OPTIMISE
MANAGE
DECARBONISE

Steam: Reliable **energy**
for the **sustainable future.**

Sustainability.
Steam decarbonisation.

Kirill Safonov
Business Development manager
ME, NW Africa, Türkiye
F&B segment

Spirax Group | Steam Thermal Solutions

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How we deliver

Solving customers' problems is at the heart of our 'total solutions' approach. Our thermal energy and fluid technology solutions improve operating efficiency and safety in our customers' critical industrial processes.

We deliver our solutions through three strong aligned Businesses and their Divisions, that include global and regional product brands.

Spirax Group

Steam Thermal Solutions

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GESTRA

HITER

cotopaxi

Electric Thermal Solutions

CHROMALOX

Vulcanic

THERMOCOAX

DUREX INDUSTRIES

CETAL

RS ISOLSEC

LOREME

Watson-Marlow Fluid Technology Solutions

WATSON MARLOW

Bredel Hose Pumps

masosine Process Pumps

AFLEX HOSE

ASEPCO

iO PUMP

Flexicon Liquid Filling

Alitea OEM Pumps

Steam Thermal Solutions sales and manufacturing presence

Geographic breadth

Sales:

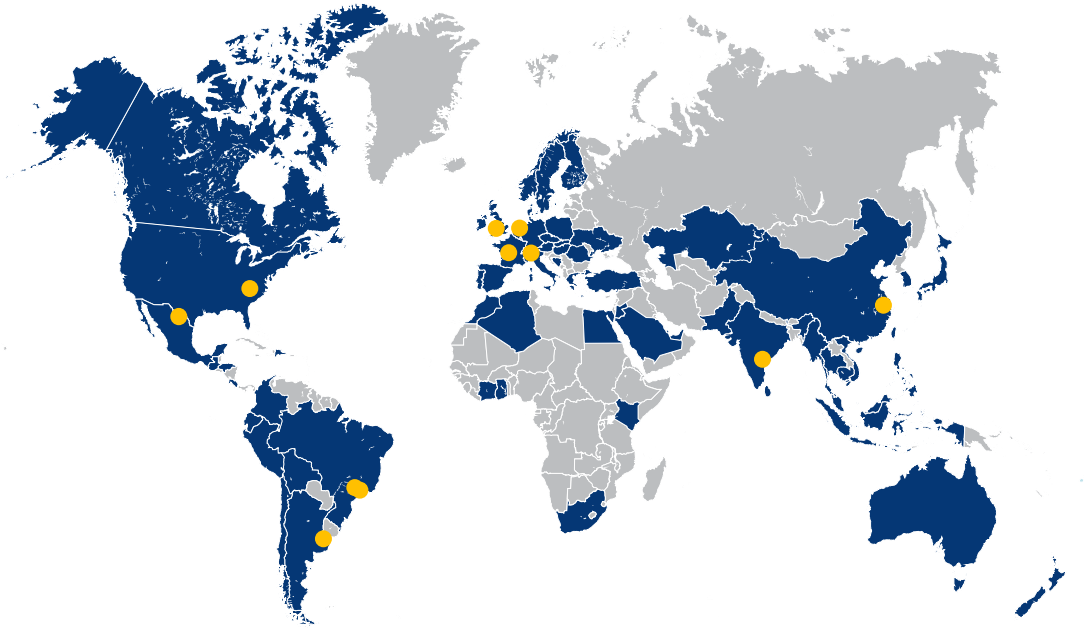
Operating units*	Sales offices	Indirect presence
45 Countries	22 Countries	70 Countries

Manufacturing:

EMEA:
UK
France
Germany
Italy

Americas:
USA
Argentina
Brazil (x2)
Mexico

Asia Pacific:
China
India



**Operating units are business units that invoice locally*

Customer environment benefits

Annual estimated customer CO_2 energy and water savings from a select range of 20 product categories sold in 2023.

