FOYLE MEATS
MELTON RD
SIX HILLS
MELTON MOWBRAY
LE14 3PR

Environmental Permit Application

Emissions to Atmosphere

Document Ref: Attachment B.3.2

1.0 SUMMARY LIST OF ALL EMISSIONS TO ATMOSPHERE

A summary of all emission points to atmosphere within the site is presented within the tables below.

A site map, indicating the point sources and fugitive sources emission points, is also detailed in Appendix A.

2.0 POINT EMISSION SOURCES

There is one item of equipment on-site that would be considered to be emission point source to atmosphere:

- 1 x LPG fuelled hot water generating boiler.

Periodic visual assessment takes place to ensure emissions are colourless, free from persistent trailing mist or fume and are free from droplets.

Table 2.1: Foyle Meats – Melton Mowbray Boiler Data

Ref.	Manufacturer	Function	Model	Output	Thermal Input
B1	Babcock Wanson	Hot Water	HW3P Series	1,165 kW	1,260 kW

This LPG fuelled boiler supplies hot water at 45ºC & 85ºC to the entire site and is located within a small structure off the main facility to the front of the site.

Figure 2.1: Hot Water Boiler B1

3.0 SCHEDULED ACTIVITIES & PERMITTING

As can be seen in Table 2.1 above, the sites combustion plant has a total thermal input of 1,260 KW or 1.26 MW and therefore has a rated thermal input less than 50MW.

As a result of this, the site has not included the following scheduled activities as part of their environmental permit application:

The Environmental Permitting (England and Wales) Regulations 2016,
Schedule 1: Activities, Installations and Mobile Plant,
Part 2: Activities,
Chapter 1: Energy Activities,
Section 1.1: Combustion Activities,
Part A(1): (a) *Burning any fuel in an appliance with a rated thermal input of 50 or more megawatts*.

However, the MCP regulations apply to MCP with a capacity more than or equal to 1 megawatt thermal (MWth) and less than 50MWth burning any fuel.

The site water boiler has a thermal input of 1.26 MW and is defined as '*new'* as it was installed in 2020, which is after the transition date of 20th December 2018.

As part of this *Environmental Permit* application, the site is also applying for a *Medium Combustion Plant Permit.*

4.0 AIR EMISSION POINT LOCATION

The boiler exhaust exits from the rear of the structure and passes through the eastern wall of the Boiler House, before travelling vertically, creating a single emission point to atmosphere at a height of 8.0-meters.

Table 4.1: Foyle Meats – Melton Mowbray Air Emission Point Locations

Reference	Emission Point	Location	Grid Ref
AP1	Boiler Stack	Adjacent to Boiler House	SK 64661 20979

