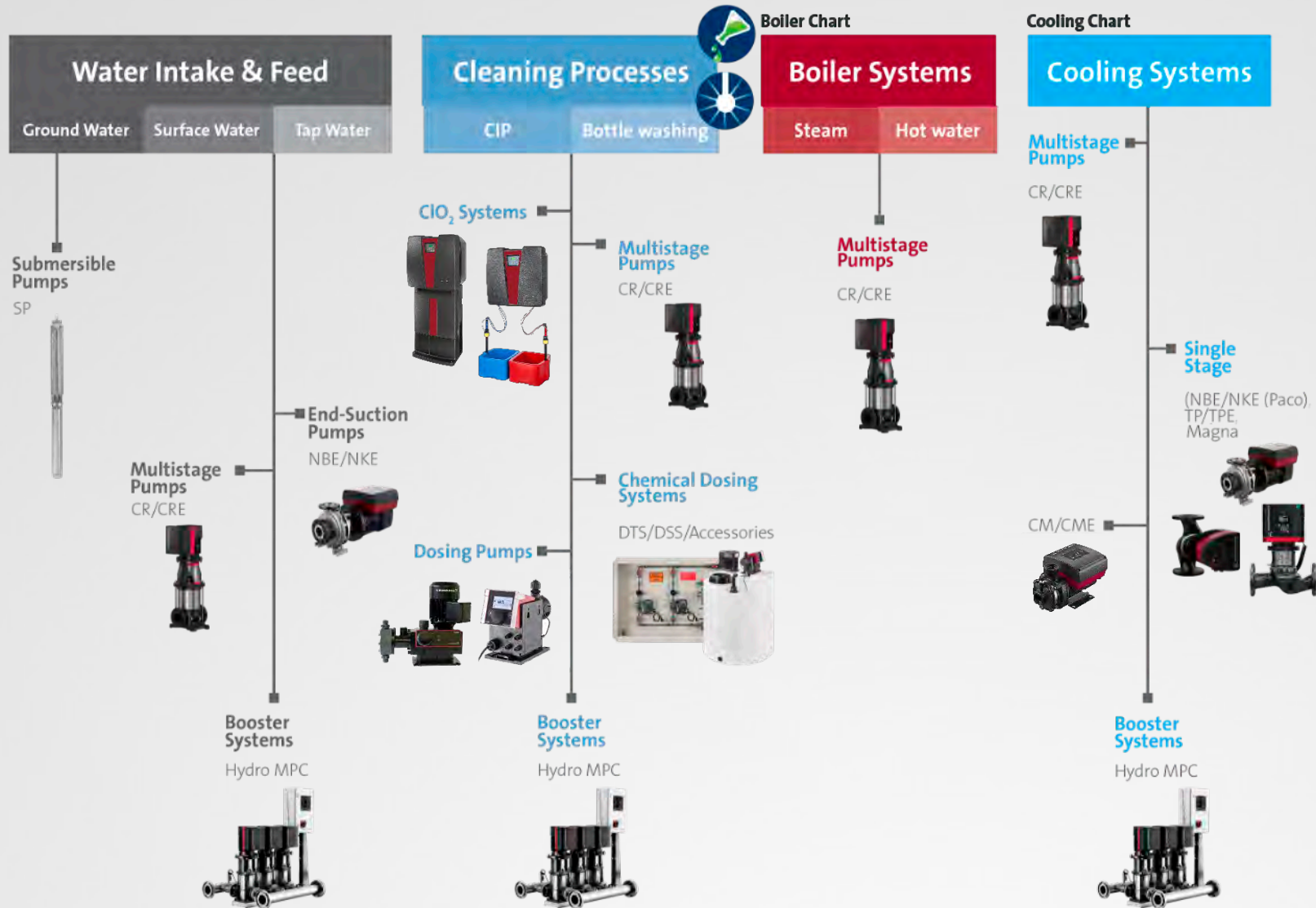
- 1 Optimization possibilities in Dairies
- 2 How to optimize in relation to ice water, cooling, hot water, boilers and water treatment
- 3 Some solid learnings and cases



