

# STEAM SOLUTIONS

For steam boilers, burners, water treatment,  
ancillaries and services: Babcock Wanson  
has the complete solution



**Babcock**  
**Wanson**

## STEAM SOLUTIONS

Always at the forefront of innovation, Babcock Wanson has developed a unique global know-how in the design and manufacture of pressure equipment, industrial burners, water treatment and industrial process heaters.



Design and manufacture of:

- Pressure equipment
- Combustion equipment (burners)
- Water treatment solutions
- Control and regulation systems



Assistance and expertise in:

- Consultancy and energy audits
- Maintenance and monitoring
- Technical assistance
- Repair and refurbishment

## Energy Efficiency

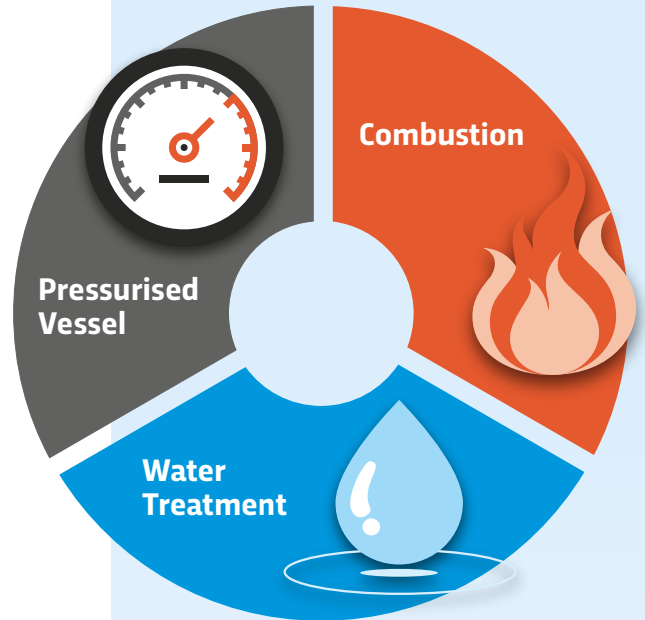
Our overall technological knowledge of the boiler room guarantees the match of all system components and helps optimise investment and operating costs.

- Continuous development of new energy-efficient products
- Complementary boiler technologies
- Perfect matching of the burners with the heated vessel
- Water treatment adapted to the quality of the water available
- Boiler room optimisation services

## Environmental Impact

Our environmentally friendly features are key to helping you reduce your impact on the environment.

- Babcock Wanson boilers comply with and often exceed current performance regulations
- Fuel savings
- Reduced electrical consumption
- Low level of flue gas pollutants
- Reduced noise



Babcock Wanson offers a unique experience by combining:

- **Innovative products**
- **Local service and expertise**
- **Digital technology**



## Complete product range for the Industrial Boiler House

Our range of products are designed to ensure you receive the best type of boiler for your requirements, whether you need a steam boiler, a thermal fluid heater, industrial burner or full turnkey solution and package.

The Babcock Wanson product range for your industrial boiler room:



