

Energy optimisation & efficiency



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About us

Groupe Fuji Electric Co., Ltd.

Founded in Japan in 1923, the Fuji Electric Co., Ltd. Group is recognised as one of the world leaders in electrical power equipment, industrial controllers and instrumentation. With over 8 billion dollars in turnover and 27 000 employees* worldwide, Fuji Electric's engineers and technicians play an active part in all technological innovations in the field of energy optimisation and savings. Thanks to the experience it has acquired in developing electronic components and perfect command of the most recent technologies, Fuji Electric offers products which are perfectly adapted to applications in most industrial sectors including production, electrical energy transport and industrial equipment.

*As for March, 2019



Fuji Electric France S.A.S.

Fuji Electric France is a subsidiary company of the worldwide group, Fuji Electric Co. Ltd. The French company manufactures and sells in Europe the instruments that have built the Japanese group's reputation. As a recognised specialist in pressure transmitter manufacture, our area of expertise also covers all industrial instrumentation: measurement, monitoring, regulation, analysis of combustion gas, metering, energy optimisation and radiation monitoring.

Our location in France has enabled us for 20 years to provide a quality local service to our customers on all our products. Our large network of sales representatives, international distributors and after-sales technicians guarantee the best service. Our local partners provide local support in your language in order to offer the most efficient service.

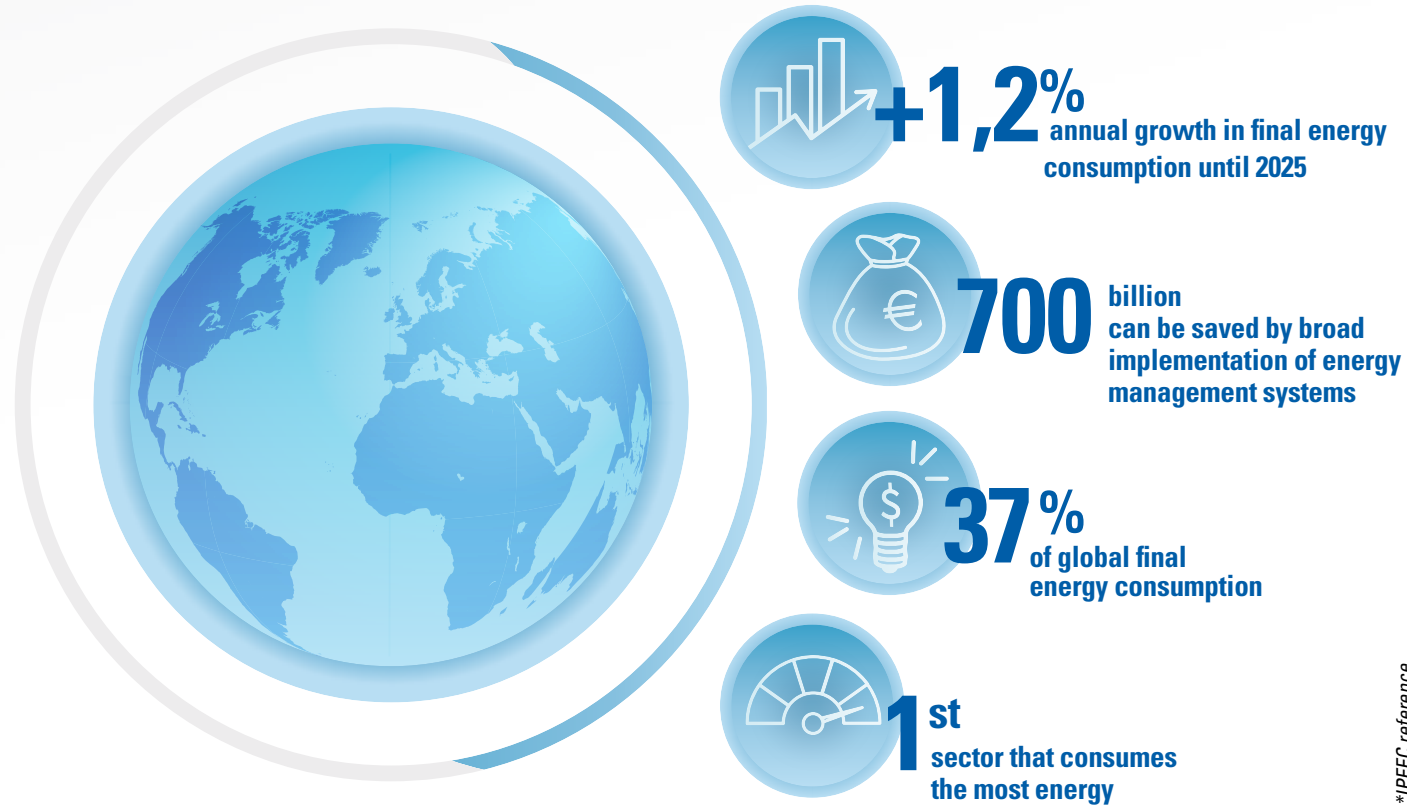
Our company has become an essential centre of competence, recognised in the process industries. The instruments produced by our plants are among the most efficient on the market.

Whatever the industrial sector, (oil and gas, electricity, thermal or nuclear energy, chemical, paper production, agri-food, water and environment etc) Fuji Electric is here to help you throughout your project. We will deliver a tailored response that is best suited to your specific needs, whether they be diagnostic, technical, application, commissioning or ongoing support and maintenance.