To put these savings into context, that is the equivalent of:

16.6m
Tonnes of CO_2 per year

226m
GJ per year of energy

87.1m
m^3 per year of water

675m
Mature trees absorbing CO_2

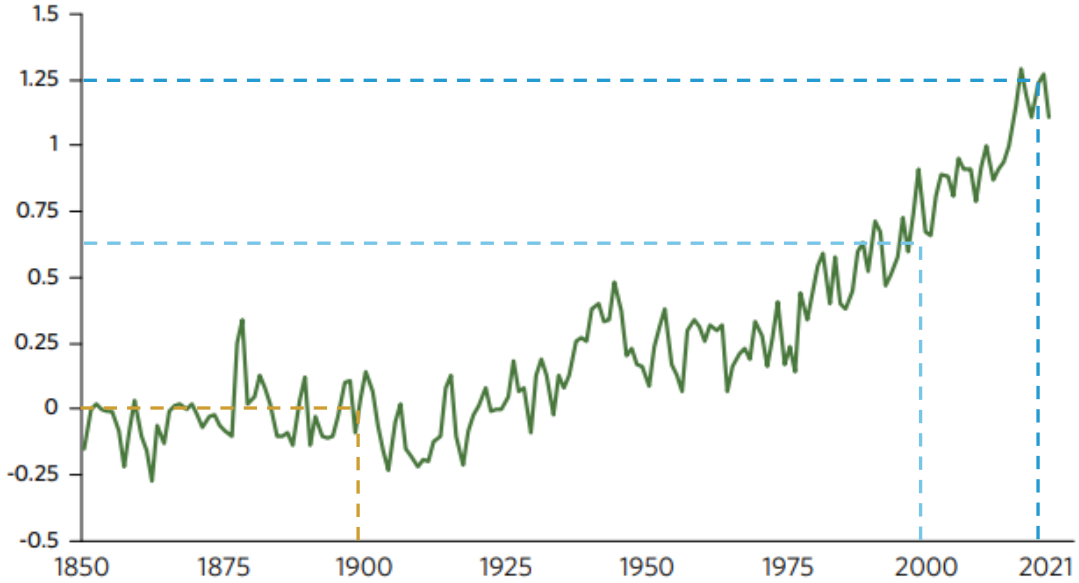
2.08m
People's annual average energy consumption (UK)

34,900
Olympic-sized swimming pools of water

Today, we live in a world with an estimated 8 billion people in it, population growth places increasing pressures on the planet's resources -- water, forests, land and the earth's atmosphere -- challenging environmental sustainability.

Climate change is the defining challenge of our time and it is driving a profound transformation that changes every industry and impacts all human activity.

Global annual mean temperature relative to pre-industrial levels (1850–1900 average), 1850–2021 (degrees Celsius)



Source: The figure is drawn from the the World Meteorological Organization's State of the Global Climate 2021 report, which combines six international data sets for temperature: HadCRUT.5.0.1.0 (UK Met Office), NOAAGlobalTemp v5 (USA), NASA GISTEMP v4 (USA), Berkeley Earth (USA), ERA5 (ECMWF), JRA-55 (Japan).

In the past 20 years (2000 to 2020), the global temperature increase has accelerated **five times** in relation to the previous century (1900 to 2000).

The WHY… global warming scenarios …

+1.2^{0}C

+2.1^{0}C

+3.2^{0}C

+4.9^{0}C

Countries with legally binding net zero commitments

Every single organisation and person, can make a difference towards achieving net zero commitments!

China and **USA** combined, contribute around **38%** of the worlds global greenhouse gas emissions, they both have net zero targets but those targets are not legally binding commitments

Business has a critical role to play in driving down greenhouse gas emissions and building the resilient, thriving zero-emissions economy.