**Industrial boilers**



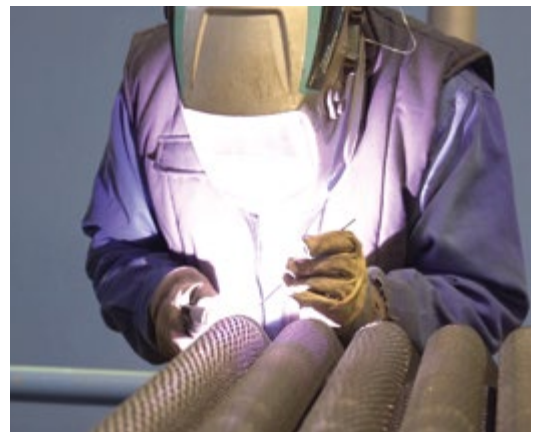
**Industrial burners**



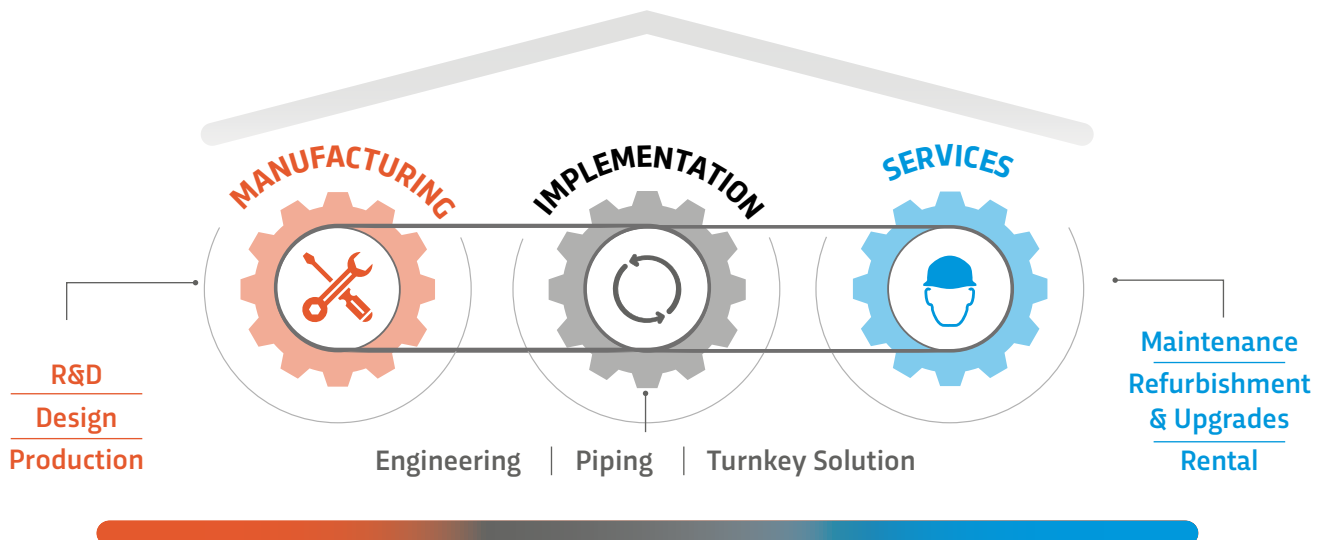
**Water treatment**



**Heat recovery systems**



Babcock Wanson handles all operations in-house from Manufacturing to Services.



## INDUSTRIAL STEAM BOILERS

Babcock Wanson designs and manufactures industrial steam boilers. Our range is the most comprehensive on the market.

### COIL BOILERS

- From 250 kg/h to 10 t/h

This technology enables you to reach a very high level of pressure (up to 120 bars) and is perfectly adapted for a quick steam production (from 5 minutes to get high quality steam from a cold start).



### FIRE TUBE BOILERS

- From 250 kg/h to 58 t/h

The best known and traditional method to produce steam for industrial processes.



### WATER TUBE BOILERS

- From 10 t/h to 90 t/h

Water Tube Boilers are suitable for applications requiring high steam output (up to 90 t/h), high pressure steam (up to 90 bar) or superheated steam (up to 510°C).



