THE BOILER HOUSE SOLUTION
SERVICES

Energy optimisation

Ecosteam® Audisteam®

Energy and environmental optimisation

To make:

- fuel savings
- reduced electrical consumption
- low level of flue gas pollutants
- reduced noise
- reduction in operating costs

Babcock Wanson offers many optimisation solutions, particularly the Ecosteam® pack, suitable for the BWS and BWR series. Thanks to the new Audisteam® software, BABCOCK WANSON can help to value the potential savings and highlight the best solutions for industrial.

The ECOSTEAM® Solution

◆ Low-NOx burners

BABCOCK WANSON investment in R&D has enabled the development of a new burner head geometry which:

- improve the distribution of the fuel within the flame reducing the production of NOx ;
- reduce the excess of air increasing the efficiency of the boiler.

◆ Flue-gas economisers

1/ Flue-gas economiser, removable cartridge exchanger mounted in the rear smoke box of the boiler.
This solution, which is suited only to gas, provides an efficiency increase of 4 to 5 % depending on the temperature of the feed-water. The return on investment may be obtained in less than 1 year* ;

2/ Flue-gas economiser, casing-mounted on the flue-gas outlet.
This solution is applicable for NG / fuel-oil combined-fuel applications, or if greater energy recovery is required. In this case, the economiser has a larger exchange surface and can no longer be incorporated in the rear smoke box. The efficiency increase is 5 to 6 % ;

3/ Flue-gas economiser plus heat exchanger on the feed-water.
This solution provides a boiler efficiency of up to 96%. Certain conditions are necessary in order to apply this process: the presence of a thermal de-aerator and a cold feed make-up source, and a low condensate return rate of less than 70 %.
The investment can be recovered in less than 1 year* ;

4/ Flue-gas economiser, plus water / combustion air exchanger.
This solution is applicable to processes with 85 to 90% condensate return, and steam production above 15 t/h. The principle is to heat the combustion air up to a temperature of 80°C. This limit is imposed by the thermal NOx generating threshold.
The efficiency increase is 6 to 8%.
The investment can be recovered in less than 2 years*.

◆ Electronic fan speed control

- suppression of interference on the electrical network at start up,
- significant reduction of noise level at low load,
- reduced maintenance by replacing the fan pulleys and belts with a direct drive
- reduced electrical power consumption:

by reducing the fan speed by 20%, the air output is also reduced by 20%, but the electrical power consumption is reduced by 50%. Substantial reductions in operating and maintenance costs.

** These value varies according to the size and annual operating time of the boiler*

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◆ Re-injection of condensate into the boiler with zero flash

The aim of re-injecting the condensate under pressure is to keep them at a high pressure and temperature in order to save maximum heat energy. The installation will include a re-injection drum under pressure and a feed pump.
The regulation of the boiler water level is done with the condensate plus water coming from the feedwater tank.
Depending on the operating conditions (return rate, pressure and temperature of the condensate - boiler output) the operating analysis shows an energy saving of 15 to 35% and a saving on water consumption proportional to the percentage of re-injection plus an equivalent reduction in feedwater treatment costs.

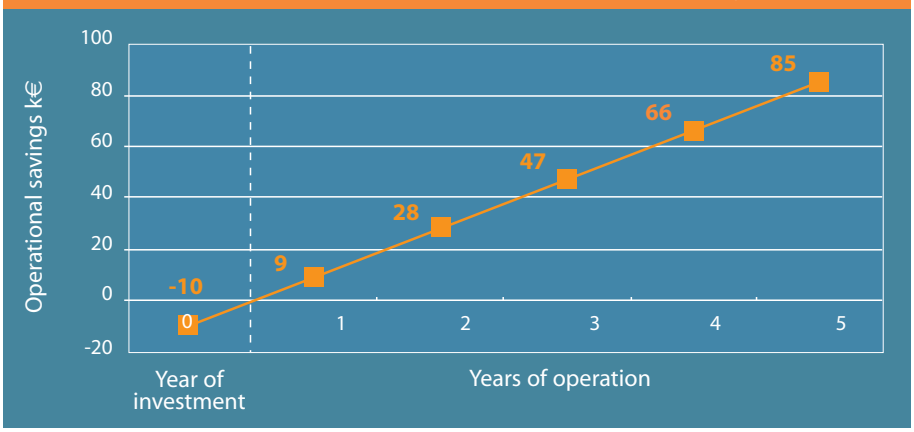
◆ BABCOCK WANSON boiler water treatment

BABCOCK WANSON match the feedwater treatment according to the available water (softeners, decarbonation, demineralisation, de-aeration and conditioning products) making possible a reduction of the blow-down rate enhancing improvement of the total efficiency of the boiler house.

Audisteam®

To predict cost reductions associated with equipment and operating improvements, BABCOCK WANSON have developed a boiler house analysis tool which can quantify possible fuel savings before investment. This tool takes into account all the boiler house operating parameters, from water treatment to gas and fluid emissions.

Simulated operational savings on a 7 MW steam boiler with natural gas



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ISO 9001:2000 SGS

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