



oilon[®]

ecosafe

MCPD

FREE
Combustion
Energy Audit

Save Money
Reduce Emissions





The Latest Technology brings Savings

CASE STUDY: Fuel Savings with 6 new Duel Fuel Burners on Three 15t/hr. 3 Pass Boilers

The Problem

Our pharmaceutical customer had a 10t/hr. CHP system which ran three 15t/hr. 3 pass boilers.

The existing burners only achieved a 3-1 turn down, resulting in a low fire boiler output between 5.1t/hr. and 4.5t/hr.

This meant that during the summer months the boiler was constantly restarting, resulting in high fuel costs and components failure.

The solution

The new 'Oilon' fully modulating dual fuel burners were prepared for variable speed drive and achieved up to a 10-1 turn down on gas and 4-1 turn down on oil, enabling a low fire boiler output of 1.5t/hr.

This allowed the boilers to map the site load and greatly reduce burner cycling, as well as operating at reduced oxygen levels throughout the modulation range which resulted in fuel savings.

The Result:

The improved turn down meant the burners were monitored continuously, adjusting to the varying loads throughout the day.

Additional savings were achieved through 'Ecosafe', our digital burner management system with electronic modulating control to allow air/fuel ratio control of the air and fuel drives. This included motors for the air inlet damper and gas butterfly valve, giving an accuracy to 0.1 degrees angular.

Boiler mounted control panels were pre-wired for the primary components.

Environmentally Friendly Energy

Oilon Low-NOx natural gas burners for 80 mg/nm³ (on gas only) fulfill the requirements of emission class 3 (EN 676). Low NOx emissions are achieved by new and innovative gas and air distribution and staging in the combustion head.

NOx emissions are also reduced by creating back flows to the combustion head in order to reduce flame peak temperatures and flame reaction speed. Low emission values depend on the furnace geometry, the furnace load and the medium temperature in the boiler. Low NOx-levels are mainly achieved on 3-pass boilers.

Energy Efficiency and Decreasing Emission Levels

Oilon are specialists in environmental technology, particularly in the area of energy efficiency, decreasing emission levels and developing new solutions using renewable energy sources.

Oilon industrial burners can burn almost all liquid and gaseous fuels and are used worldwide for

producing hot water, steam or hot air in a variety of industrial applications.

Oilon manufacture oil, gas and dual fuel burners for power plants, industrial processes, food processing, chemical, textile, oil, hazardous waste incineration plants and heating plants.

Low Emissions, High Efficiency & Equipment Reliability





As specialists in the industrial steam boiler market, JBC introduced Ecosafe, designed specifically for boiler retrofit applications as part of the burner control system.

Ecosafe are electronic digital controls for industrial steam boilers and burners, designed and proven to improve the efficiency and productivity of your existing boiler without the need for new boiler investment.

Benefits

- Electrical cost savings of up to 50% with the installation of VSD control to FD Fan plus 6% fuel savings
- Save downtime with less breakdowns
- Reduced maintenance costs
- CO2 emission reduction of 1-2%
- O2 emission reduction of 1-2%
- Virtually eliminate existing hysteresis associated with mechanical systems
- Efficiency improvement of 1% on tighter fuel air ratio increasing turndown



Digital Combustion = Cost Reduction

CASE STUDY: £30k Annual Saving with Ecosafe Retrofit Upgrade



JBC designed, installed and commissioned an upgrade from an existing burner system to an 'Ecosafe' simultaneous firing system. The upgrade increased the volume of biogas burned by a massive 25%, saving the company a staggering £30k per year!

maximum waste gas that would normally be flued to the atmosphere.

The system required a different controller and a second oxygen probe as well as replacing the methane metering valve. Two analogue outputs were supplied for modulating/firing rate and available biogas. A digital run signal allowed our customer to monitor not only the boiler firing time but also where in the modulation range the burner operated.

The required components were retrofit and the existing panel modified to allow a Hamworthy burner to operate and burn the

Average (return on investment) usually 12 to 18 months max with one client seeing system payback in 9 months.





Integrated combustion Controller

- Twin furnace boiler applications
- Suitable for single and dual fuel burners
- Programmable 24/7 On/Off set back control
- Fuel safety valve control and proving
- Steam, water, heating and process applications
- Up to 4 fuel/air ratio profiles can be programmed
- Service due indication
- Remote monitoring and control
- Suitable for low NOx flue gas recirculation and firing of 'exotic' fuels
- Choice of communication protocols including RS-485, Profibus and Modbus
- Oxygen trim option using dedicated oxygen probe and interface
- Interfaces to third party flame safeguards
- Integrated gas valve proving
- IR, UV, photocell and ionisation flame scanners supported
- Up to 10 servo motors can be assigned allowing complex applications to be addressed
- Control of two variable speed drives for combustion air and fuel pump control
- Local modulation using Ecosafe or third party boiler temperature or pressure sensors and two internal PID controllers.

... and more!

Save money
reduce emissions

CASE STUDY: Burner installed with Ecosafe at Meadow Foods

Meadow Foods, an existing customer of JBC needed help and advice regarding their boiler efficiency. Following a thorough audit, potential energy saving benefits were identified and implemented.

The existing steam raising boiler plant and the fuel to air ratio control was ageing and proving costly to repair and maintain.

JBC proposed and designed a solution to install the Ecosafe + digital combustion system, alongside forced draught fan variable speed drives, which were incorporated into the new digital system, with downtime kept to an absolute minimal.

Savings

- An improvement in boiler turndown from 3-1 to 6-1
- As a result of 6-1, the burner cycling has been eliminated, therefore vastly improving operating efficiency.
- Up to 50% electrical savings from installation of VSD's.
- Noise reduction due to lower fan operation speeds
- Lower Oxygen operating levels due to increased accuracy within the fuel air ratio control.



A more efficient burner and boiler will save you time, money, maintenance costs and reduce emissions.

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MCPD

JBC have invested time and resources in order to advise our customers on how and if MCPD affects them and what their options are.

Branches in Birmingham, Teeside, Hull,
Leeds, Warrington and the South



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