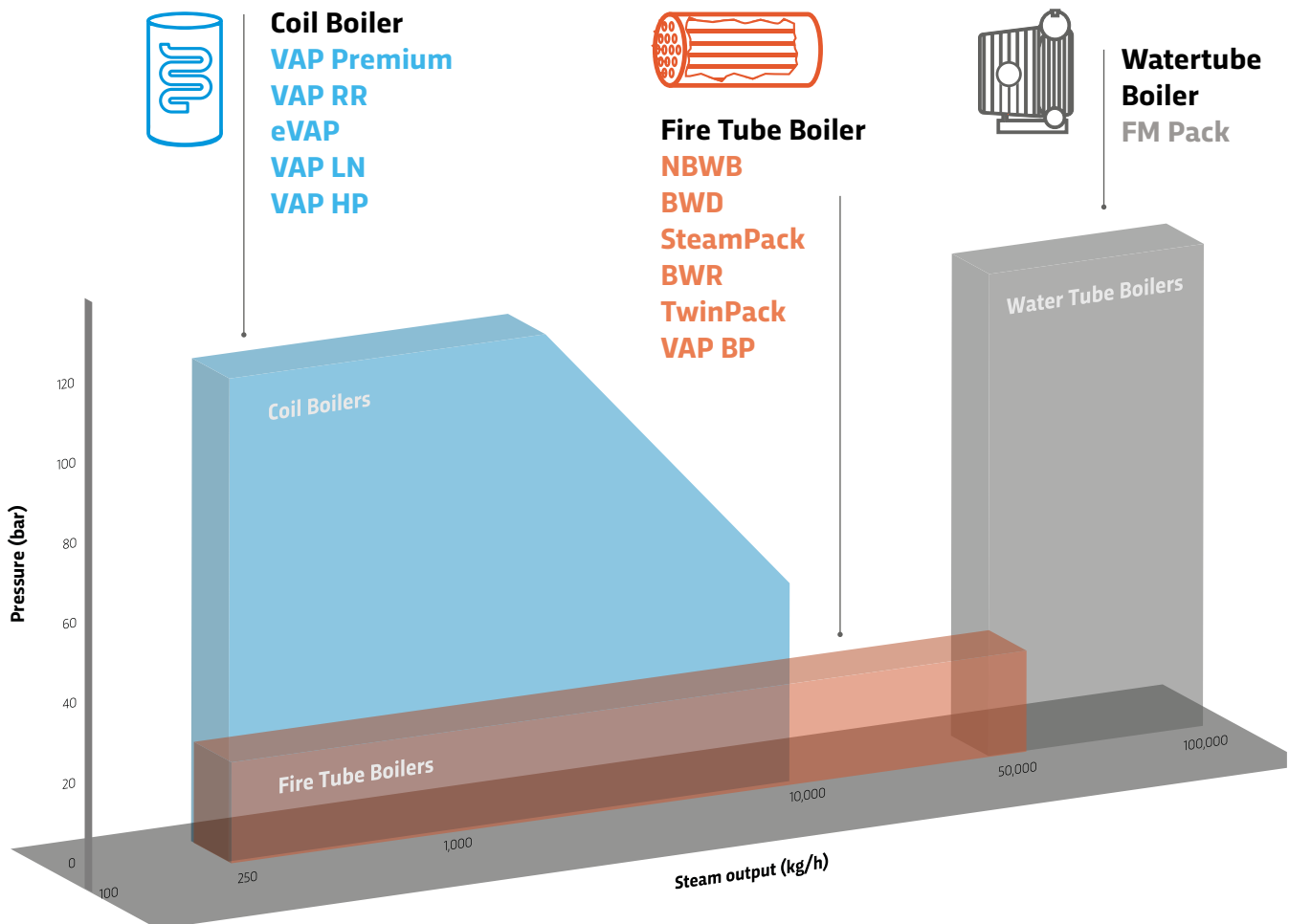
### ELECTRICAL STEAM BOILERS

- From 30 kg/h to 17 t/h

This type of steam boiler can be a very good solution in places where electricity is preferred and readily available.



## Babcock Wanson Steam Boiler Range



Based on your steam production requirements, we provide you with tailor-made solutions to match those needs whilst providing greater energy savings, increased safety and reliability.

- Both **Fire Tube** and **Coil Type Steam Boilers** have the same goal: to produce 'dry' saturated steam to maximise the delivery of heat to the user. Both types of boiler operate along the same basic principles in that water is confined in a restricted space and is heated by burning a fuel source. The energy of combustion is transferred from the flame to the water by radiation and conduction, heating the water and ultimately raising steam. However, the means of heating the water to the point of 'dry' steam are markedly different.
- Water Tube Boilers** provide high quality steam, from dry saturated to high temperature superheated and, due to the heat exchanger design, have the ability to also provide very high operating pressures. They are suitable for applications requiring high steam output, high pressure steam and/or superheated steam.

## BURNERS: A NEW GENERATION OF MICRO-MODULATION BURNERS WITH VERY LOW NO<sub>x</sub>

- Output range from 1 to 22 MW.

