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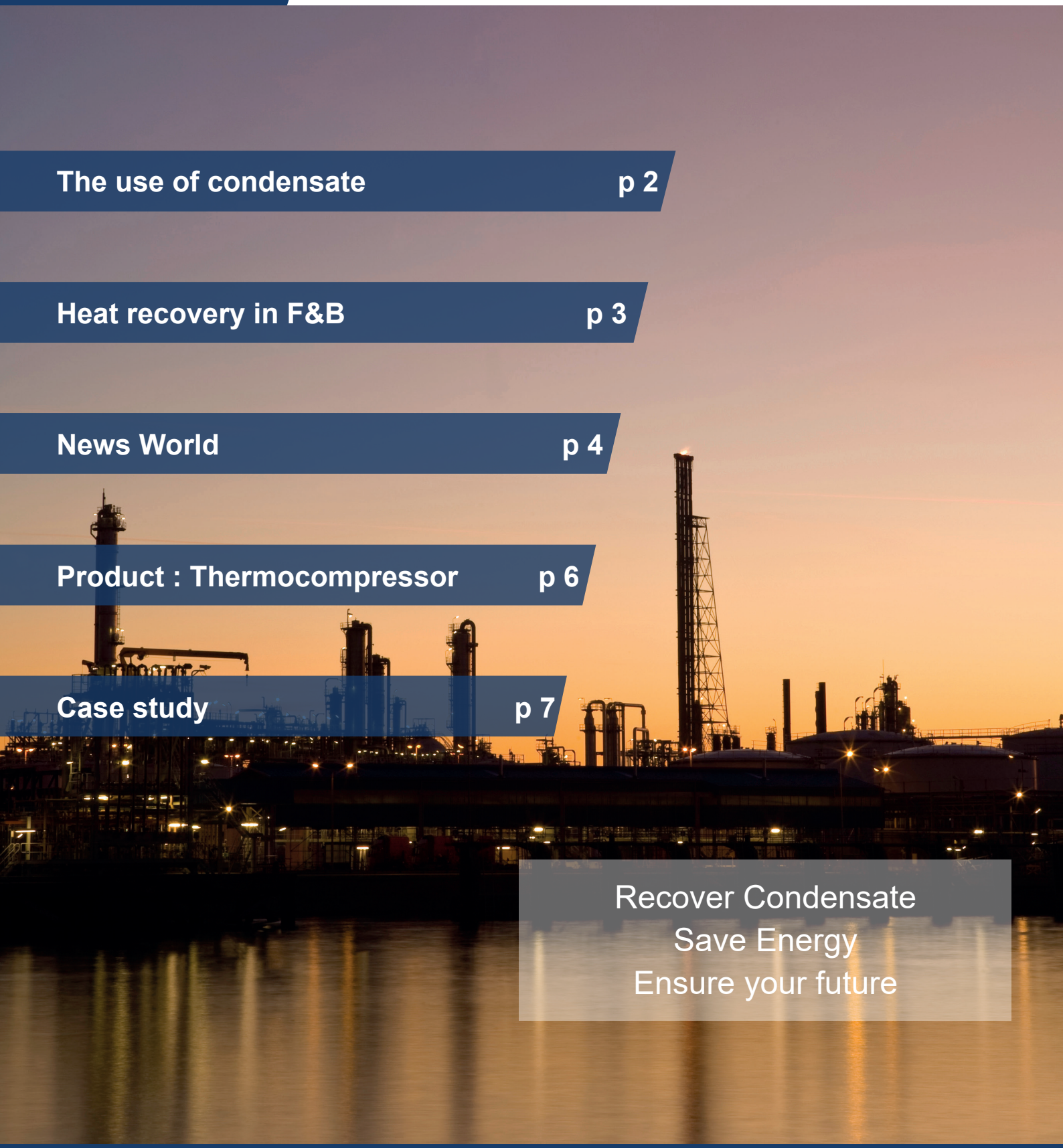
BLUE STEAM

Your regional magazine



Recover Condensate
Save Energy
Ensure your future

spirax sarco

Are you disposing of your system's most valuable resource ?

It's no longer enough to strike a good deal on energy supplies or achieve high levels of productivity : now we are expected to do both, while complying with a complex web of regulation. Striking the right balance can make that crucial, tangible contribution to your company's revenue flow but, with ageing equipment and economic uncertainty coming into play, the potential to achieve this balance is virtually impossible. That is, until we consider our use of condensate and the heat we may have otherwise wasted.