Grid Ref Source: https://gridreferencefinder.com/

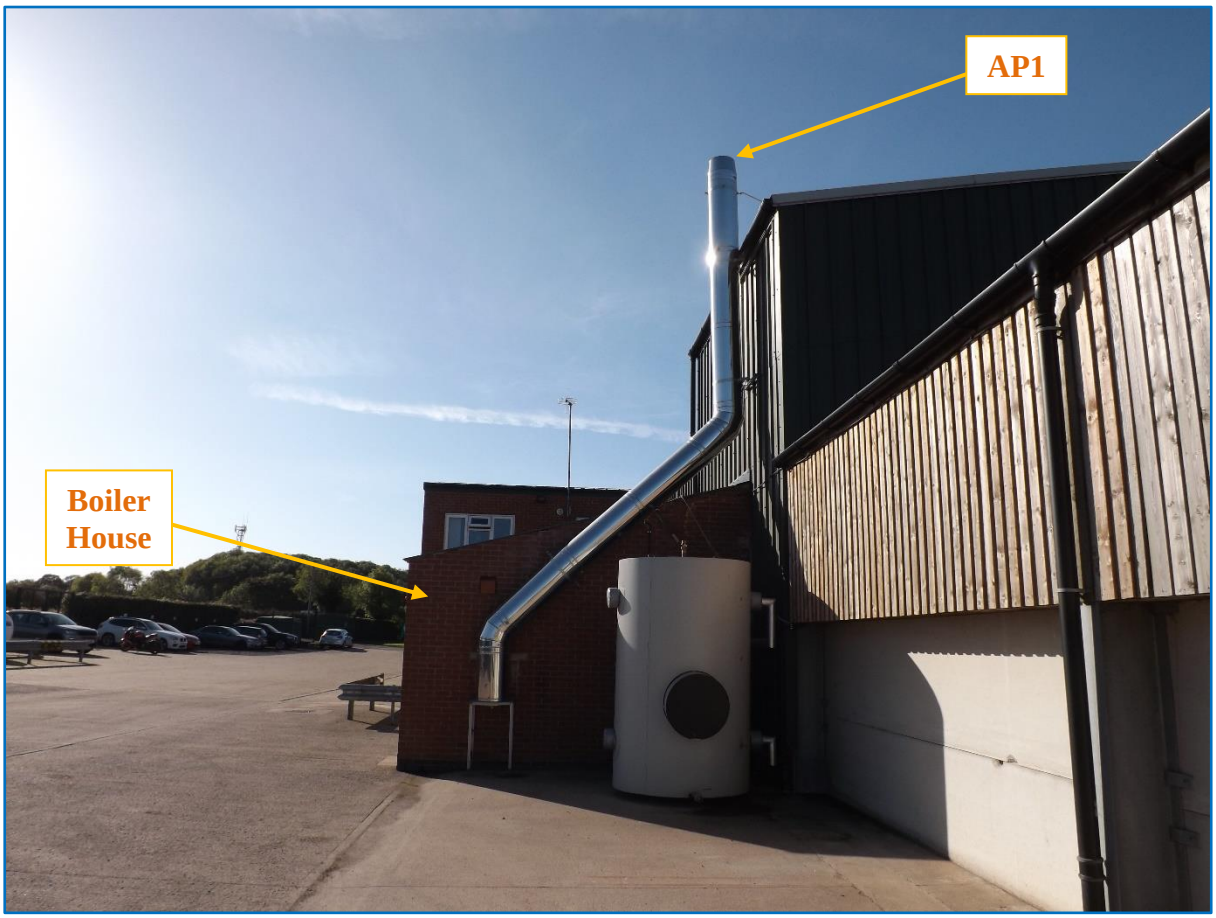


Figure 4.1: Vertical Stack - AP-1 Point Source

5.0 AIR EMISSIONS RISK ASSESSMENT

Stage 1

If each individual MCP is operating outside the minimum screening distances to the habitat sites given in the table, then a lower risk simple bespoke permit can be applied.

If any of the MCP(s) are operating inside the minimum screening distances to habitats given in the table, then it should move to a stage 2 assessment.

Minimum screening distances to the habitat sites

Fuel type used	Rated thermal input (MWth) of any MCP	Minimum distance from MCP to a site of special scientific interest or marine conservation zone in metres	Minimum distance from MCP to a special area of conservation, special protection area or Ramsar wetland in metres
Natural gas, gas oil or woody solid biomass	1 to less than 2	750	750

https://www.gov.uk/guidance/medium-combustion-plant-apply-for-an-environmental-permit

There is only one SSSI within a 5.0km radius of the site. The closest is Twenty Acre Piece SSSI, which is located *c.*160m west of the site boundary.

Therefore, additional screening was required.

Stage 2

Redmore Environmental Ltd was commissioned to undertake an Air Quality Assessment in for the site boiler. This report (ref: Attachment B2-5.3) concluded the following:

"Atmospheric emissions from the plant have the potential to cause air quality impacts during normal operation. As such, an Air Quality Assessment was undertaken in order to determine baseline conditions and consider potential effects.

Dispersion modelling was undertaken using ADMS-6 in order to predict NO2 and NOx concentrations, as well as nitrogen deposition, at sensitive locations as a result of emissions from the boiler.

The results indicated that impacts on pollutant concentrations were not predicted to be significant at any human or ecological receptor location in the vicinity of the site."