**Babcock Wanson designs and manufactures its own burners.**

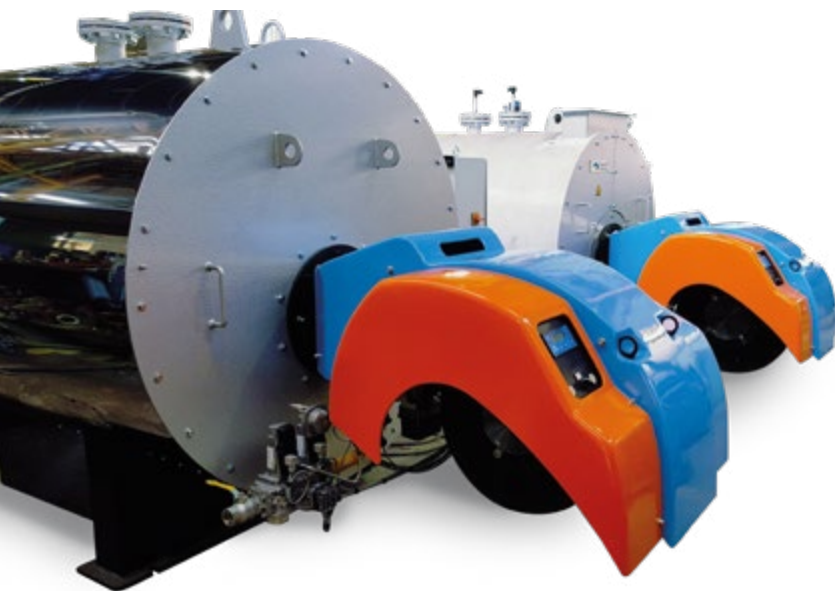
These burners enable very low emission rates to be achieved (NO<sub>x</sub>, CO<sub>2</sub>, particulates...) and offer very low noise emissions; always below 85 dB.

**The latest generation of Babcock Wanson modulating and micro-modulating burners** offers a particularly wide modulation range, allowing for gains of efficiency and significant fuel savings associated with excellent environmental performance.

### Advantages

The overall technological mastery of the boiler room guarantees the perfect match of the system components and optimises investment and operating costs.

- Optimum synergy of burner / heating body
- Technical support with warranty extension up to 6 years
- The CE marking covers the entire boiler / burner assembly



- **Energy performance:**
  - Turndown ratio up to 30:1
  - Excess air < 15% throughout the range
  - Very low heat input solution: Thermoslow
- **Environmental performance:**
  - NO<sub>x</sub> < 60 mg/Nm<sup>3</sup> on selected burners
  - Compliant with the most stringent international regulations
- **All liquid and gaseous fuels**

## INDUSTRIAL WATER TREATMENT



A water treatment solution adapted to the quality of the available water source is essential for the long term reliability of a boiler room. Over 60% of boiler failures can be traced back to poor water quality. With a unique experience of more than 60 years in feed water treatment for industrial boilers, Babcock Wanson offers various types of water treatment solutions:

- **Softening**
- **Demineralisation by resin exchange**
- **Reverse osmosis**
- **Electrode-ionisation for ultra-pure water**
- **Thermal degassing and conditioning**

In addition, Babcock Wanson has also developed chemical treatment to meet the need of high quality steam production. Our experts provide an adapted solution for your process and give you access to an easy to use software application for every day follow up of the water quality.



## Smart Products

### Operating Modes

Babcock Wanson can offer from simple attended mode up to exclusive unattended operating mode (up to 30 days).

### Automation

PLC (Programmable Logic Controller) to ensure complete safety intelligence level. BMS (Burner Management System) to ensure a high quality combustion.