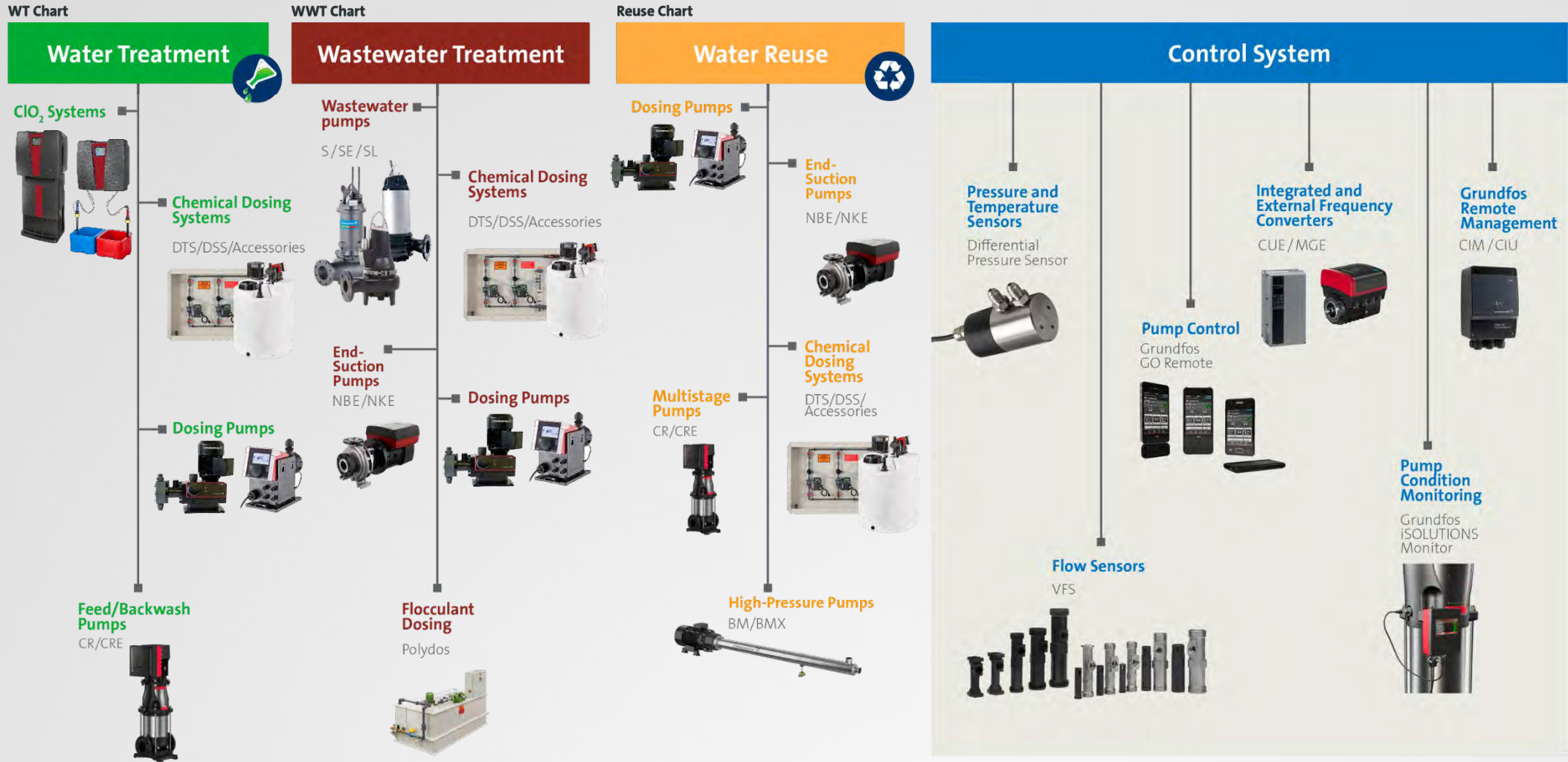
Solutions for all secondary processes at the dairy



Solutions for dairy applications



Solutions for dairy applications



 Disclaimer: We do not supply pumps with hygienic design!

Grundfos iSOLUTIONS brings a new level of intelligence by optimising complete systems



PUMP

Product approach



E-SOLUTIONS

Extended product approach



SYSTEM APPROACH

Integrated components

GRUNDFOS iSOLUTIONS



WATER & ENERGY SAVINGS

See what connected pumps and systems can do with your data



Where energy can be saved ?