Energy optimisation in the process industries

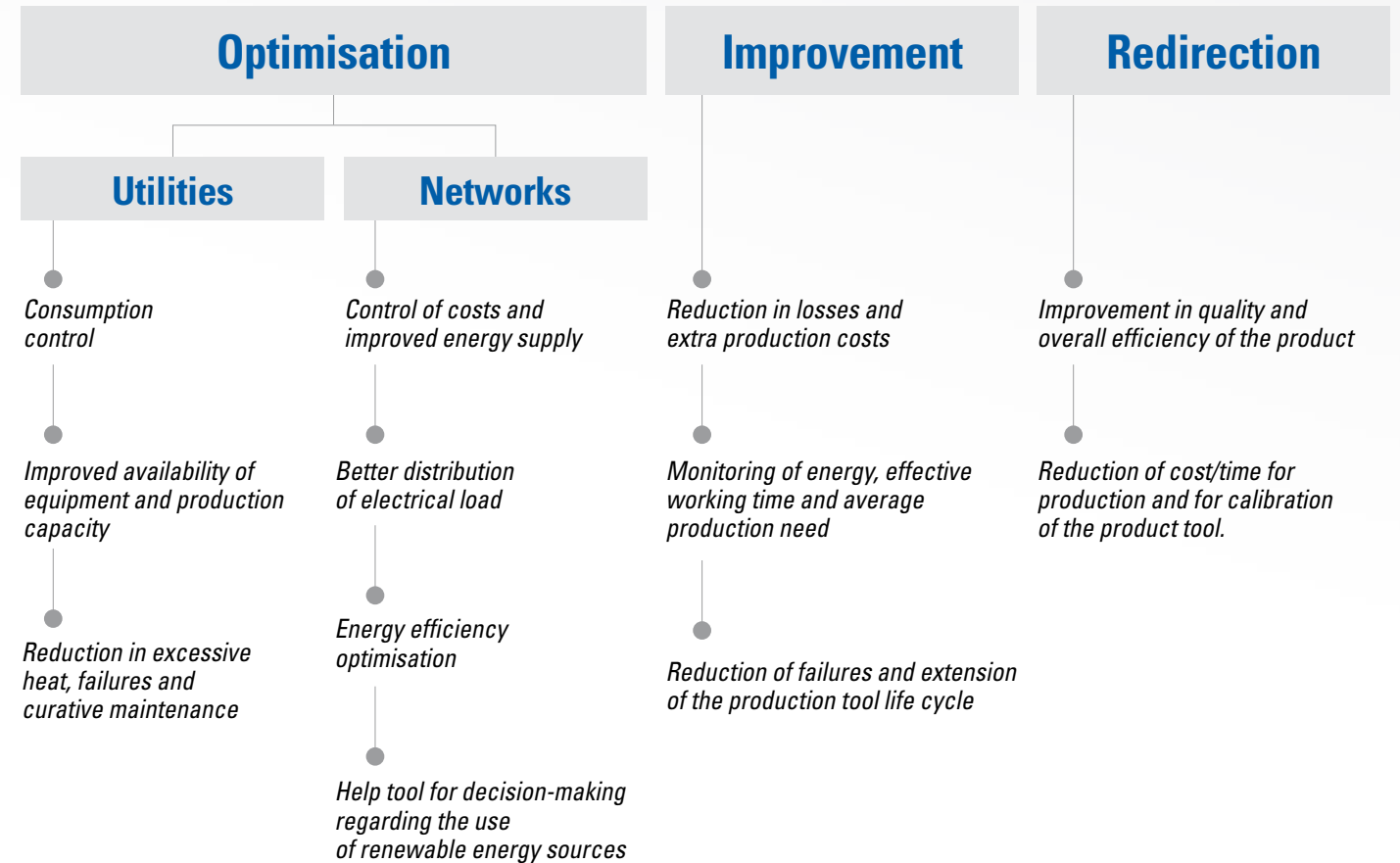
The industry accounts for the largest share of global final energy consumption and the highest total CO₂ emissions.

Improving energy use in this sector can strengthen industrial competitiveness while supporting economic development, energy security and the reduction of greenhouse gas emissions.



*IPEEC reference

Industrial energy performance facilitates



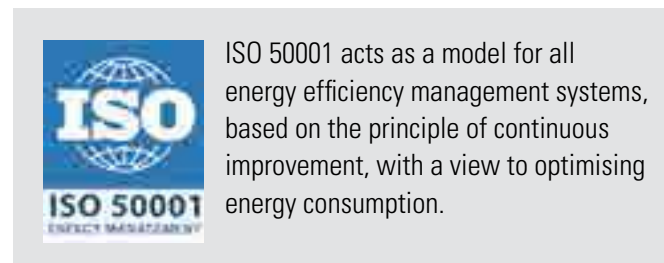
Auditing, measuring, and analysing consumption to boost savings

Energy savings will allow a business to increase its competitiveness and therefore create additional investment opportunities.

Fuji Electric France can help you to install monitoring systems that will effectively measure and collect energy usage data. Our solutions are based on normative guidelines (ISO 5167, MID, ISO 50001, etc.).

ISO 50001 sets out a framework of requirements designed to enable industries to:

- Draw up a policy for more efficient energy use
- Set targets and objectives to implement energy policy
- Relying on data to better understand energy use and consumption, and make appropriate decisions
- Measure results
- Analyse the effectiveness of the energy policy
- Continuously improve energy management