Sources: Science Based Targets initiative (SBTi)

Drivers of decarbonisation opportunities

CO_2

Heat contributes 40% of global CO_2 emissions

Industry

Represents 50% of total heat usage

Source: IEA 2019

Drivers

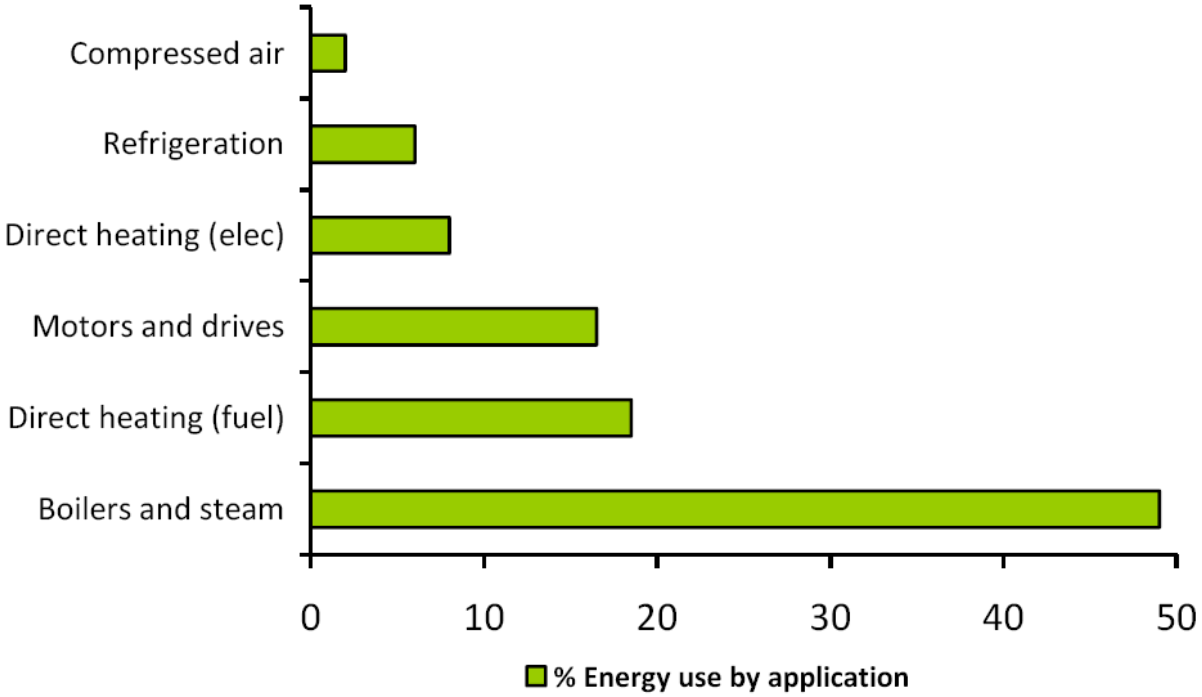
- **Governments/legislation**
- **Stakeholder sentiment**
- **Energy intensity of industrial processes**

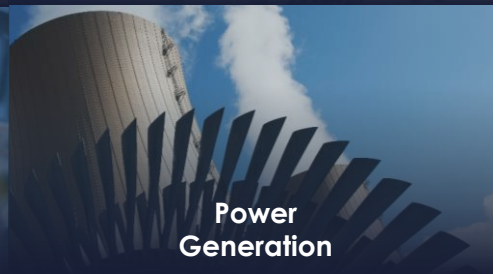
Only 5% of industrial heat generated from electricity

Barriers

- **Infrastructure requirements**
- **Varying rates of adoption**
- **Short term economics**

Everage energy consumption in F&B industry





What Role does Steam Play?

Steam is a powerful and highly efficient thermal energy transfer medium that plays an integral and essential role in most industries

Steam is used for blanching, cooking, baking, brewing, distilling, packaging, cleaning, sterilising, space heating, hot water production, humidification, energy transfer and distribution and many more processes….