Pump components

- Motor 2 - 10%
- Pump + motor 30 – 50%

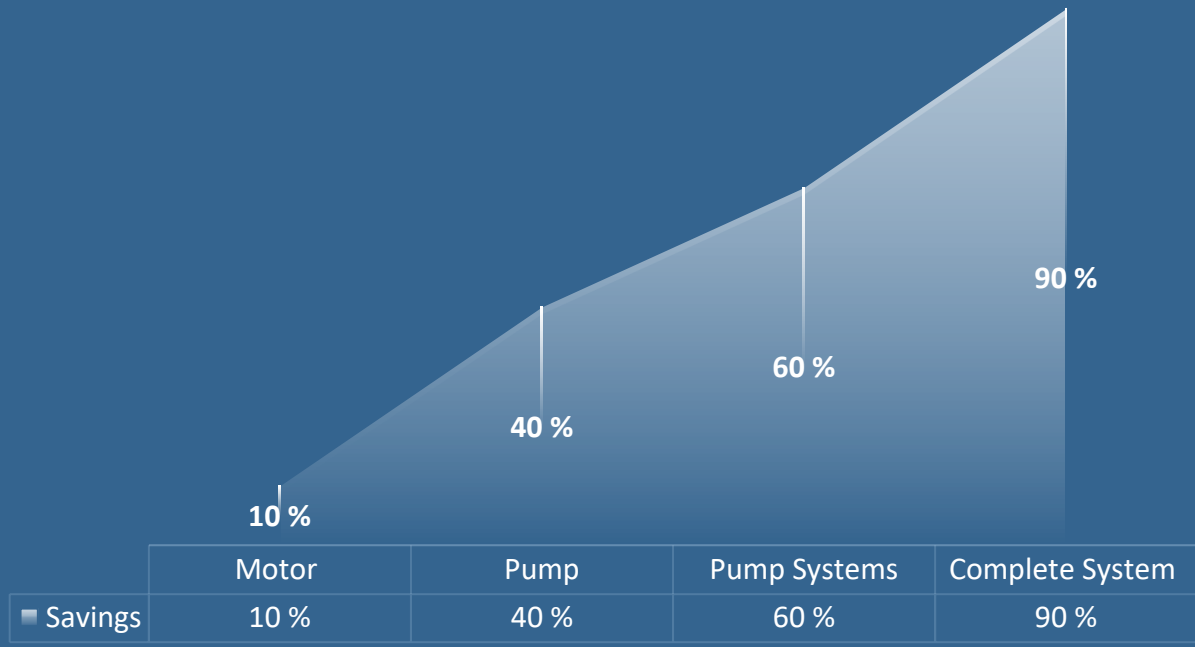
Water distribution systems up to 60%

- Sensors
- Controller
- Valves
- Operating process
- Load profile

Application specific systems up to 90%

- Sensors,
- Controller
- Valves
- Hydraulic system, system balancing
- Operating process
- Temperatures (flow- return pipe)
- Load profile

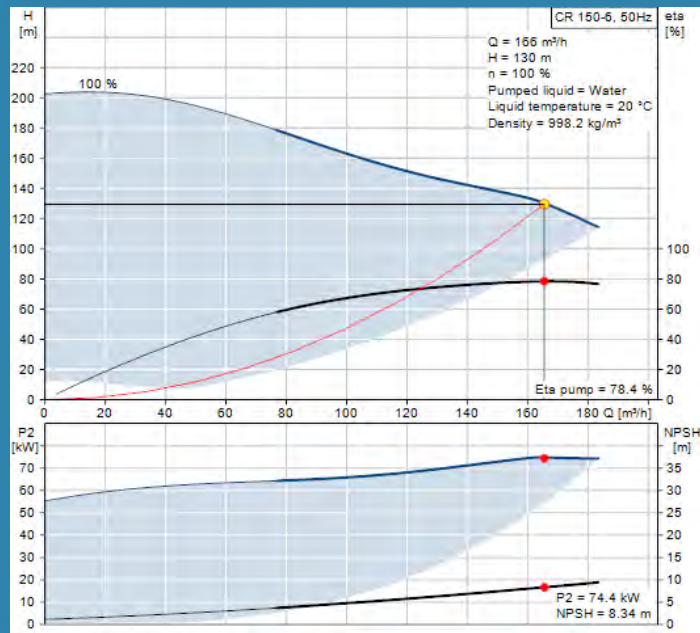
POSSIBLE SAVING POTENTIAL



How energy can be saved ?