The value of condensate

It's widely known that condensate is hot, but it's only when we consider how this translates to heat energy that we realise how useful it is as a resource.

The condensate generated by the steam heating system will normally have about 25% of the energy that the steam had and contains little to no dissolved solids.
If the condensate is merely discharged from the system and, subsequently, disposed of, then that valuable energy resource is thrown away with it. This is an easily avoidable waste that few of us can afford.

Draining condensate, rather than re-using it, can trigger water and effluent management costs, which can be significant. Similarly, draining condensate can make it harder for us to comply with the regulatory standards around environmental effluent. In many countries, including the UK, condensate often has to be cooled before it can be drained. This, again, often comes at an extra cost

The uses of condensate

- We might now realise that condensate – and the heat energy – is too valuable to be tipped down the drain, but how can it be put to better use ?

1. Boiler feedwater

- Reduces need for (and cost of) fresh water
- Reduces need for (and cost for) treatment chemicals
- Requires much less energy than cold make-up water

2. Flash Steam

- Recovers up to 80% of the energy from the rejected Total Dissolved Solids (TDS) water
- Saves on fuel
- Reduces carbon emissions
- Eliminates unsightly plumes of steam

The recovery process

As you're well aware by now, steam is usually generated for most industrial and process industries. How it is recovered can be broadly summarised in three steps :

1. Steam traps are used to remove condensate from the steam system. A steam trap survey can offer invaluable insight into the performance of a given system and will almost certainly reveal impressive savings potential through reduced fuel consumption, fuel emissions, water and effluent charges.

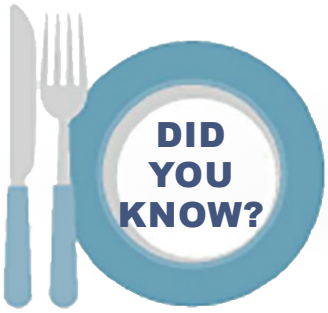
2. Pumps are used to return any condensate not captured by steam traps to the boiler feedtank.

3. Condensate is mixed with other types of feedwater to heat it within the feedtank.

Condensate recovery is one process that is genuinely capable of boosting boiler efficiency, saving energy, enhancing equipment lifespan and complying with legislation – all of which can, in turn, generate substantial savings to those who use steam systems.

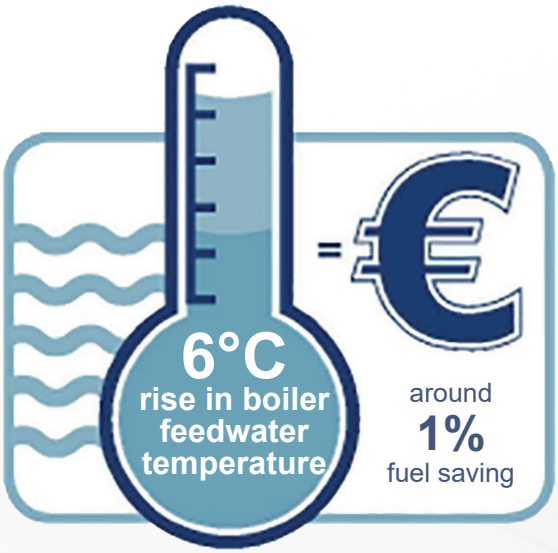
I may not play the leading role in the steam system, but condensate recovery is undeniably the unsung hero of the boiler house.