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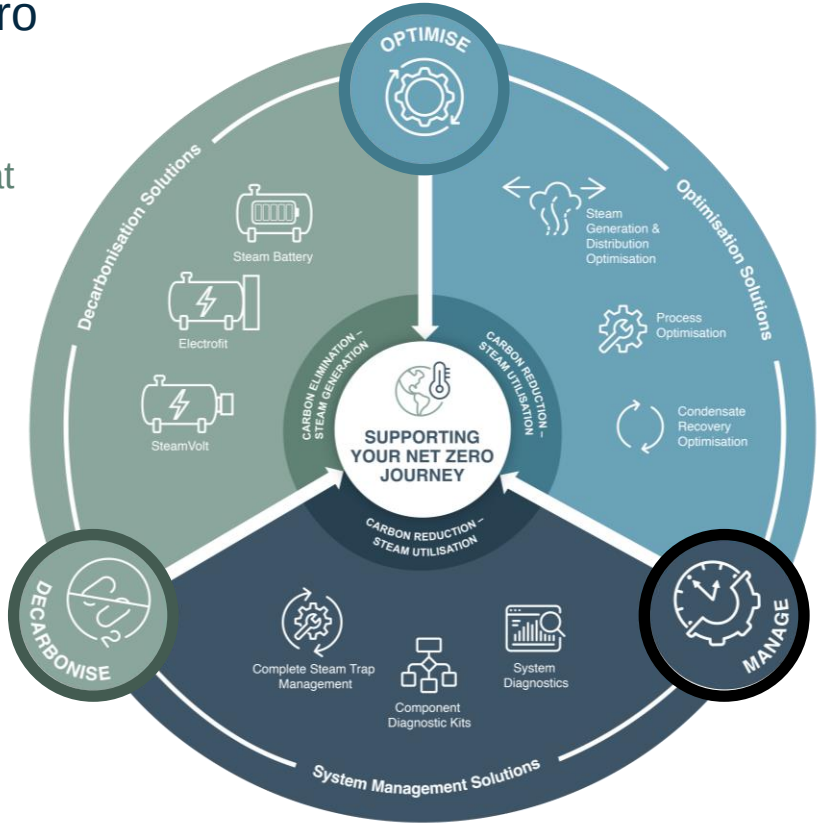
Thermal Decarbonisation – on the way to your sustainability journey

Journey to Net Zero

Decarbonise –
Innovative solutions that will support steam generation decarbonisation



Optimise - Analysis of your steam system to understand and address energy demand reduction possibilities across your complete steam and condensate system

Manage - Implementing Products, Solutions and Services (physical & digital) that enables monitoring, management and fault prevention of the steam system