Energy optimisation of industrial processes

Our solutions: Measurement, Display, Monitoring/optimisation of consumption

Steam	Fuel	Electricity	Refrigeration	Air
Uses <ul style="list-style-type: none"> • Saturated steam • Superheated steam • Steam condensate • Flash steam Sources of potential savings <ul style="list-style-type: none"> • Reduction of leaks • Improved purging • Isolation of out-of-service networks • Maintenance of purge system • Improved control and use • Reduced heat losses 	Uses <ul style="list-style-type: none"> • Natural gas • Domestic fuel oil • Heavy fuel oil Sources of potential savings <ul style="list-style-type: none"> • Combustion optimisation • Efficiency calculation • Consumption monitoring 	Uses <ul style="list-style-type: none"> • Measuring active and reactive energy, active reactive and apparent power, power factor and current, voltage and frequency, etc. Sources of potential savings <ul style="list-style-type: none"> • Improvement of network settings • Load distribution • Optimisation of sources of consumption • Modernisation of equipment, motors, inverters, etc. 	Uses <ul style="list-style-type: none"> • Refrigerants • Heat transfer fluids Sources of potential savings <ul style="list-style-type: none"> • Monitoring of thermal exchanges • Monitoring of clogging • Optimisation of maintenance operations • Monitoring of COP* <p>*Coefficient of performance</p>	Uses <ul style="list-style-type: none"> • Measuring the volume and mass of air flows Sources of potential savings <ul style="list-style-type: none"> • Monitoring leaks • Optimisation air network maintenance (monitoring level of clogging of the filters, etc.) • Maintenance of the lowest possible pressure level • Monitoring



A real benchmark for your optimisation strategy

Our energy audit is based on a methodical and rational approach that allows you to obtain a detail map of the energy you consume by your production tool. The different audit phases must be implemented in conjunction with the relevant technical managers, project managers, etc.

Utilities

Steam, water, refrigeration, compressed air, fuel, etc.

Processes

Ovens, reactors, sterilisers, etc.

Ambient temperature control

Cold storage rooms, premises, climatic chambers, etc.

Electrical equipment

Motors, heaters, air conditioners, etc.

Setting objectives

- Global vision of the Company's energy situation
- Identification of main areas for potential savings

Actions & results of energy audit

- Reduction of production costs
- Increased productivity
- Improvement of quality
- Reduction of pollutants
- Implementation of energy efficiency management system
- Promotion of image as a socially responsible company



Detailed analyses

- Areas for potential savings
- Mapping out of energy needs
- Quantitative/qualitative image of production and evolution cycle over time via measurement campaigns
- Definition of progress and work axes

Solutions & actions

- Corrective actions agreed upon by all parties involved
- Evaluation of investment costs/desired return on investment

Today, national and European regulations are converging towards common objectives: reduction of greenhouse gas emissions (GHG), increase in renewable energies and, above all, an increase significant boost energy efficiency. All industrial sectors are affected. The methods being used in each country and industry are different, calling for a flexible approach that has been designed for your specific requirements.

Measurement plan

The measurement plan is drawn up in line with your industrial activity, ensuring that measurements are conducted in accordance with the extent of your consumption. Designed using information collected during the energy audit, this plan facilitates a level of development specifically adapted to your priorities. As such, energy losses are identified and good practice in terms of energy use is implemented in line with your budget.

Suitable measurements, a relevant acquisition system, management of your energy costs

Fuji Electric engineers and technicians assist you in drawing up and implementing your measurement plan.

Fuji Electric technologies are designed to measure and optimise energy consumption, allowing you to accurately measure your consumption and emissions, to calculate the efficiency of your installations, to establish energy performance indicators, to optimise your equipment, to improve the regulation of your processes, and to anticipate your needs.



Steam

Steam is primarily used as a source of heat in a wide range of industrial processes.

It is also used for sterilisation, humidification or its pressure energy.

For saturated and superheated steam, it is essential to measure the compensated flow rate in terms of pressure and/or temperature, to record the correct energy.

Industries



Agri-food



Chemical - petrochemical



Energy

Create Smart Data

- Calculating energy with standardised measurements
- Establishing relevant performance indicators
- Monitoring equipment performance