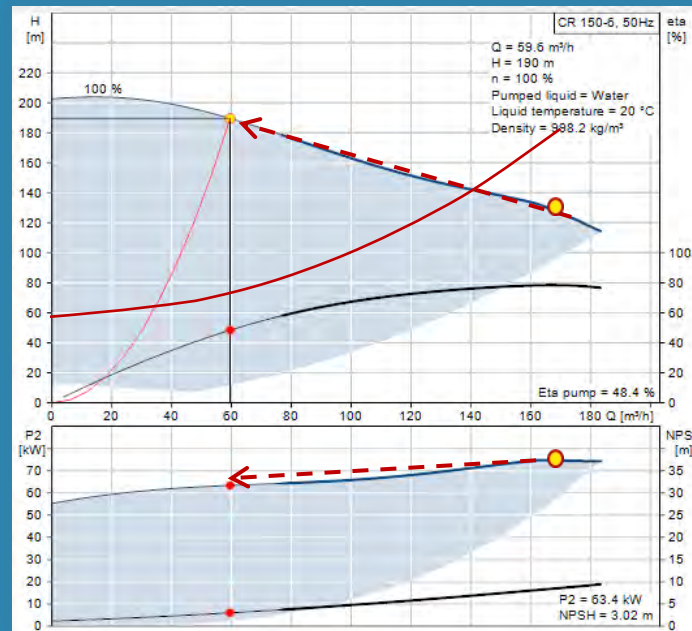
Fix Speed pump

- 100% Flow
- 100% Speed
- 100% Energy consumption



Fix Speed pump

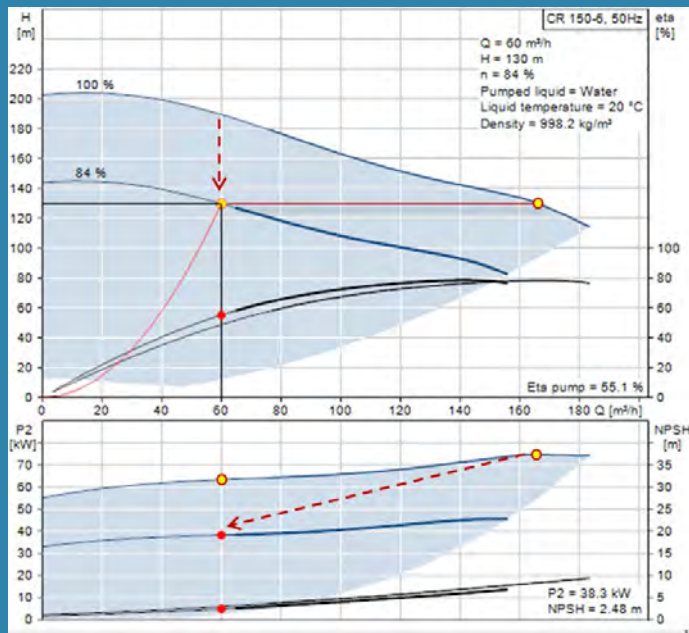
- 40% Flow
- 100% Speed
- 85% Energy consumption



How energy can be saved ?