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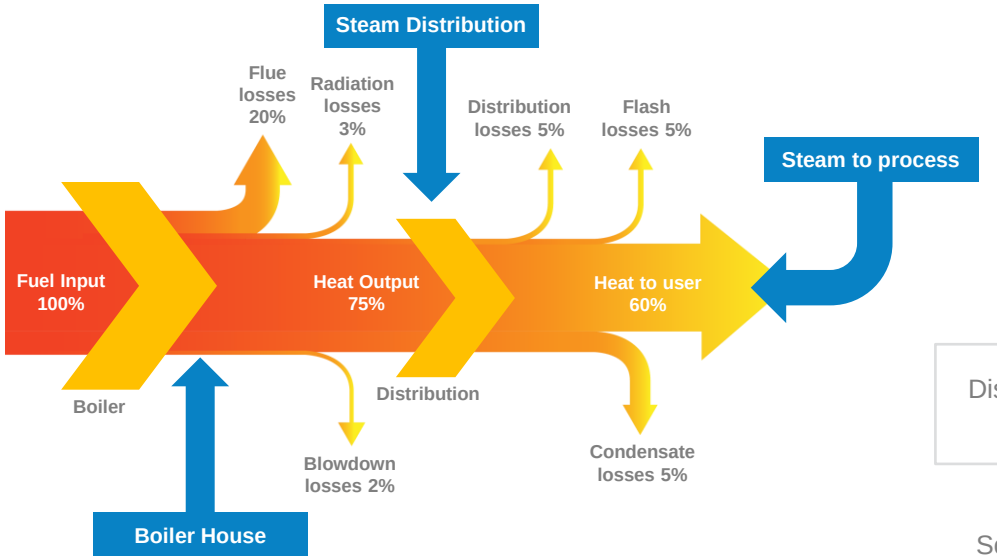
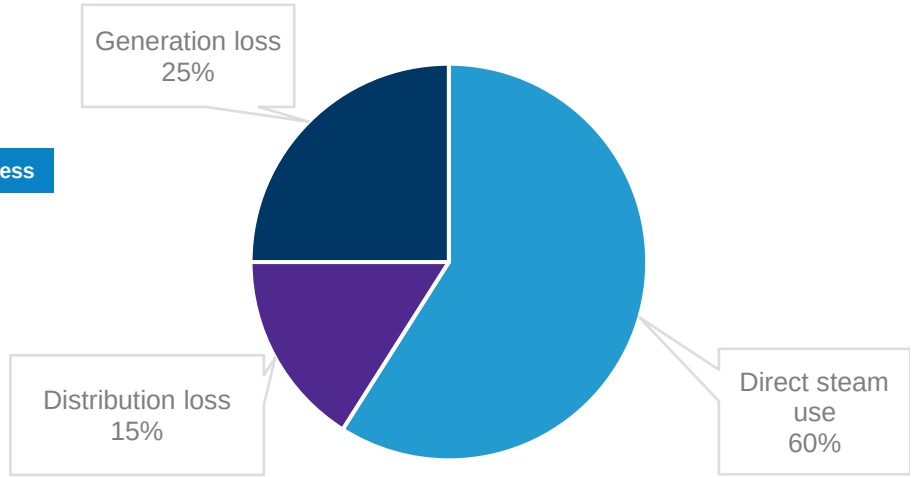
Thermal Decarbonisation – Optimise stage

We consider energy efficiency to be the 'first fuel' as it still represents the cleanest and, in most cases, the cheapest way to meet our energy needs.

– International Energy Agency





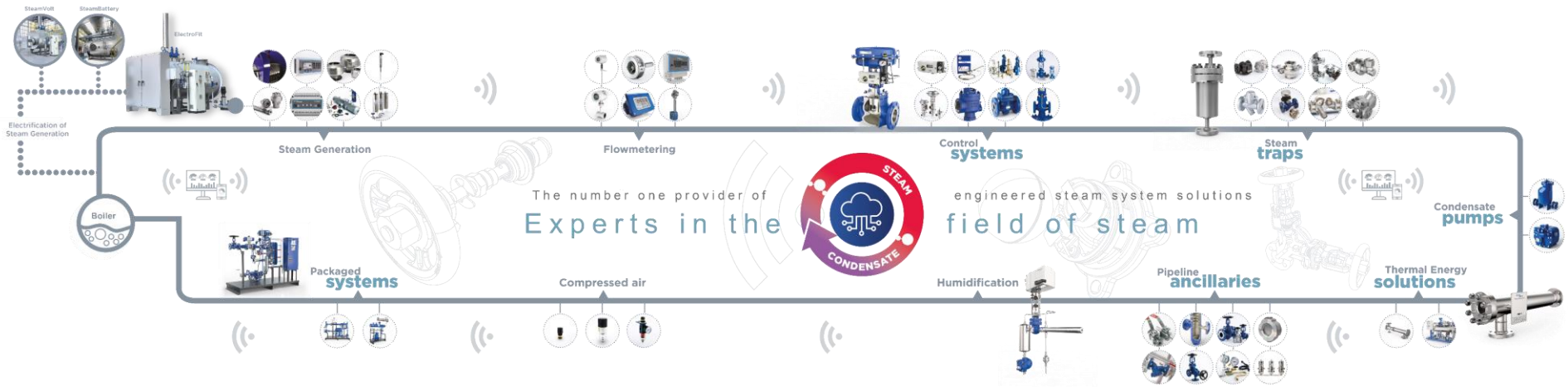
Source:U.S. Manufacturing Energy Use and Greenhouse Gas Emissions Analysis

