



Energy and media analysis

Krones Lifecycle Service



The plans work out



Krones offers you the opportunity to document the current energy and media consumption of your lines and thus determine any possible potential savings for your entire plant. The scope of this consultation extends from a single machine to the entire site, as required. We not only precisely check Krones lines, but also all third-party machines and the building technology.

At a glance

- Creation of individual energy concepts (for energy, refrigeration, compressed air and heat)
- Discovery of possible potential savings
- Not only for Krones lines but also for third-party machines and building technology



Saving energy – more important today than ever!

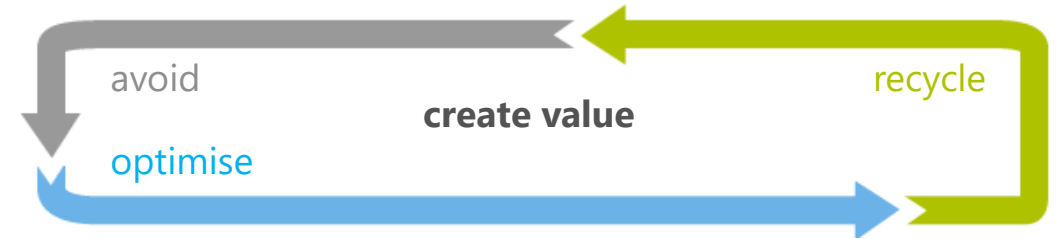


Consumers are becoming more and more aware of the idea of sustainability. As a result, issues regarding the consumption of resources and energy efficiency are becoming increasingly more important – regardless of whether it has to do with CO₂ emissions, primary energy consumption or even the carbon footprint of individual products and the entire company.

Krones supports you with: energy and media analyses, individual energy concepts and the implementation of pertinent measures. This pays off in multiple ways:

- Thanks to direct energy savings and a variety of available developing funds, energy consultations are usually cost-neutral.
- Particularly energy-intensive companies are partly exempt from the EEG levy* and can also be relieved from the electricity and energy tax in the future - by certification according to DIN EN ISO 50001*.
- Energy savings have a direct and positive effect on the net profit.

* Depending on the region



Our services



- First workshop on site to determine the precise need for analysis
- Carrying out an actual recording in order to measure the energy and media consumption of the machines (also external machines)
- Detailed data analysis and presentation of potential savings
- Creation of individual energy, refrigeration, compressed air and heat concept
- Assistance in implementing the concepts



Profit from our expertise



Krones has its own BAFA accredited* energy consultants and energy management representatives who are certified according to DIN ISO 50001.

Thanks to our competent consultation services, you will:

- discover undetected leakages.
- profit from government-supported programmes.
- receive your individual energy concept.

Thanks to the recommended energy concepts, you will:

- save money.
- reduce your CO₂ emissions.

*BAFA = Federal Office for Economic Affairs and Export Control



EquiTherm Freeze heating concept

Use of evaporative cooling

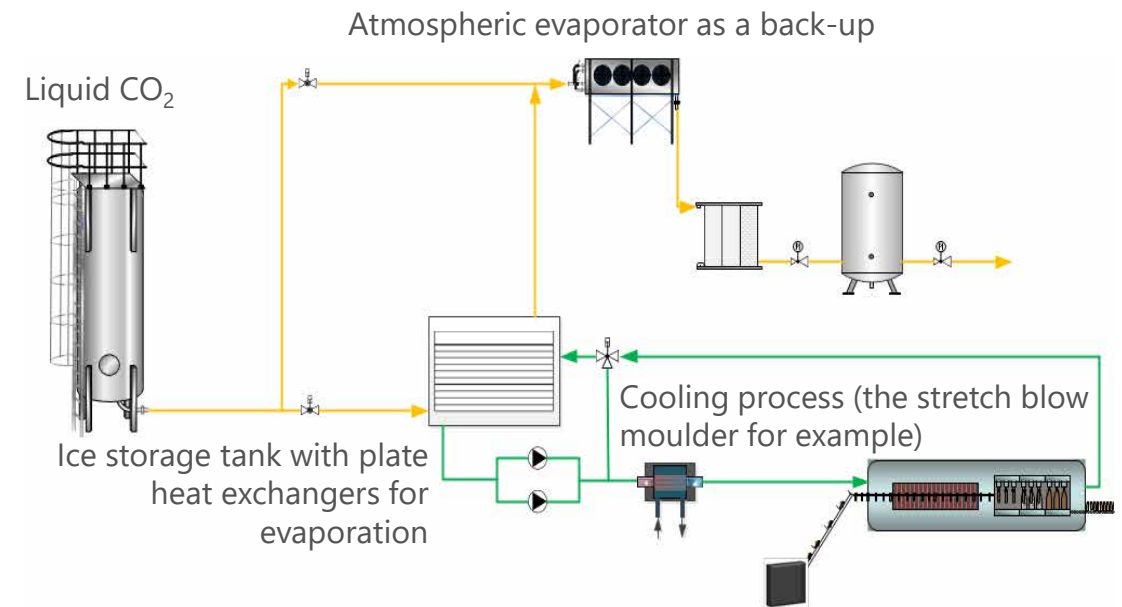


CO₂ is used during the manufacture of carbonated soft drink products or beer in a range of processes.

CO₂ is required in the filler, for the can seamer (head space flushing), at the mixer (product and tank) and in many other areas.

The CO₂ is supplied in liquid form and used for cooling down the cooling water where it evaporates.