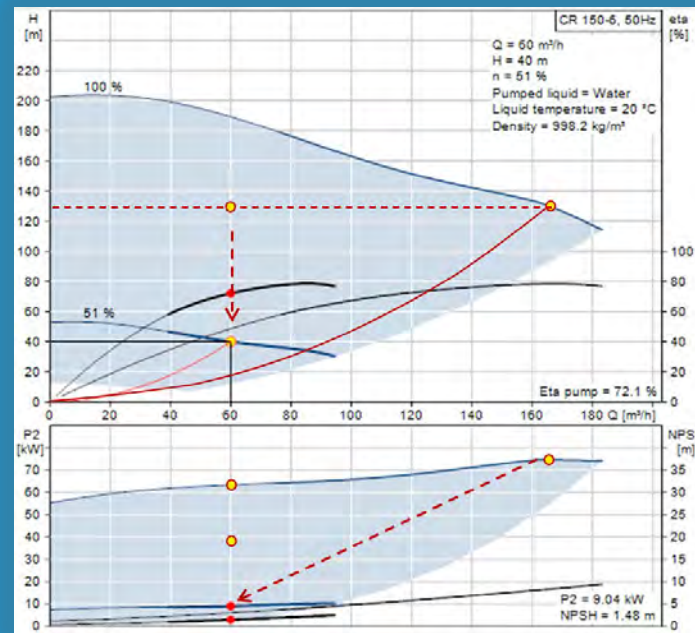
Speed controlled pump

- *Pressure Control*
- *40% Flow*
- *84% Speed*
- *48% Energy consumption*



Speed controlled pump

- *Proportional control*
- *40% Flow*
- *53% Speed*
- *15% Energy consumption*



A photograph of an industrial boiler room. In the foreground, four Grundfos pumps are visible, arranged in two pairs. Each pump has a black control box with a small screen and a fan. The pumps are connected to a network of pipes and valves. In the background, a large, cylindrical boiler is visible, with various pipes and electrical conduits attached to it. The lighting is bright, highlighting the metallic surfaces of the equipment.

INDUSTRIAL BOILER CASE: LEVEL CONTROL REDEFINED

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FOR YOU

Industrial manufacturer

SITUATION

Pharmaceutical manufacturer providing solutions with the shared goal of improving patients' lives and steam is a key element in achieving this goal. Reliability and control is critical in the process.

Old system:

- **Existing pumps details:** 2x Vertical multistage
- **Existing control mode:** Duty/Standby fixed speed
- **Existing operation mode:** Level control delivered via external modulating valve

THE SOLUTION

- Grundfos was chosen to supply intelligent pumps and controls in a retrofitting project that resulted in 38% savings of electrical cost.

New system:

- **New system details:** Grundfos CRE
- **New control mode:** Direct level control
- **New operation mode:** Pumps will adjust their speed depending on steam demand and thus maintain a defined level in the boiler





INDUSTRIAL DAIRY CUSTOMER CASE:
**CONSTANT PRESSURE
WITH LESS ENERGY**



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iSOLUTIONS | FOR YOU

Chilled Water Delivery System in Milk Powder Manufacturing

SITUATION

A leading dairy manufacturer plant contacted Grundfos regarding their main Chilled Water delivery system. Pumps had often failures reported, high noise, leaks and vibration issues. Pumps are part of a critical system, so in depth investigation using the pump audit and Panoramic sensors was required.

Old system:

- **Existing pumps details:** 3x 55kW End suction pumps
- **Existing control mode:** fixed speed on/off
- **Existing operation mode:** on/off on demand

THE SOLUTION

- Grundfos was chosen to supply intelligent pumps and controls in a retrofitting project that resulted in operational costs reduced

New system:

- **New system details:**
3x Grundfos 30kW NB pumps + CUE drives + RPI+T sensors
- **New control mode:**
Pressure control
- **New operation mode:** Pumps will adjust their speed depending on of the particular chilled water demand.





INDUSTRIAL DAIRY CUSTOMER CASE: ICE WATER PUMPS OPTIMISED

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Industrial Dairy Customer Case Ice Water Pumps

SITUATION

A leading dairy manufacturer plant contacted Grundfos regarding their main ICE Water system based on a successful presentation of Chilled Water Pumps Upgrade.

Old system:

- **Existing pumps details:** 3x 22kW end-suction pumps, EFF2 motors
- **Existing control mode:** Duty/Standby fixed speed
- **Existing operation mode:** No control, fixed speed

THE SOLUTION

- Grundfos was chosen to supply intelligent pumps and controls in a retrofitting project that resulted in huge operational savings of £24,254 a year with 1.7 year ROI.

New system:

- **New system details:**
3x Grundfos TPE pumps + MPC-E Controller
- **New control mode:**
Temperature control
- **New operation mode:** Pumps will adjust their speed depending on how much flow is needed to guarantee a constant and stable cooling loop temperature



Grundfos value: Avoid unnecessary costs, optimise processes and improve your environmental footprint



... LOWER YOUR TOTAL COST OF OWNERSHIP

- ✓ Increase energy efficiency
- ✓ Decrease maintenance costs
- ✓ Increase product lifetime



... IMPROVE YOUR PROCESS EFFICIENCY

- ✓ Improve uptime in production processes
- ✓ Standardise across application areas



... REDUCE YOUR ENVIRONMENTAL FOOTPRINT

- ✓ Lower water use across production
- ✓ Improve wastewater handling
- ✓ Improve process water handling



THANK YOU!

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THANK YOU!

Any Questions?

For more information visit our page:

[Grundfos Food & Beverage](#)