Thermal Decarbonisation – Optimise stage

Step 1:
Manage steam trap population

Step 2:
Advanced thermal optimisation

Step 3:
Thermal energy audit



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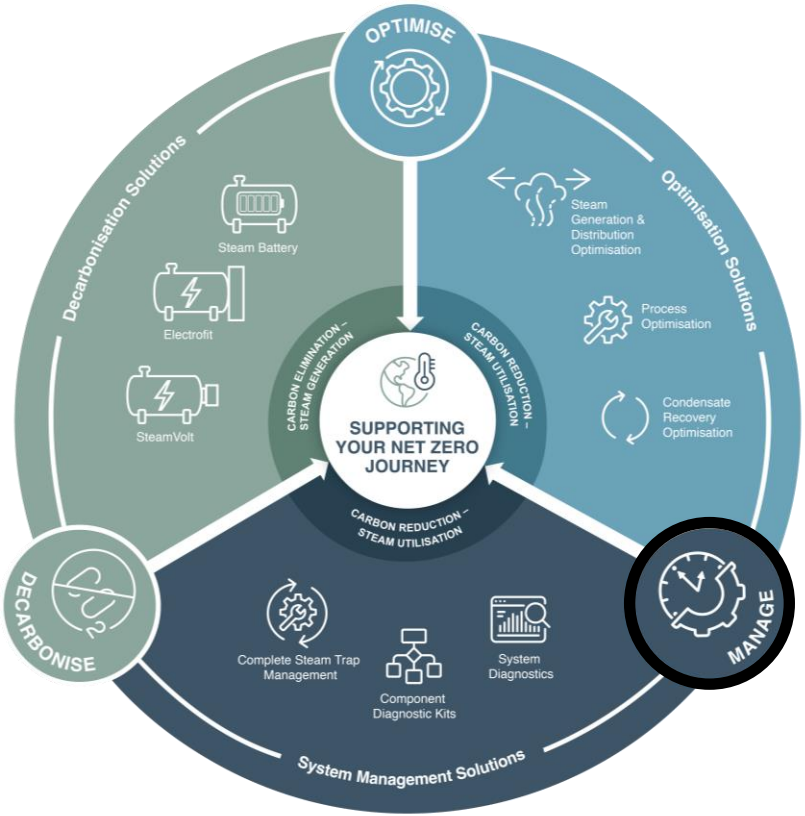
Thermal Decarbonisation – Manage stage

Journey to Net Zero



Manage - Implementing Products, Solutions and Services (physical & digital) that enables monitoring, management and fault prevention of the steam system

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Thermal Decarbonisation – Manage stage

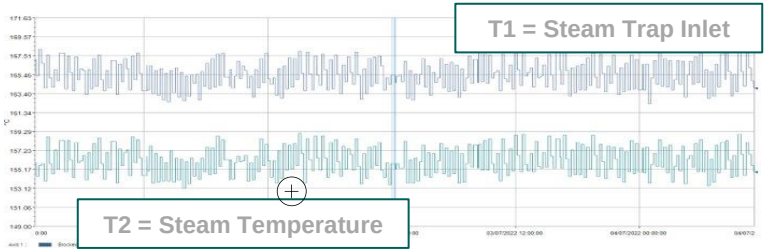
Sensors & Smart Products.

