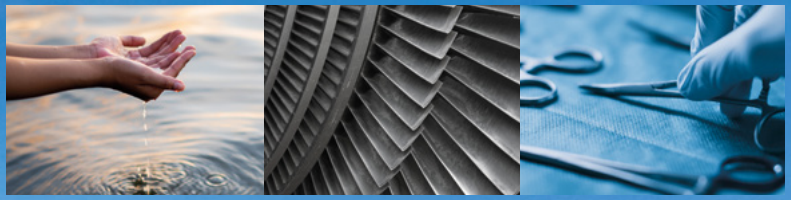

You see steam. We see...
NATURAL
TECHNOLOGY
spirax sarco
GESTRA

STEAM IS FAMILIAR IN NATURE
PART OF LIFE EVERY DAY

Yet this extraordinary fluid is a high efficiency tool for diverse and essential industries.

As renewable generation solutions and digital controls evolve, steam will be a vital part of our sustainable future. Steam is too small a word for it. **This is Natural Technology**.



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Food


Beverage


Hospitals and Health


Chemicals


Pharmaceutical


Original Equipment
Manufacturers

STEAM IS ENDLESSLY VERSATILE

Every moment of every day, Natural Technology is at work, helping to keep us safe and keep energy flowing in all kinds of applications.

- Transferring heat energy
- Humidification
- Sterilization
- Cooking
- Cleaning
- Cooling and refrigeration

CAPABILITIES NO OTHER FLUID CAN MATCH

High energy density

enabling effective transfer of large quantities of energy

Precise temperature control

Easy management of steam temperature through pressure control

Smaller infrastructure

Minimise valuable process space

Flows naturally

without need
for pumps

Efficient heat transfer

Can be applied onto
heating surfaces or directly
onto product

Natural Water Cycle

Leaves only water for
recovery and reuse

LIFE DEPENDS ON IT

Steam lets us live on Earth.

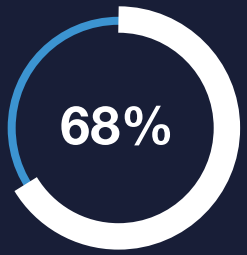
The steam and condensate loop emulates the water cycle, which controls planetary temperature and provides hydration for all life

Steam lets us leave Earth.

The Saturn V rocket used two of the biggest steam engines ever made

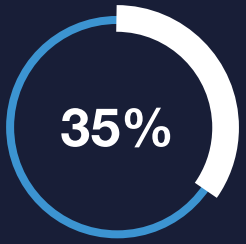
STEAM WILL BE CENTRAL TO THE TRANSITION TO GREENER TECHNOLOGIES

More and more, industries and organisations are recognising steam as the Natural Technology that fits with their responsibility agendas. With new steam generation technologies, we're on a path towards carbon-free steam generation.



more likely to invest in greener steam technology following Covid-19.

% of survey respondents,
Source: Aggreko Report (March 2021)



of all the UK's industrial heating is achieved by steam systems. Since 73% of the UK's industrial energy demand is for heat, raising the efficiency of steam generation will make a huge sustainability impact long-term.

Source: Aggreko Report (March 2021)

immediate energy savings through better maintenance and low-cost improvements of steam systems.

% of survey respondents,
Source: Aggreko Report (March 2021)

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Spirax Sarco and Gestra are world leaders in advanced products for the precise control and efficient use of Natural Technology. Let's talk about the future today.

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GREEN STEAM SHOWCASE
RENEWABLE, ELECTRIC STEAM

Carbon-free, Emissions-free, and 100% Renewable Steam

Higher capacity users in commercial and industrial sectors are able to decarbonise their steam generation today, thanks to the power of electricity. Such systems align well with the portfolio of solutions driving progressive companies towards a truly sustainable business.

When coupled with 100% renewable power sources such as hydroelectric, PV Solar or wind, electric steam generators are capable of 1 to 20 tonnes of steam production with no emissions or carbon generation. They are capable of converting renewable electricity into steam at 97% energy conversion efficiency.

IT'S MORE THAN JUST STEAM.
IT'S NATURAL TECHNOLOGY.

GREEN STEAM SHOWCASE
BIOMASS STEAM BOILERS

Improved sustainability, lower bills

Steam can be generated from the combustion of organic waste materials such as olive pulp, rice husks and palm kernel shells, created from various manufacturing processes. It can be used to generate heat as well as power. This combined heat and power (CHP) system generates electricity whilst also capturing usable heat that is produced in the process. The reduction of organic waste and the utilisation of energy produced in combustion, helps improve environmental sustainability and lower energy bills.

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GREEN STEAM SHOWCASE
THERMAL BATTERIES

Zero emissions steam

Thermal batteries offer a sustainable steam generation alternative, harnessing renewable electricity which is stored as thermal energy, providing for the release of steam on demand for an array of industrial applications. Each thermal battery has an expected thermal efficiency of above 90%, a lifespan of 20+ years with minimal maintenance and no loss of performance. An exciting pathway to zero emissions steam.

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GREEN STEAM SHOWCASE
HYDROGEN STEAM BOILERS

Net zero hydrogen power

While burning natural gas generates approximately 10% carbon, burning hydrogen generates no carbon emissions. Hydrogen-only energy centres are being developed specifically to support the UK Government's target of net zero by 2050.

This technology is well suited to boilers for steam generation. The hydrogen infrastructure requires further development, but there is no cost premium for a zero carbon hydrogen-ready burner for steam generation at scale. The technology has also demonstrated a 10% reduction in flue gas volumes, meaning significantly improved boiler efficiency.

Visit natural-technology.com to see our interview with Paul McLaughlin, Principal Consultant at Kiwa Gastec and discover Hydrogen's role in decarbonisation.

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GREEN STEAM SHOWCASE
DIGITALISATION

The power of remote control

Remote monitoring and control of steam systems will play a key role in steam's sustainability journey.

In place of inefficient reactive responses to problems, digitalisation brings early alerts, predictability and rapid problem-solving, with new levels of control for customers.

Greater efficiency
Problems are pre-empted and acted on immediately, maximising plant up-time.

Extension of product life
Early problem detection means smarter maintenance and repairs.

Carbon savings
Optimised steam systems result in real emissions reduction through more efficient energy use.

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