6.0 SERVICE SCHEDULE

The site boilers are serviced by Babcock Wanson UK Ltd.
Registered office: 7 Elstree Way, Boreham Wood, Herts, WD6 1SA.
Registered No: 00573874

The boiler undergoes servicing annually.

7.0 FUEL SOURCE

The site boiler is fuelled by LPG, which is stored in 6 x 4,600-litre capacity tanks. The tanks, which are surrounded by a crash barrier, are located adjacent to the site entrance at the site southern boundary and supply the fuel to the boiler via an underground pipe.

Figure 7.1: LPG Storage Tanks

This underground pipe travels vertically just outside of the boiler hut and penetrates the wall at a height of *c.*1.20-meters (see Figure 7.2). Inside the boiler hut at the same location is an emergency shut-off valve and button (see Figure 7.3).

LPG is not toxic to flora, fauna or soil organisms. LPG gas leak effects will not cause long term adverse effects in the environment and is not dangerous to the ozone layer. LPG is not persistent, does not bio-accumulate and unlikely to cause long term adverse effects in the environment. Spillages are unlikely to penetrate the soil. The product is likely to volatise rapidly into the air.

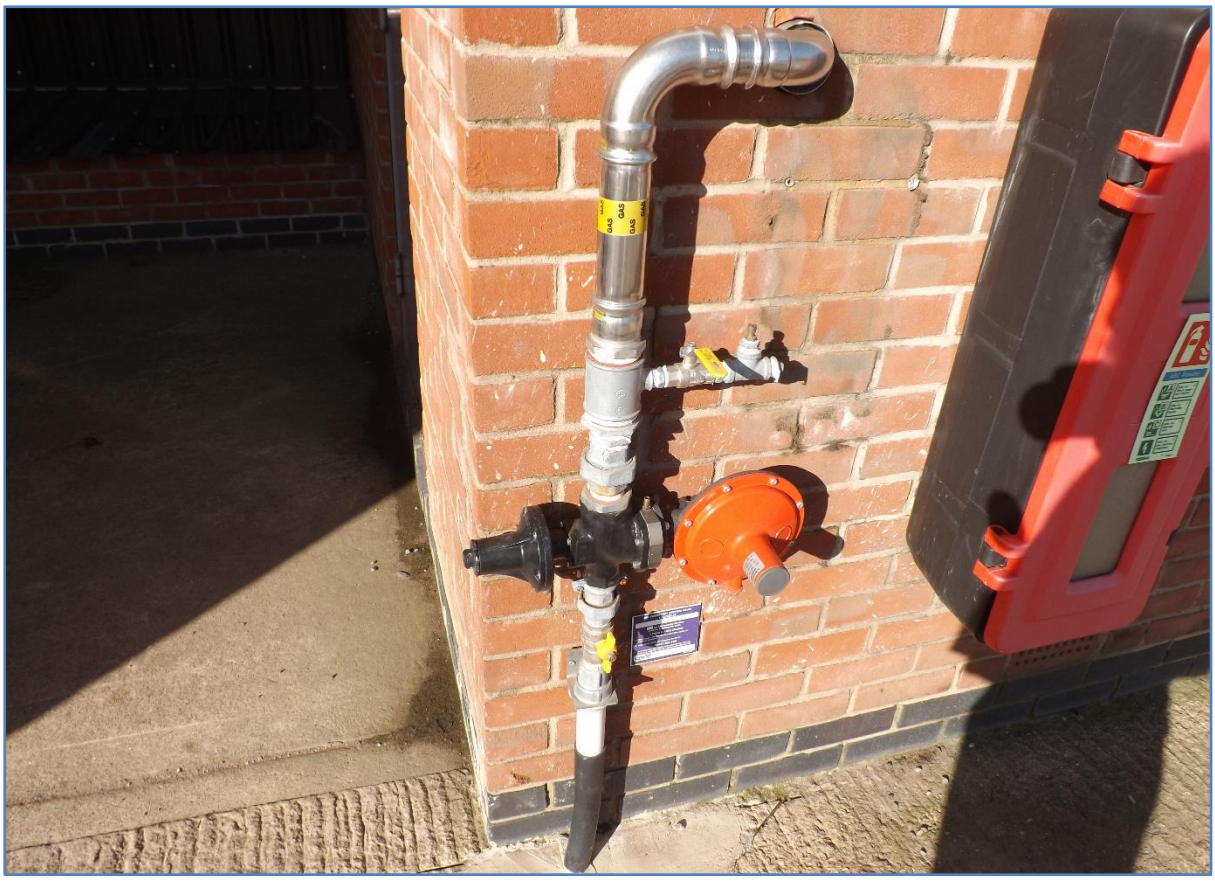


Figure 7.2: LPG Supply Pipe – External

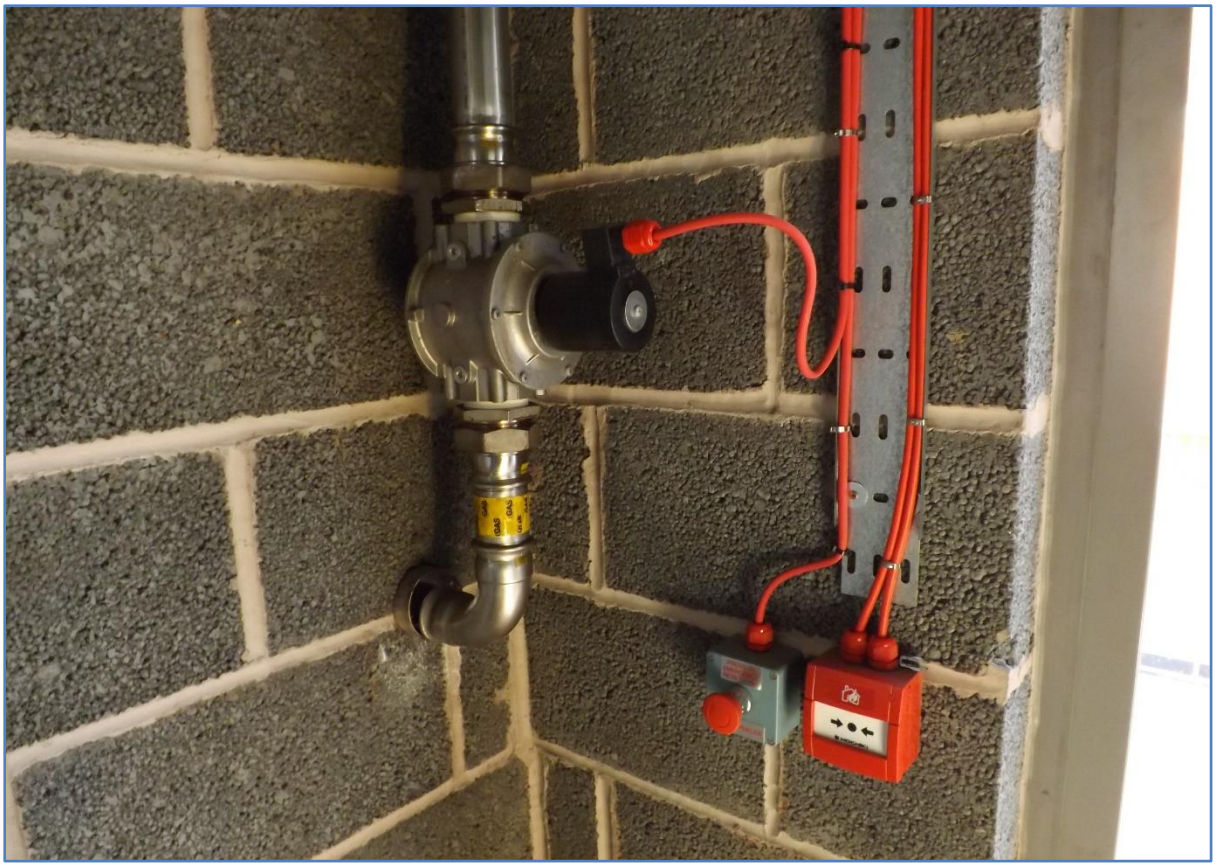


Figure 7.3: LPG Supply Pipe and Emergency Shut-off – Internal

8.0 POTENTIAL FUGITIVE AIR EMISSIONS

Table 8.1 below contains a list of all the Potential Fugitive Air Emission Sources within the site.