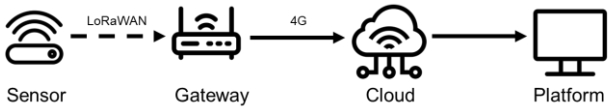
Gateways & Database

Engineer & Algorithm

Dashboard & Report

Continuous Steam Trap Monitoring





Diagnostic Kits

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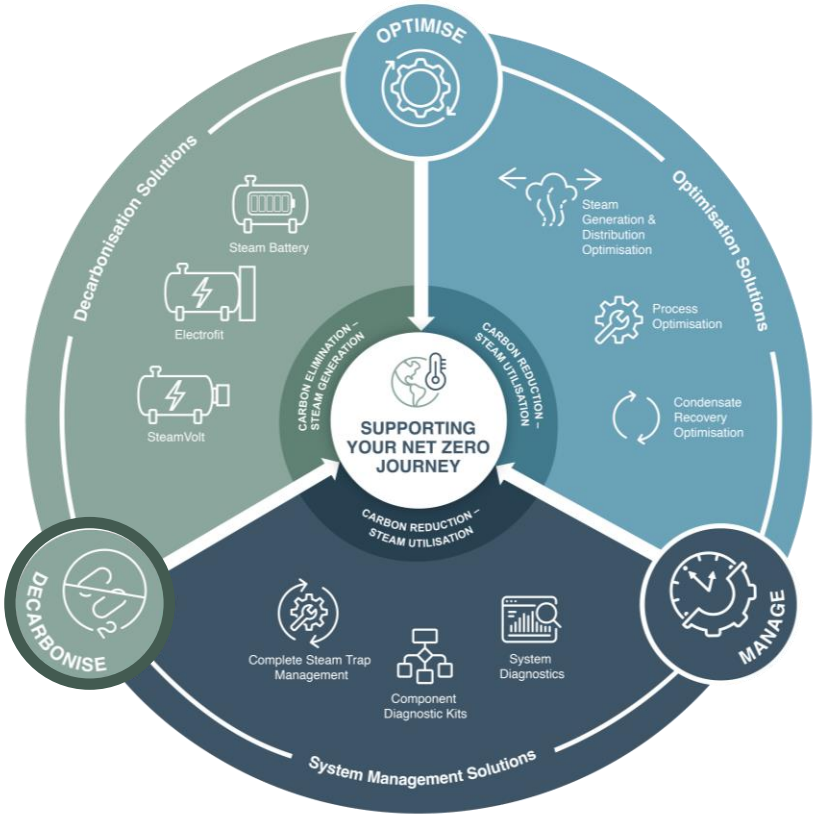
Thermal Decarbonisation – Decarbonise stage

Journey to Net Zero

Decarbonise – Innovative solutions that will support steam generation decarbonisation