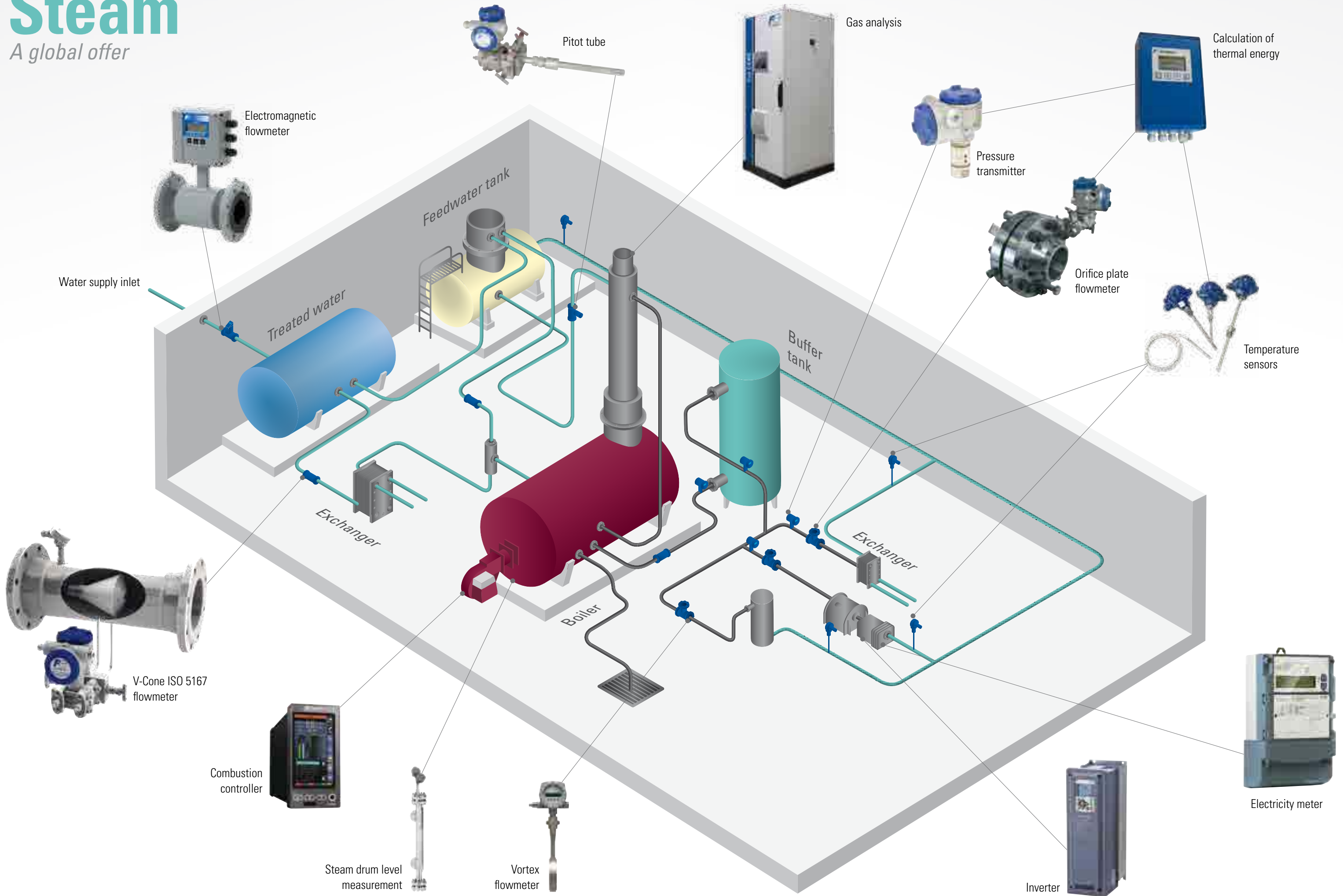
Normative guidelines ISO 5167

Measurements

- Mass flow rate, volumetric flow rate and energy flow rate
- Pressure
- Temperature
- Gas analysis

Steam

A global offer



Fuel



Gas and fuel oil are primarily used to produce heat in industrial processes.

Hydrocarbons are used as raw materials in the chemical industry.

Industries

Chemical, pharmaceutical, agri-food, engineering, automotive, raw material, environment and energy industries, etc.
All industrial sectors use fuels in their manufacturing processes.



Pharmaceutical industry



Oil & Gas



Energy

Create Smart Data

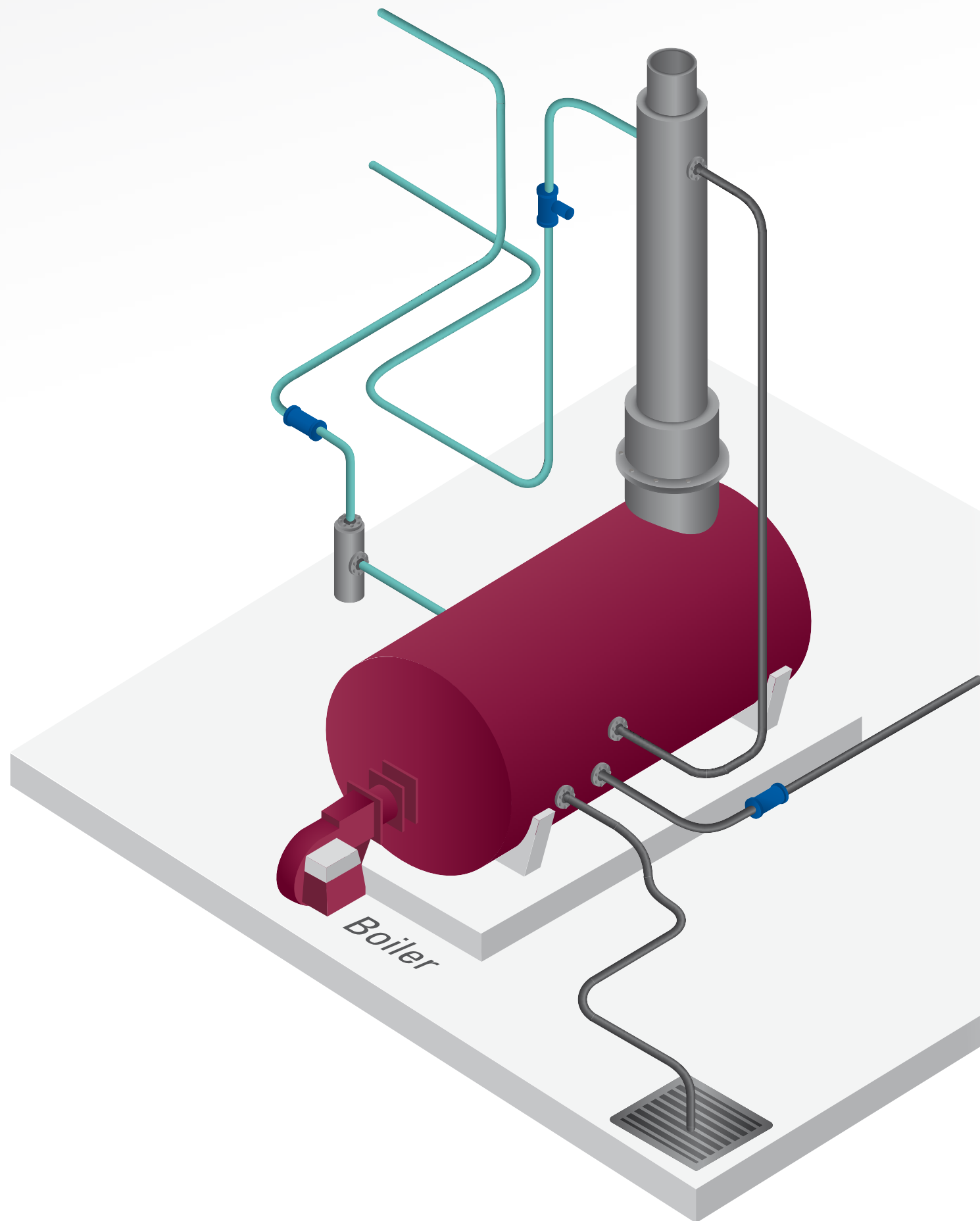
- Measuring fuel consumption
- Monitoring waste compliance
- Optimising combustion
- Establish performance indicators

Measurements

- Fuel oil and hydrocarbon flow rate
- Gas flow rate
- Pressure
- Temperature
- Combustion regulation
- Analysis

Fuel

A global offer



MID-approved PTZ gas corrector



Combustion gas analysis



Detection of dust



Fuel oil mass flow measurement



Temperature controller



Humidity measurement



MID-approved mechanical meter



Combustion controller

Electricity

Since the introduction of competition within the electricity market, it has become more necessary than ever to accurately determine our energy needs, in order to negotiate the best rates possible.