Majority of these air emissions are odour related, while the site LPG tanks have a maximum potential capacity of 27,600-litres.

Additionally, the site also contains 424kg of R404A & 125kg of R448A Refrigerant.

See Appendix B of a map containing Potential Fugitive Air Emission Point Locations

Table 8.1: Foyle Meats - Melton Mowbray Potential Fugitive Air Emissions

Ref.	Emission	Source Location
AF-1	General Waste Odour	General Waste Compactor
AF-2	Effluent Odour	Effluent Sump – Rear Yard
AF-3	Manure/Effluent Odour	Effluent Sump & Truck-Wash
AF-4	Animal By-Product Odour	CAT1 & 3 Trailers
AF-5	Manure Odour	Cattle Lairage
AF-6	LPG	Boiler House & Storage Tanks
AF-7	R404A & R448A Refrigerant	Main Pack & Chiller 5

8.1 Climate Change Agreement Scheme

Current Agreement date: 25th July 2022

CCA Register Ref: BMPA/T00205-GEN-1

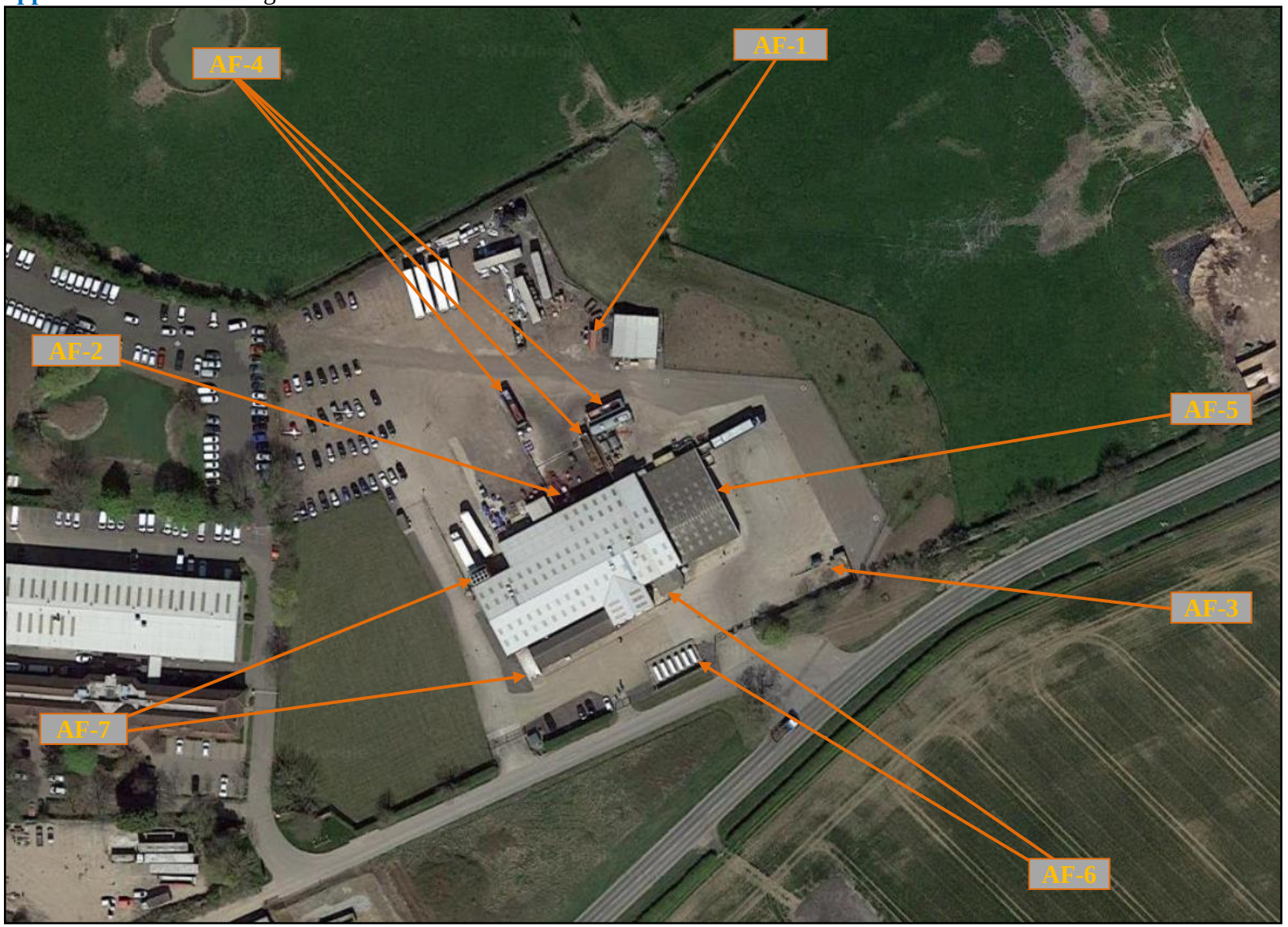
TU identifier: BMPA/T00205

Agreement Identifier: BMPA/T00205 v1

See Attachment B.3.11 - Climate Change Levy Agreement

Appendix A: Emissions to Atmosphere Point Source Locations

Appendix B: Potential Fugitive Air Emission Points Sources



Appendix C: Boiler Data Sheets

HW3P Series

From 1.1 to 10.5 MW
HW3P Hot Water Boiler is a full 3-pass fired heater designed for operation with Natural Gas, LPG, Light Fuel Oil and a variety of specialist Bio-fuels. The robust and proven configuration of the HW3-P guarantees reliable boiler performance in all industrial heating applications.

HW3P is constructed with specially constructed burners for low NOx operation in full compliance with the Medium Combustion Plant Directive whilst still providing high operating efficiency and thereby very low overall emissions.

The HW3P boiler from Babcock Wanson provides a maximum water outlet temperature of 106 °C and is fitted with a multi stage or fully modulating burner to suit the process load and provide very close control of process water temperature.

HW3P Series Hot Water Boiler