Save energy is a flash with **heat recovery**

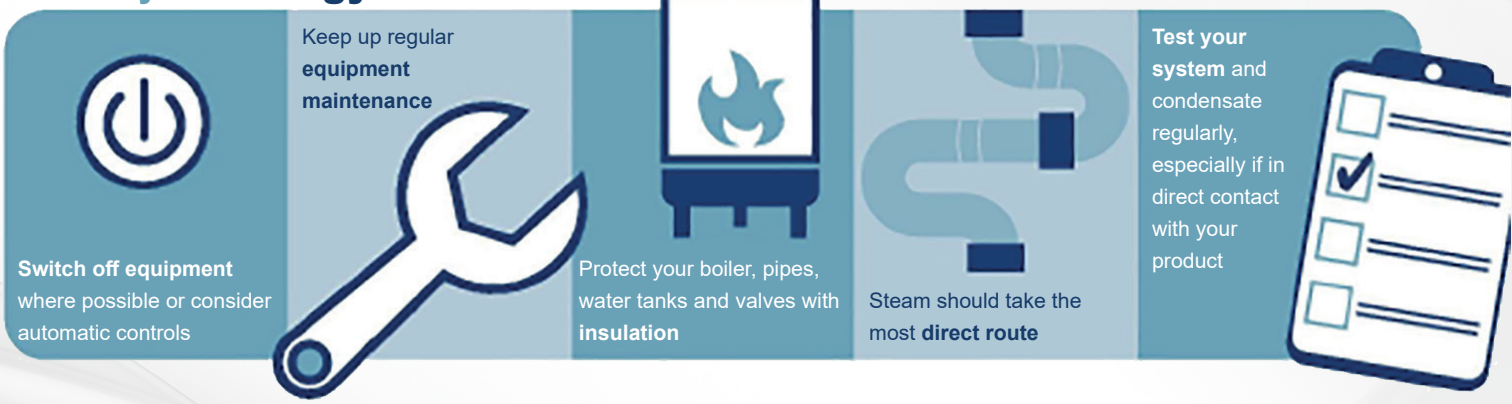


Your surplus steam still contains heat energy as it leaves your process

Whether you use steam to **cook, humidify, dry, sterilise** or **package** your products, your process could be more energy efficient.

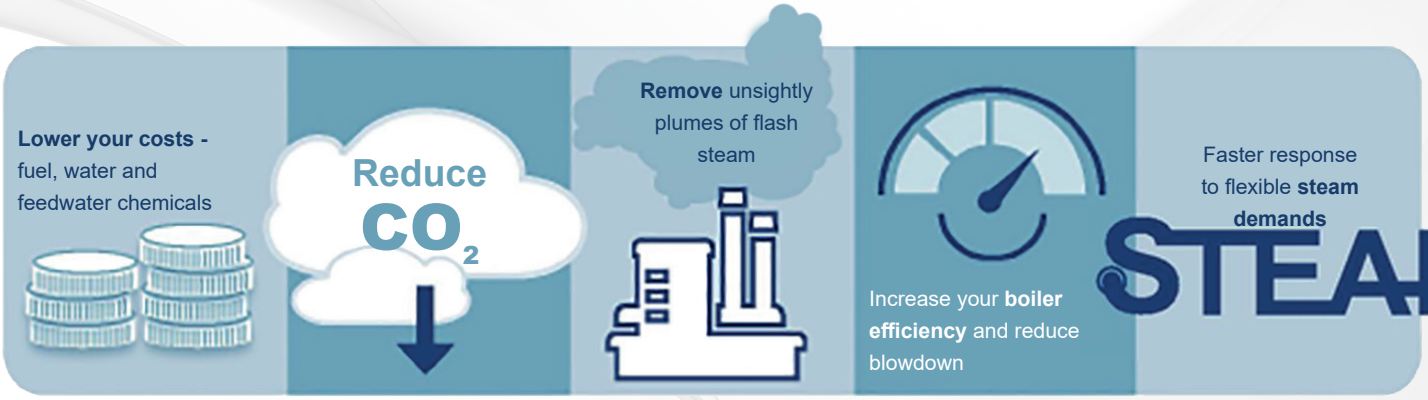


Stretch your **energy**



To find out if you could save even more, why not take the Spirax Sarco energy saving challenge? Talk to your local Spirax Sarco steam engineer about heat recovery possibilities to match to your process demands on site.

Our **recommendations** can



By ensuring efficient steam generations and distribution, you **could save** **10% - 30%*** of the **energy used** in high temperature boilers and steam systems.

*Source : Carbon Trust

Reclaim your lost energy with smart energy recovery solutions from Spirax Sarco

World News

Egypt

Juhayna Group is one of Egypt's Market Leader in Food and Beverages Industry, the group consists of five production factories :

- ✓ Concentrate
- ✓ Juice
- ✓ Dairies
- ✓ Milk
- ✓ Cheese

We collaborated with Juhayna group to apply Energy Saving Program through Spirax Sarco specialized technical support team by conducting steam traps survey, delivering full report and calculating the amount of the expected saving if we supplied full trap set for the system. The program results took us three months to calculate the outcome.