Industries



Agri-food



Chemical - petrochemical



Energy

Create Smart Data

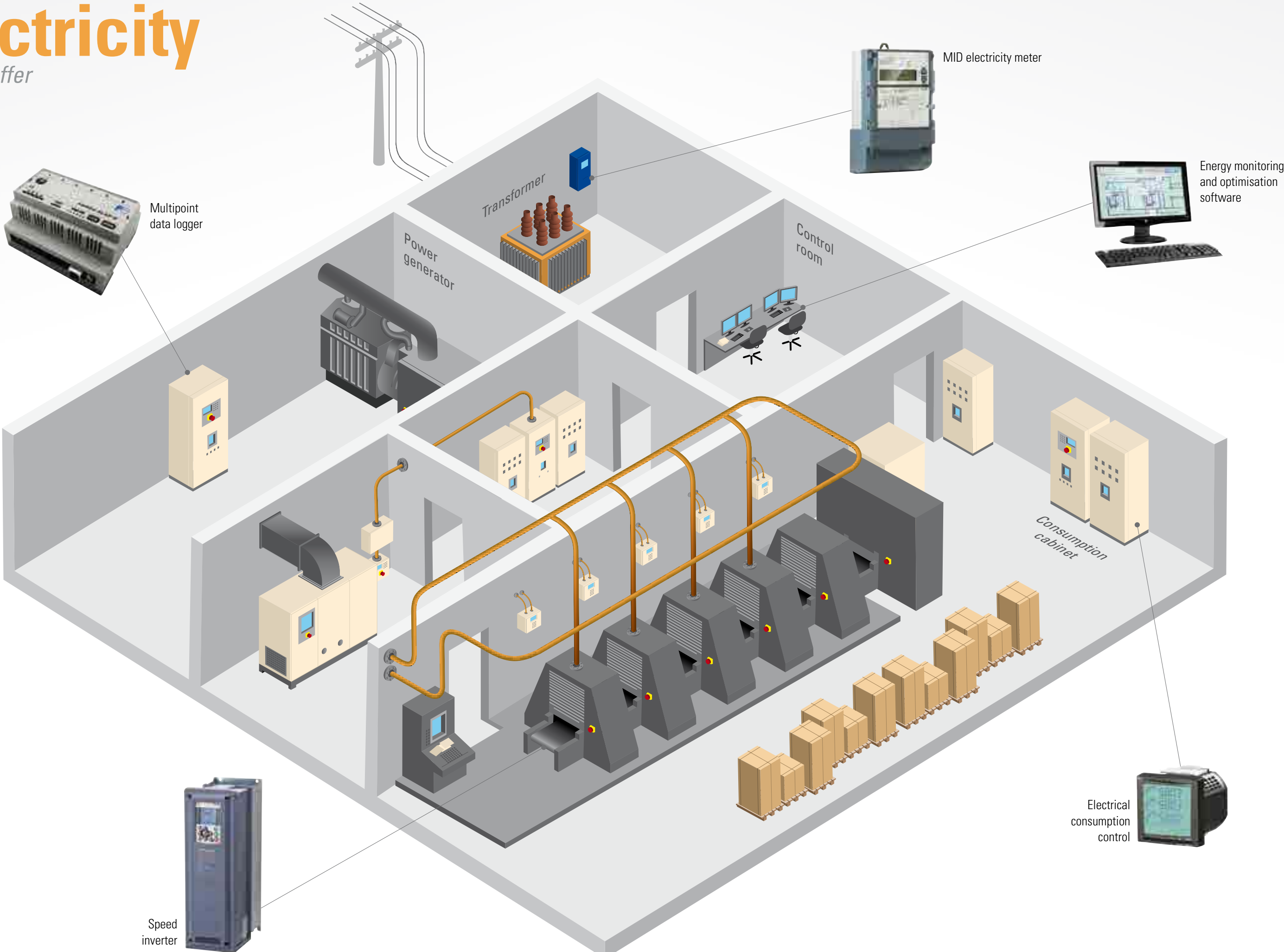
- Measuring electrical consumption
- Analysing and distributing consumption
- Establish performance indicators
- Monitoring performance indicators

Measurements

- Electricity metering centre
- Subdivision meter
- Transactional electricity metering

Electricity

A global offer



Refrigeration

Industrial air condition and refrigerant systems are used in a wide range of industries, including heating and ventilating.

However, the agri-food industry is the largest user of refrigeration, accounting for as much as 57% of the sector's electricity consumption.

This is followed by cooling systems (cooling circuits in industrial processes, data centres, public buildings, etc).