The Krones EquiTherm Freeze solution makes it possible to save cooling capacity released during the evaporation and then provide it to a range of processes requiring cooling (mixer, blow moulder etc.).



EquiTherm Freeze heating concept

Application example



Initial situation

Customer: carbonated soft drink system
Scope: Three Kronos carbonated soft drink lines
Task: energy reduction in the refrigeration system

CO₂ requirement: 180 tons per week
Cooling requirement: 31,315 kWh per week
Cooling capacity saved by the EquiTherm: 48 %*

Investment: € 100,000
(One-time investment)

Saving: € 59,000 per year*
(Annual savings)

Media savings
Electrical energy:
658,000 kWh per year*

ROI = 1.7 years*

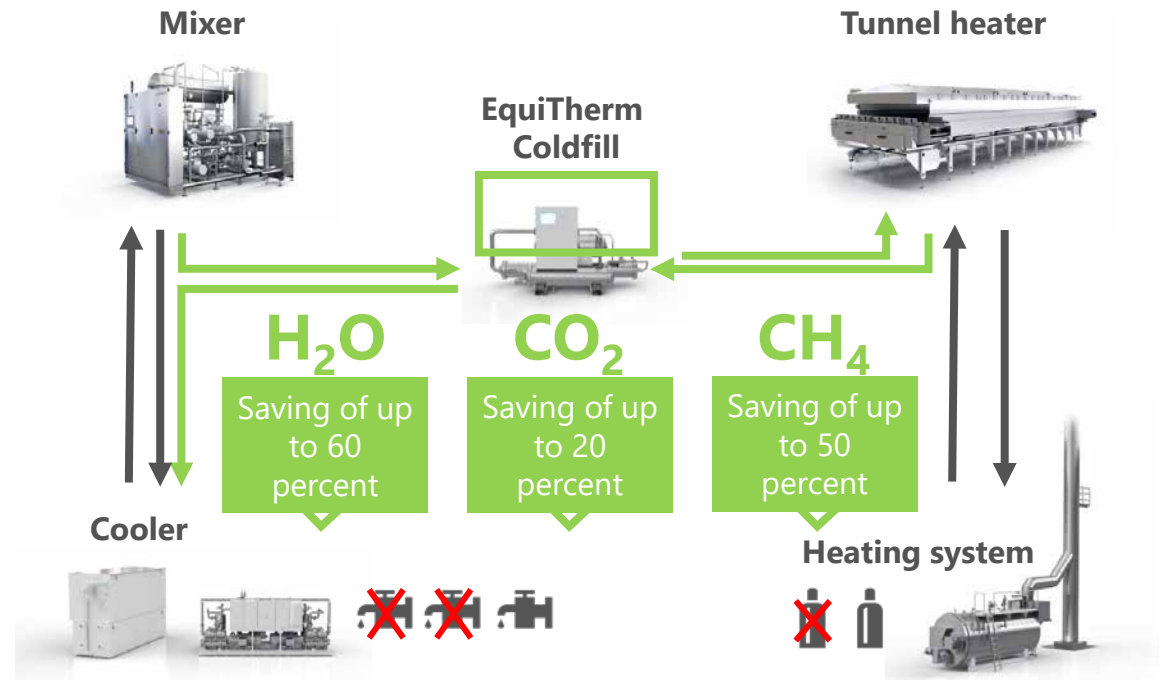
* Customised calculation

EquiTherm Coldfill heating concept

Use of heat pump technology

Condensation water has an impact on the labelling result. This is why the soft drinks are often guided through the warmer after cold filling. This is an enormous work relief for the labeller – however, the change in temperature requires quite a bit of energy.

The EquiTherm Coldfill makes it possible for this energy to be supplied inexpensively: The system repeatedly sends the thermal energy back and forth between the two process steps.



EquiTherm Coldfill heating concept

Application example



Initial situation

Customer: carbonated soft drink system
Scope: a Kronos CSD line (2-litre PET container)
Task: to save primary energy for steam/heat

Water requirement: 1.5 MW steam
Cooling requirement: 1.6 MW cold water
Steam saved by heat pump: 67 percent*
Cold-water saving through heat pump: 47 percent*

Investment: € 500,000
(One-time investment)

Saving: € 310,000 per year*
(Annual savings)

Saving of media: Gas (CNG) savings:
924,000 m³ per year*
Water savings: 21,000 m³ per year*

ROI = 1.6 years*

* Customised calculation

Heat recovery from air compressors

Application example



Initial situation

Customer: carbonated soft drink system

Scope: Four high-pressure compressors

Task: heat recovery for various processes/heat store

Heat discharged from compressors: 400 kW*

Steam pressure reduction: 75 percent*

Increased steam boiler efficiency

Covered room heating: 65 percent of the system*



90 percent

... of the electrical energy used for air compression is lost due to thermodynamic laws.

Through the inclusion of high-pressure air

... the total quantity of available heat can be raised (25 - 40 bar).

65 percent

... of electrical energy losses can be recovered through a water cooling system with a temperature of 75 - 90 °C.

The recovered heat

... can be used for low-temperature processes, e.g. for dissolving sugar or room heating.

* Customised calculation

Benefits to you

- Sustainable and efficient production
- Individual concept based on your requirements
- Tax relief according to the DIN EN ISO 50001 certification
- Competitive advantage through modernisation
- Increasing the net profit through savings

Everything from a single source

On your journey to achieving a more sustainable production, Krones supports you with: energy and media analyses, individual energy concepts and the implementation of pertinent measures.



**SOLUTIONS
BEYOND
TOMORROW**