HW3P hot water boilers are available in 14 models with heat outputs between 1165 kW and 10 560 kW and with operating pressures between 5 to 8 barg depending on the model specification. The wide range of HW3P Hot Water Boilers ensures a size and heat output is readily available to suit the most demanding industrial process.

Babcock Wanson can provide a complete solution for your hot water boiler requirements including the boiler shell with insulation and cladding, matched burner, multifunction control panel, all ancillary equipment including primary circulation and anti-condensation pumps, pressurisation equipment and a full package of heater house and process valves along with boiler commissioning. All equipment supplied is backed up by our local After Sales Service.

Guaranteed Performances

- HW3P is a high efficiency boiler designed to provide exceptional performance and up to 93.4%* operating efficiency in standard form.
- Fully integrated and factory tested control system ensures simple and reliable operation.
- Commissioning and maintenance services are provided by Babcock Wanson technicians and service engineers local to you.

Robust Equipment

- HW3P is robustly built providing maximum water operating temperatures up to 106°C and pressure of up to 8 barg.
- HW3P includes three full gas passes and is equipped with insulated front gas pass opening doors for simple inspection and cleaning when required.

Environmentally Friendly

- Babcock Wanson's HW3P design provides a perfect match between boiler body and burner to ensure the efficient use of fuel, simple maintenance and compliance with emission standards.
- The burner and boiler design of HW3P Hot water boiler ensures low NOx operation.

Full Range of Ancillary Equipment

- Babcock Wanson burners
- Bespoke Package Designs
- Pressurisation Equipment
- Valves and controls
- System ancillaries and heat exchangers

Full Range of Services

- System design and project management
- Installation and piping service
- System Pressurisation sets
- Supply and Commissioning
- Maintenance and full After Sales service

* These values strictly depend on the boiler operating conditions.

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