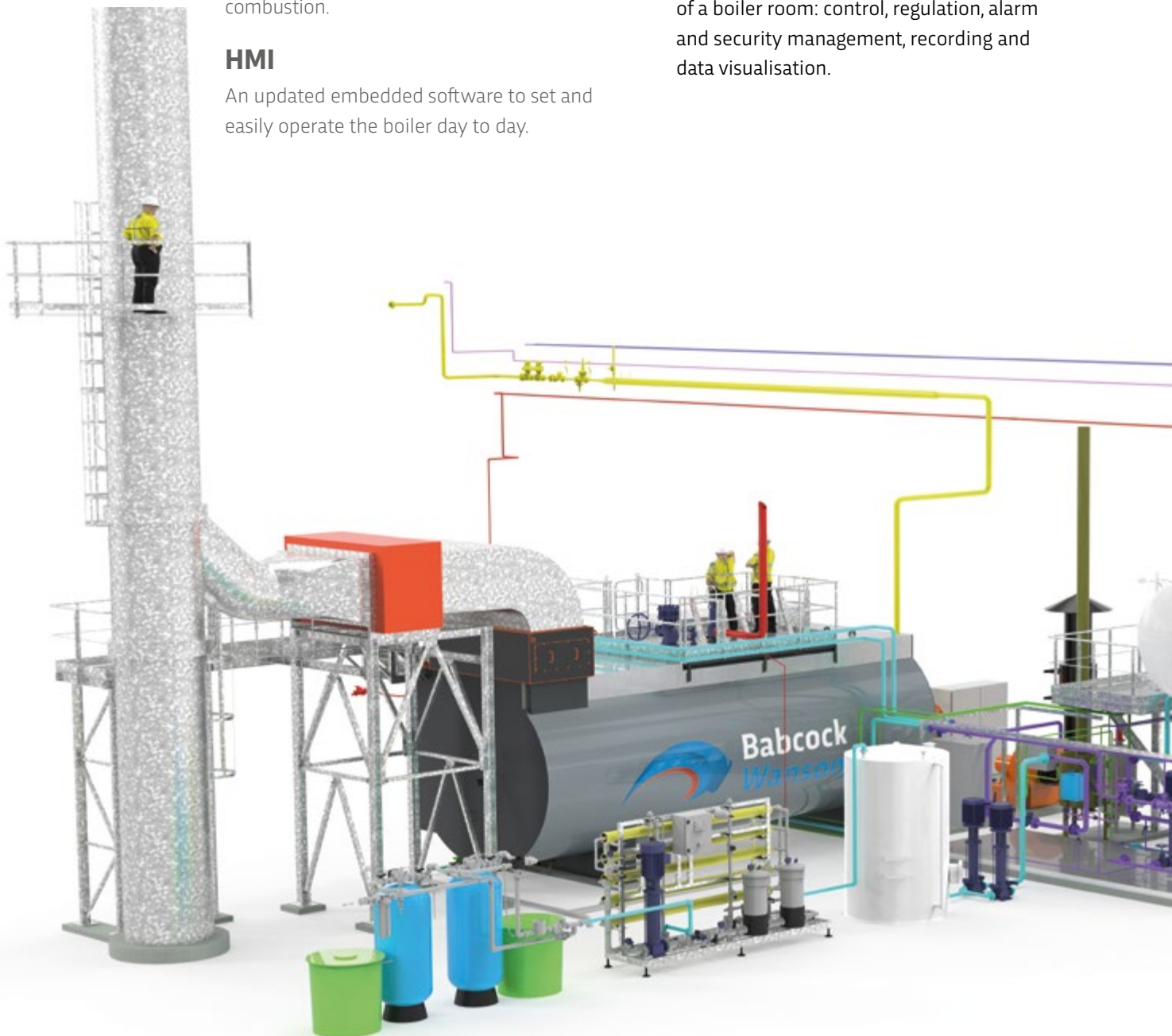
### HMI

An updated embedded software to set and easily operate the boiler day to day.

### Apps

Navinergy and e-Water will help you to be sure your equipment is not slowly drifting toward a breakdown or excess energy consumption.

The Babcock Wanson Operation Assistance Module is the result of the addition of all these functions. It integrates all the components necessary for the supervision and operation of a boiler room: control, regulation, alarm and security management, recording and data visualisation.





## Smart Services

### Tailor made contracts

From periodic visits with performance checking to performance commitment for peace of mind.

### Energy audit

This tool allows you to quantify ROI and positive impacts that would be generated by equipment and operation upgrades.

### Remote assistance & proactive intervention

Based on continuous remote monitoring, we are able to give recommendations and to intervene on site in order to guarantee the proper functioning of your installation.

### Client portal

A platform gathers all data regarding the boiler operation and the follow up work of our technicians. We build your online boiler room for you.

## High Performance

### Heat recovery system

- Economiser: This achieves boiler efficiencies of over 97% throughout the entire modulation range.
- Combustion air pre-heater (R-ECO): For installation where there is greater than 90% condensate return, this technology increases the overall boiler efficiency whilst maintaining low NO<sub>x</sub> operation.