Industries



Pharmaceutical industry



Agri-food



Energy

Create Smart Data

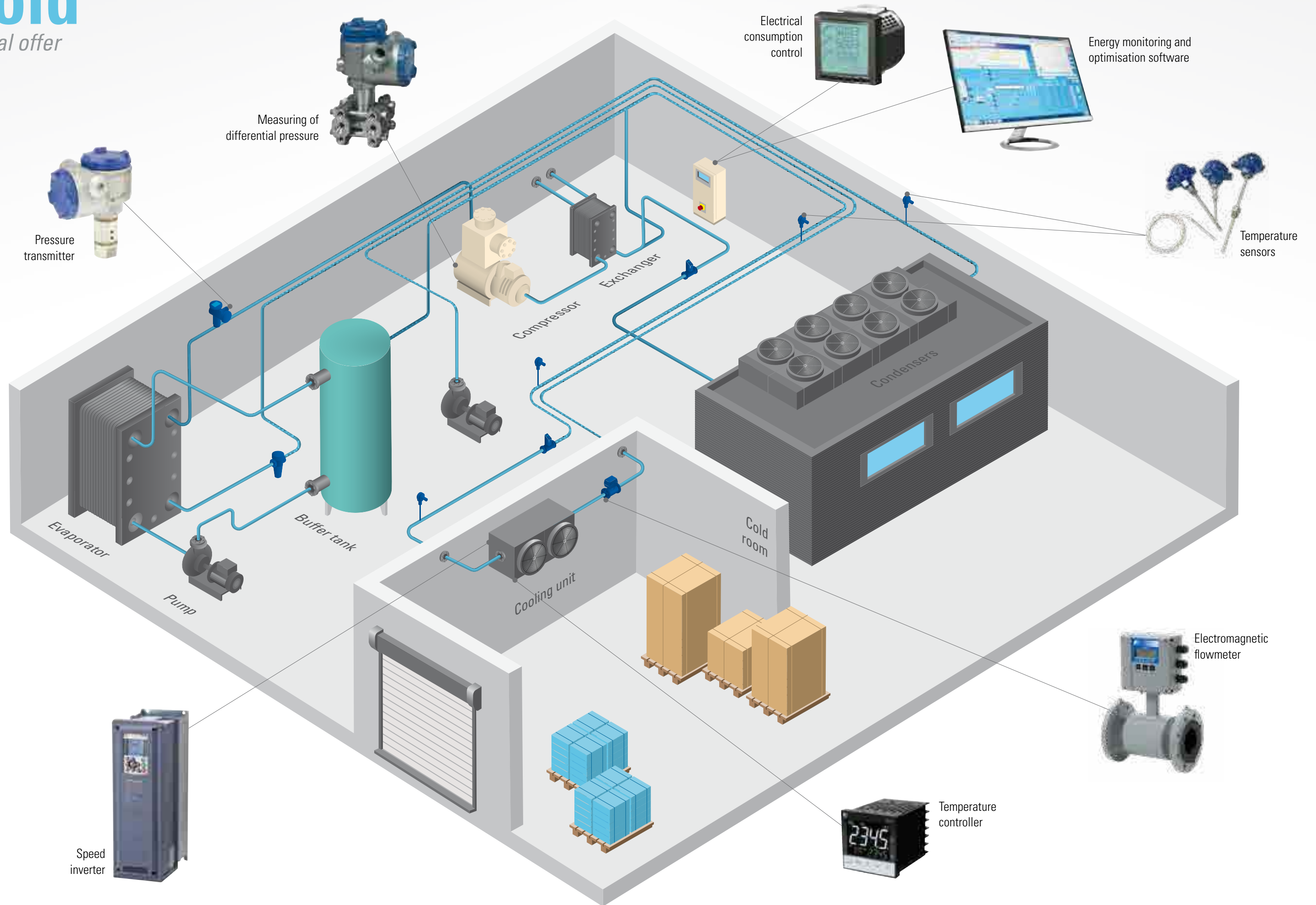
- Measuring of electrical consumption
- Monitoring of performance indicators
- Performance optimisation

Measurements

- Flow rate
- Pressure
- Temperature
- Electrical metering

Froid

A global offer





Air

Compressed air accounts for 11% of all electricity used by industry.

This is an extremely expensive process with an energy conversion rate of less than 10%.

Significant savings of 15% to 30% can be achieved in the running cost of compressed air networks, if they are managed using accurate consumption figures and targeted performance indicators.

Collecting, analysing and exploiting accurate air consumption data, and choosing and establishing relevant performance indicators can produce significant savings of between 15% and 30%.

Industries

These savings are available to a wide range of industries including, glassworks, smelting plants, plastic, automotive, chemical, agri-food and engineering industries etc. For these industries, mastering the management of air networks is essential.