The achievement done give us the opportunity to be the consultant and advisor for Juhayna Group in Thermal Energy Management

Also we participated in their in-house organized "Juhayna Energy Day". During the event we managed to present the core reasons behind saving energy and how it leads to positive results ecologically, financially, and how effective reducing energy usage increases an individual's awareness of the surrounded environment. We also presented Spirax Sarco range of Energy Saving Solutions which yet maintain the highest quality, boost the productivity and offer a high return on investment.

" Juhayna Energy Day meets success because of YOU, " your active participation was the key. I grab this opportunity to thank you so much for your support, I'd have done nothing without you

El Dawlya Juhayna – Maintenance Manager

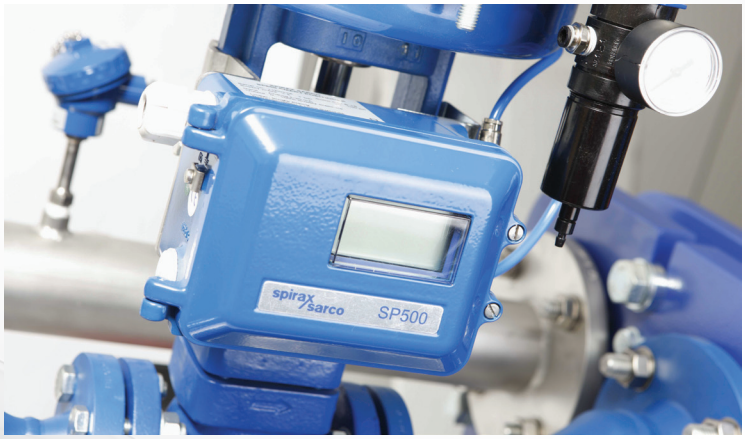
Juice factory savings	
CO2 emissions	Prevent 42 metric ton CO2/year
Naturel gas	829 GJ/year + 22 000 m^3/year
Water	Save 1 million liter/year = 1 000 m^3/year

World News

Middle East

Industry :	Hotel
Place :	Dubai - U.A.E.
Objective :	Cost effective solution to generate hot water
Solution :	EasiHeat™ system as an alternative to conventional storage calorifier
Results :	Around 20% energy savings, plus operational and maintenance saving

Luxury hotel saves 20% of its energy costs and reduces onsite maintenance costs




Address Dubai Mall

The Address Dubai Mall is a luxury hotel located inside the world's largest retail and entertainment destination, in downtown Dubai. The Address Hotels & Resorts is the first brand launched by the Emaar Hospitality Group.

The customer was looking for alternatives to their domestic hot water and heating system, which used conventional storage Calorifiers.
After an in-depth review, a Spirax Sarco EasiHeat™ system was recommended for the hotel.

After the successful installation and commissioning of an Exhaust Vapour Condenser (EVC) packaged system, the hotel invited Spirax Sarco to investigate further efficiency improvements.
Following further exploration, additional steam system improvements for the hotel were made. Two existing conventional storage calorifiers onsite were replaced with one EasiHeat™ engineered system.
The new EasiHeat™ system installed at site uses plant steam to produce on-demand domestic hot water to three floors of the hotel.

The improvements Spirax Sarco delivered reduced the hotel's maintenance costs and created more space in the plant room.
Mr. Bapurao, the hotel's Chief Engineer said, "I am amazed by the technology and configuration of the product, and I am sure this will exceed our expectation".

After the system was installed, the solution delivered an estimated energy saving of 20% for the hotel's heating and domestic hot water application.


Easiheat

The solution also improved the performance of the condensate system reducing heat loss due to sub-cooled condensate.

With the Spirax Sarco solution proving successful, the customer will review the replacement of all storage calorifiers at the hotel with this new generation Easiheat™ system from Spirax Sarco.