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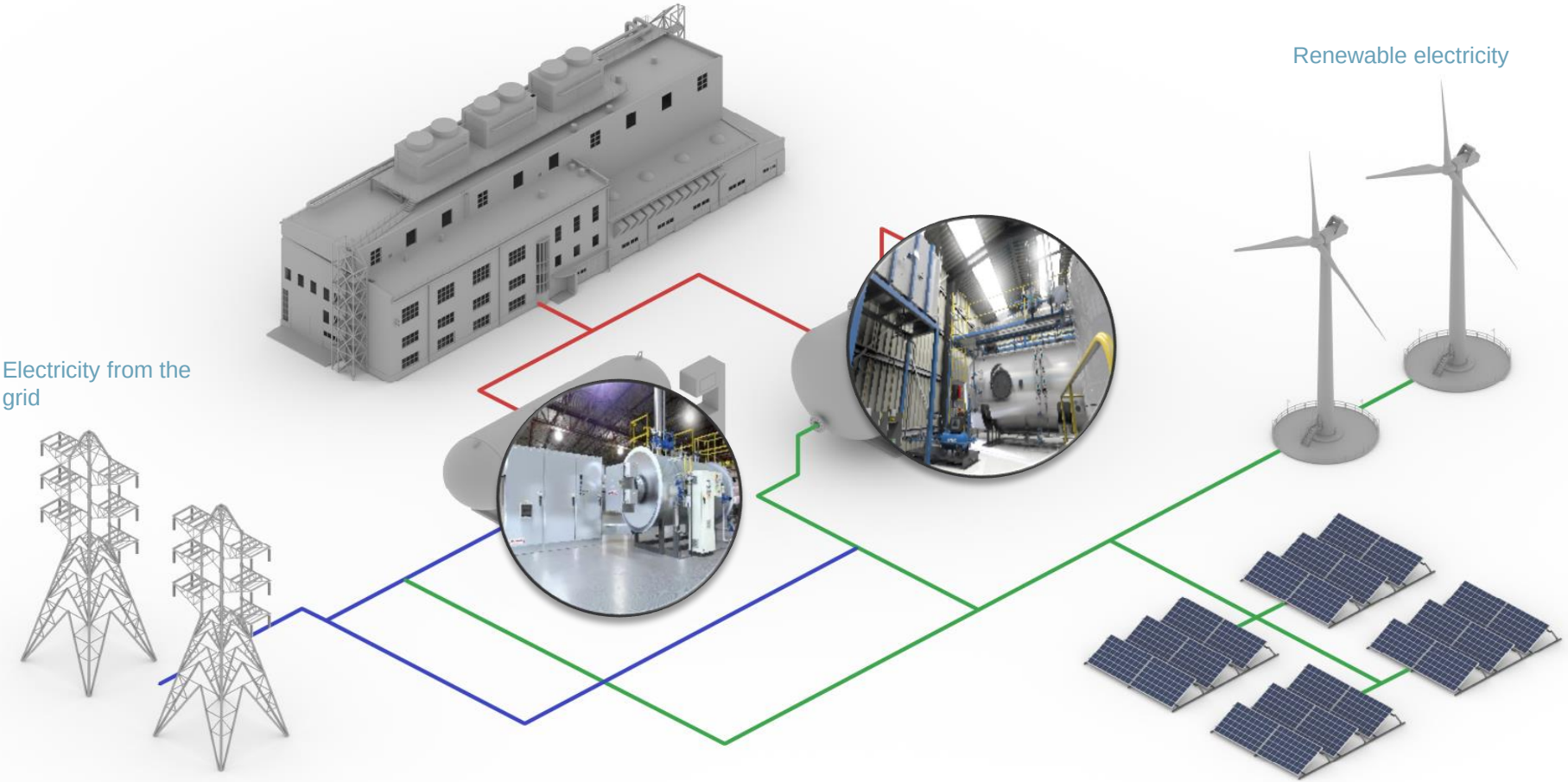
Thermal Decarbonisation – Decarbonise stage



Thermal Decarbonisation – on the way to your sustainability journey

Sustainability Journey

OPTIMISE
Energy Efficiency / Reduce Loses
Energy Saving Solutions

Reduce Losses and Optimise Energy Efficiency

MANAGE
Metrics, Control,
Benchmarking Supply Chain

Leverage Digital Developments to Improve Energy Management

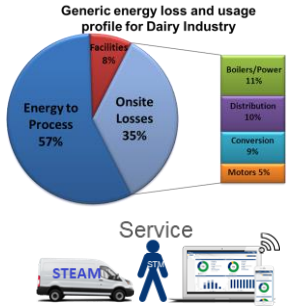
DECARBONISE
Alternatives / Renewables
Thermal Solutions

New Technologies to Further Enhance Decarbonisation

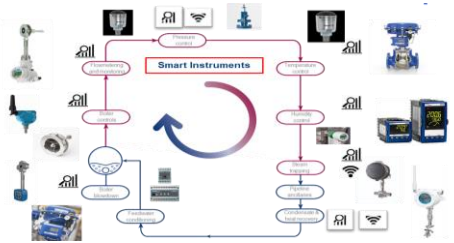
2030-2050 Sustainability Targets

Capabilities & Opportunities

SERVICES:
Audits, Engineering, Projects, Validated Savings



STEAM & CONDENSATE LOOP



ALTERNATIVES/INNOVATIVE/ADVANTEG SOLUTIONS

- Thermal Energy Storage
- Waste Heat to Electricity
- Decentralised Steam Generators
- Electrifying FT Boilers

TargetZero
SOLUTIONS FOR DECARBONISATION

Support

- Audits
- Energy Saving Opportunities
- Heat Recovery Solutions
- Training

CONNECTED SERVICES

strata

cotopaxi

INTEGRATED STEAM & ELECTRIC THERMAL SOLUTIONS



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