Glassworks



Mechanical



Smelting plants

Create Smart Data

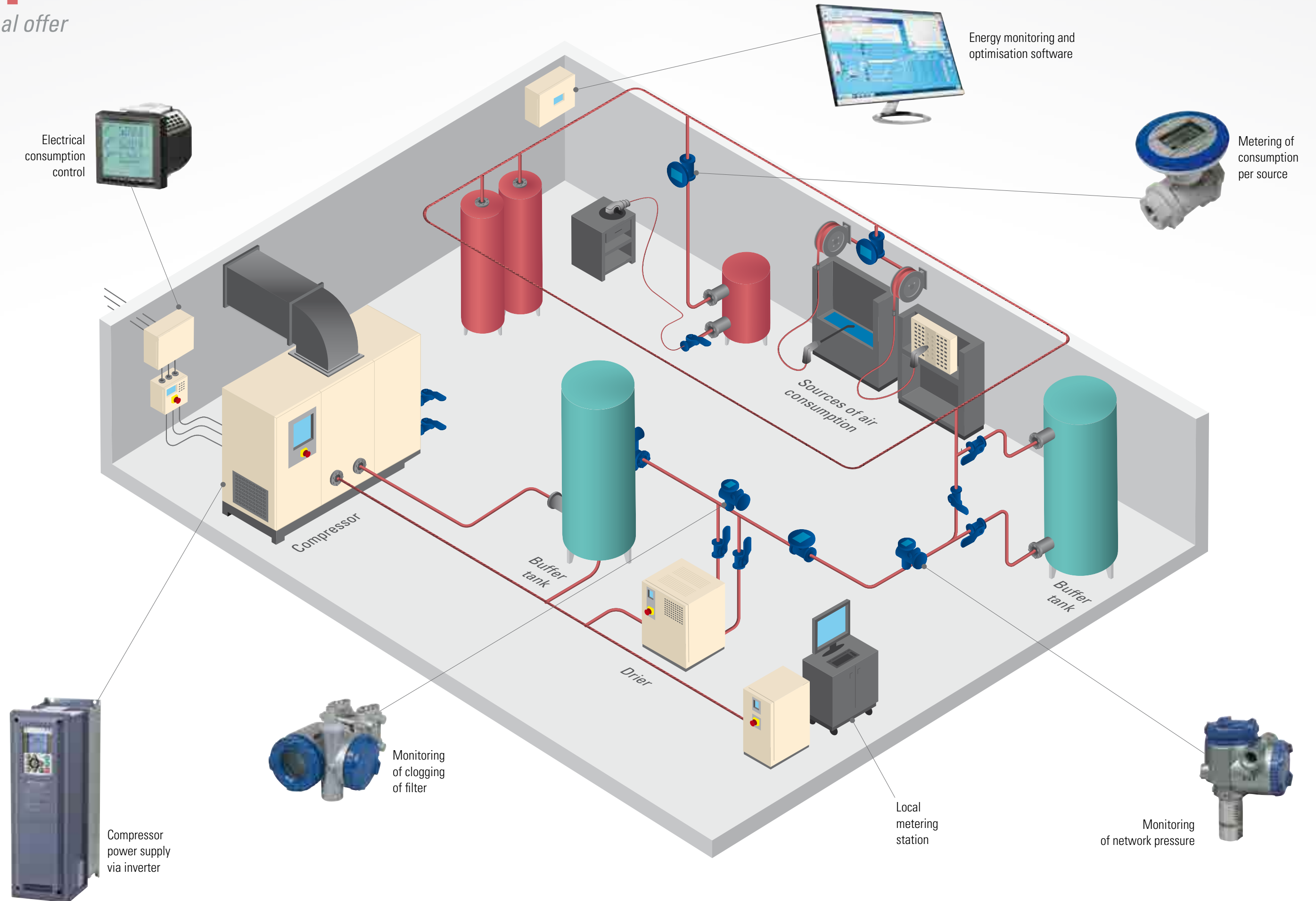
- Measurement of standardised flow rates
- Measurement of electrical consumption
- Monitoring of network pressure
- Monitoring of compressor efficiency
- Establish performance indicators