### Adapted Water Treatment

- Automatic blow-down linked to conductivity measurement enables you to reduce energy waste.
- Reverse osmosis and smart water treatment enables you to secure your facility long term (over 60% of boiler breakdowns are due to poor water quality).

### Optimised combustion

- High combustion efficiency makes it possible to have low emission levels and high efficiency.
- Low power solution thanks to a low excess air (O<sub>2</sub> and CO control), high turn-down ratio with variable speed control of the combustion air fan.





#### After Sales

Our extensive team of Service Engineers are fully qualified and trained to respond to any service needs related to your boiler house.



#### Boiler Refurbishment

We offer attractive refurbishment and upgrade services for all steam, hot water and thermal fluid boilers and all of your boiler house installation.



#### Maintenance Contracts

We offer a complete range of preventive and corrective maintenance contracts that can be tailored to your needs.



#### Replacement Spare Parts

We provide our customers with a stock of over 30,000 spare parts and guarantee the repair of all breakdowns with minimum delay.

## SERVICES

### Maintenance Contracts

Babcock Wanson has developed a complete range of contracts for preventive, curative and predictive maintenance. Tailor-made contracts are proposed according to how critical the process is: from simple periodic visits to comply with regulation needs up to remote monitoring with proactive visits to the boiler room and spares backup.

Babcock Wanson provides you with peace of mind when it comes to the operation of an industrial boiler room.

### Spare Parts

Babcock Wanson holds stock of more than 30,000 component parts, to ensure repairs for all types of breakdowns or incidents within a very short period of time.

### Rental

Babcock Wanson's rental department has the means and logistics to respond very quickly to the needs of production sites faced with planned or unplanned requirements for replacement of boilers.

Our fleet is equipped with more than 200 rental boilers from 90 kW mobile boilers to 12,000 kW output. All fully approved with EC standards.



## The Training Centre

Optimising the operation of a boiler room also requires training of site personnel. As a certified trainer, Babcock Wanson offers exclusive inter or intra-company courses, developed with clients.

Our training sessions will teach the day to day operation required to ensure the long term safety, reliability and efficiency of your industrial boiler room. Steam, water or thermal fluid system are part of our training, as well as water treatment follow up and combustion settings.

Approximately 350 trainees attend Babcock Wanson training courses every year.



## DIGITAL SERVICES

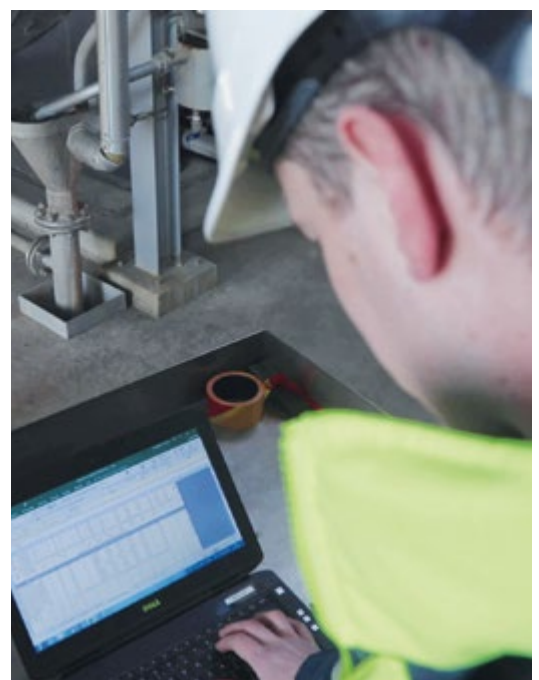
### Navinergy

Based on continuous remote monitoring, this unique and innovative system enables our clients to monitor their boiler room from any device. Whether on the boiler's HMI or from a smartphone on the other side of the World, an operator is able to monitor the proper operation of the boiler room. Babcock Wanson is able to base its service offering on this system and thus move towards predictive maintenance with very high performance commitments.



### e-Water / Digital Portal

This water quality monitoring software is essential to avoid boiler breakdowns. With e-Water (available on any mobile device), operators are able to determine if the quality of the water is acceptable. If not, corrective actions are proposed by the application. In case of major problems, a Babcock Wanson expert can also be consulted to take proactive measures to fix the problem.



## Locations & Contacts

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