

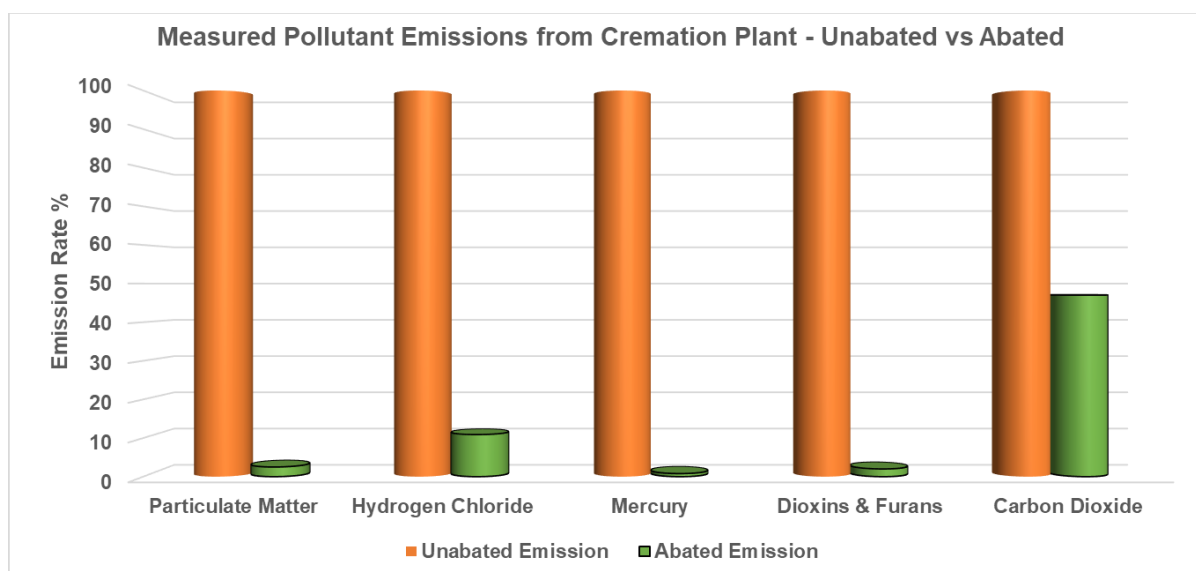


Cremation & Incineration Equipment

The Environmental Benefits of Abating Cremators

Installing a Flue Gas Treatment System to a Cremator will reduce pollutant emissions considerably as well as reducing your carbon footprint (as support fuel use will fall assuming you are permitted to operate at lower secondary combustion chamber temperatures when abated).

FT have analysed the real world, measured emissions data required for both abated and unabated cremators in the UK prepared for submission to Regulators during 2021, which is a statutory requirement. These tests constitute 239 cremation cycles for unabated cremators, and 570 test runs on abated cremators many of which will cover multiple cremation cycles where the flue gas treatment system serves more than one cremator. The measured reductions are displayed graphically below:



As an indication, the benefits resulting from abated cremator operation are (assuming 1000 cremations per cremator per annum):

Emissions of Total Particulate Matter down by 97.5% or a 126 kg/annum reduction.

Emissions of Hydrogen Chloride down by 89.1% or a 63 kg/annum reduction.

Emissions of Mercury down by 99.2% or a 3 kg/annum reduction.

Emissions of Dioxins & Furans reduced by a factor of up to 50 to barely detectable levels.

Emissions of Carbon Dioxide down by 53% or a 24,300 kg/annum reduction.

The emissions of many other pollutants will also be reduced including other acid gases and heavy metals, but these are not usually monitored for this process, and have therefore not been quantified.

An abated cremator can optionally also be fitted with our DeNOx system to reduce the emissions of oxides of nitrogen (usually referred to as NOx) by typically 70%.

Abated or not, FT Cremators are highly efficient combustion devices that also minimise the emissions of unburnt hydrocarbons due to superior design and optimised control.

Analysis of the emission test data outlined above reveals that the average emission of carbon monoxide (CO) was approximately 15 ppm (parts per million) as an average of many hundreds of 60-minute tests.

The UK sets maximum emissions releases of carbon monoxide for petrol engine cars that are limited to a 0.3% CO emission limit (normal idling speed) and a 0.2% CO emission limit (fast idle, 2,500 - 3,000 rpm).



Figure 1 - Typical arrangement showing Bag Filter

This means that the petrol vehicle can operate with CO emissions in the range 2,000 – 3,000 ppm when compared to the cremator average of 15 ppm, therefore operation of the FT cremator results in extremely low emissions to atmosphere.

Volatile Organic Compounds, or VOC's (sometimes referred to as Total Organic Carbon) are similarly an excellent indicator of combustion efficiency and analysis of the test data gives an average emission concentration of 0.59 mg/Nm³. This is a factor of 34 times lower than the emissions limit currently set in the UK.

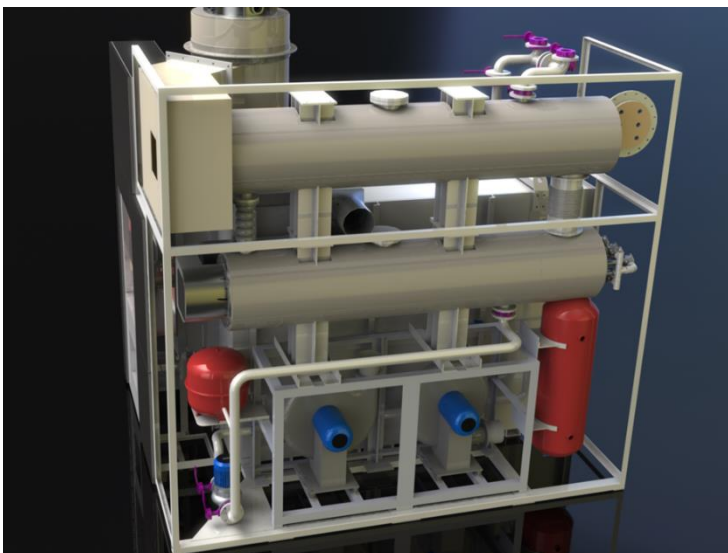


Figure 2 - The FTL Compact Gas Cooler



Figure 3 - The FTL DeNOx System