Measurements

- Flow rate
- Pressure
- Temperature
- Electrical power

Air

A global offer



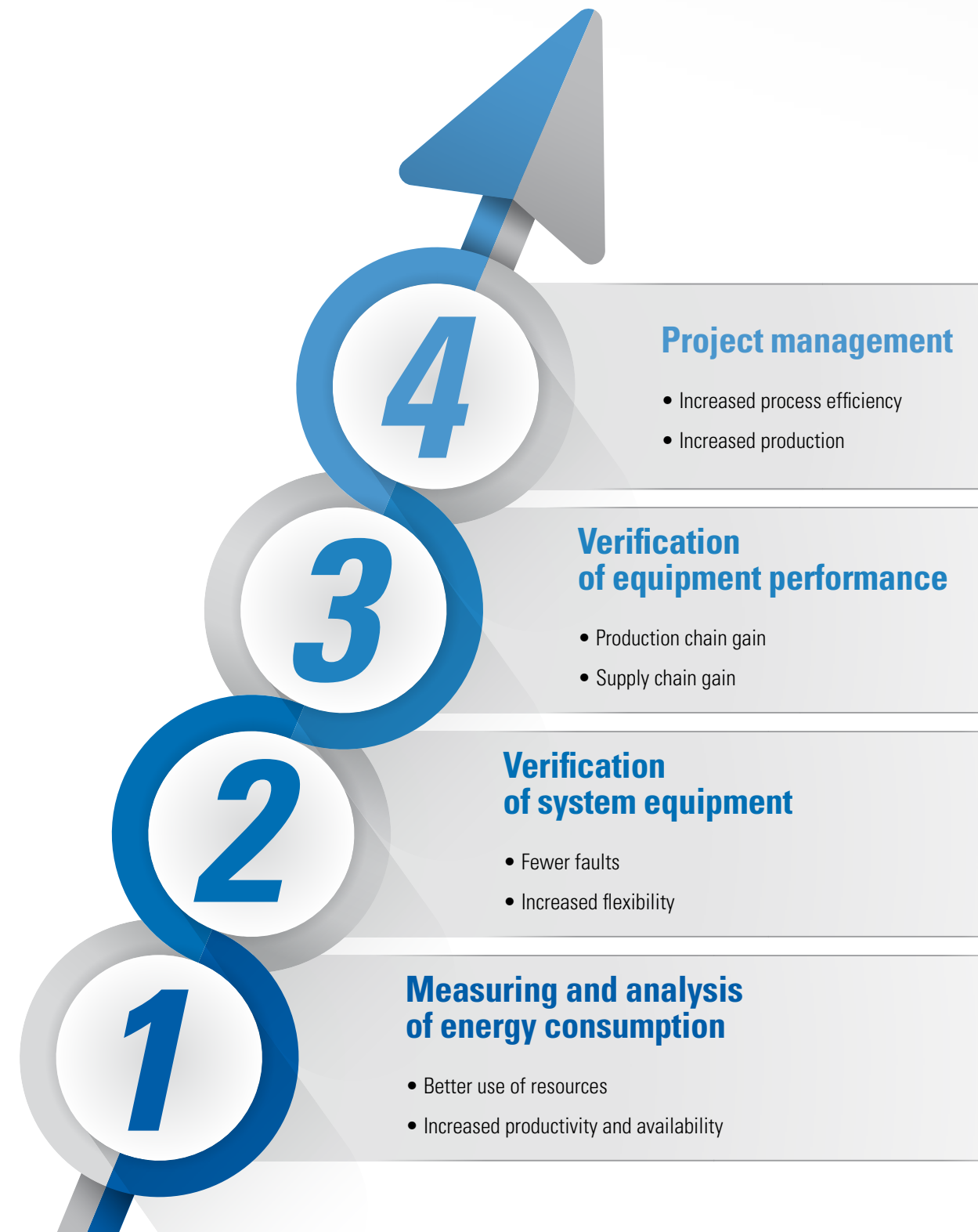
MONITORING AND DATA ANALYSIS



Software for consumption and process optimisation

By monitoring and analysing energy data, we are able to significantly improve the consumption and running of your installations, and help to perfect your processes.

Fuji Electric's Energy Management System (FEMS) software uses proven technologies that take into account the consumption characteristics, and the energy storage and production of each specific industrial site. By combining and analysing the collected data (via an information processing procedure using large databases), we are able to optimise energy performance.



OPTIMISATION OF ENERGY EFFICIENCY

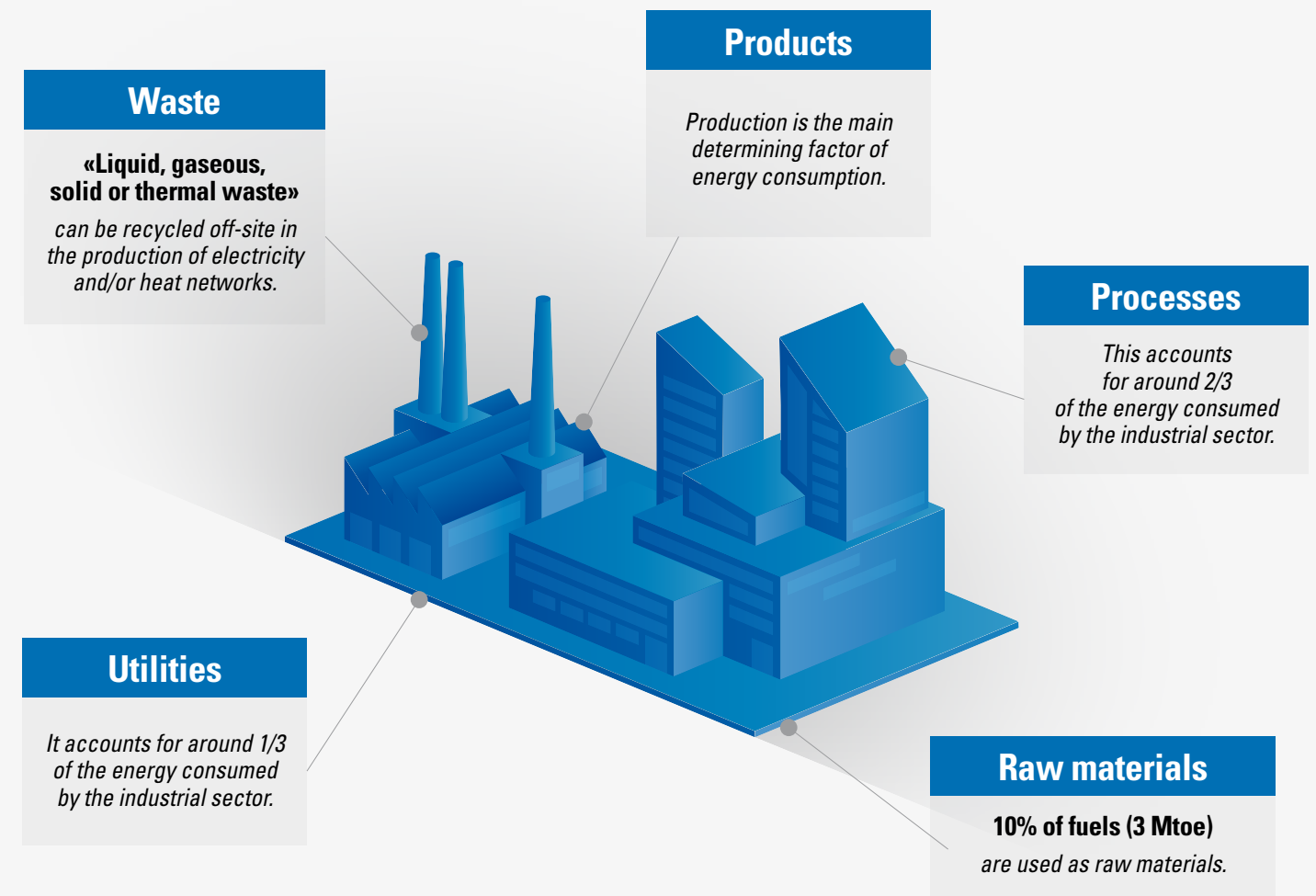
Ensure an accurate and continuous monitoring of your consumption

Energy performance indicators are drawn up using your data. Providing an accurate gauge of the working condition of your equipment, energy performance indicators allow you to accurately and continuously monitor your consumption, to detect any possible deviations or malfunctions, to anticipate failures, and to optimise maintenance operations, etc.

Committing to an energy optimisation plan means:

- Freeing up financial resources and allocating them to the development of your core business
- Boosting performance levels
- Obtaining complete management of your utilities
- Continuously improving the performance of your production processes

Industry energy losses



Fuji Electric expertise to optimise results

- Optimisation of energy use
- Upgrading of production installations
- Redirection of resources to product manufacturing
- Optimisation of energy supply networks



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