Thermocompressor High efficiency energy saving solution

Spirax Sarco's Steam Jet Thermocompressors are energy saving devices that compress low pressure steam, often waste steam, to a higher useable pressure that can be recycled back into the process

Reduce waste to increase profits

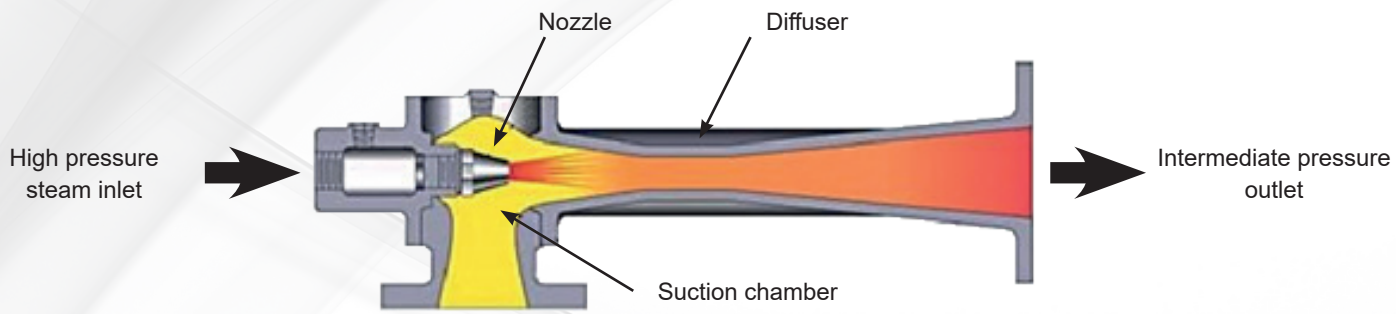
Process industries are constantly looking for opportunities to reduce energy costs by optimising their energy consumption. For many of our customers this means reducing waste steam to improve steam generation efficiency and increase profitability. This is where our Steam Jet Thermocompressor can help.

How it works

Our Steam Jet Thermocompressor uses high pressure steam to entrain low pressure steam and discharges at a pressure that lies somewhere between the two pressures. High pressure motive steam enters and passes through the nozzle and enters the suction chamber where it is brought in contact with the low pressure steam. This steam mixture then enters the diffuser where its kinetic energy is converted to pressure energy. The steam discharged is then put back into the process.

Advantages

- **It's simple, compact and lightweight construction means it's easy to install into a pipeline and enables overhead installations**
- **It has low capital and operating costs**
- **There are no moving or rotating parts**
- **Minimal maintenance is needed meaning the units can be installed in remote or locations**
- **Oil free discharge ensures there is no lubrication contamination**
- **Suitable for hazardous areas**
- **Virtually silent operation**



For more information, please visit www.spiraxsarco.com or see contact details at the end of the magazine

Case Study

A major actor of Food Beverage and Spirax Sarco develop a solution to save energy and water through effective flash steam recovery using a thermocompressor

Industry :	Food & Beverage
Place :	Chile
Objective :	Improve energy efficiency through flash steam recovery
Solution :	Installation of flash steam recovery system with thermocompressor
Results :	Annual reduction of 1.6% in the plants energy consumption
Payback :	1.3 year

Objective :

This factory became part of the group in 1936. It currently produces 36 thousand tons of drinks, infant cereals, coffee and coffee mixes, of which 50% is for export, with cereals for children and coffee mixes being shipped abroad.

As site production increases, the factory is becoming more aware of its need to lower its energy consumption, therefore reducing emissions and saving money. This is in line with the customer's overall sustainability objectives, which intends to achieve 20% renewable energy use across all sites by 2020.

To help them achieve this objective, Spirax Sarco Chile was invited to help identify opportunities where energy could be saved in the steam and condensate system.

The solution :

After a full investigation, it was decided to concentrate on the condensate return from the roller dryers.

Steam is used to heat the roller dryers and the steam inside the cylinders is kept at a high and constant pressure. Each roller dryer has two cylinders and condensate is discharged via float traps. Condensate was being discharged from the cylinders directly to the condensate storage tank under high pressures, causing a large amount of flash steam to be released to the atmosphere.

The proposal was to recover as much of the flash steam as possible and put it back into the process, therefore saving energy and money. To achieve this, a flash steam recovery system with a thermocompressor was installed.

The thermocompressor would re-compress the low pressure flash steam generated by the roller dryers and return it into the process, meaning less steam needed to be generated via the boiler.

Results :

The customer have seen a reduction of 5.5% in water consumption and 1.7% in CO_2 emissions.

Overall they are seeing a reduction of 1.6% in their annual energy consumption with a payback of 1.3 years.

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YouTube

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