

# CO<sub>2</sub> Whole-House Gassing

A high capacity on-farm depopulation solution for large-scale disease outbreaks.



## What is the CO<sub>2</sub> Whole-House Gassing (WHG) System?

**It is the most convenient solution for large-scale depopulation using carbon dioxide.**

Whilst there are numerous methods of on-farm depopulation, WHG is the quickest solution for culling large flocks rapidly to prevent the spread of infectious diseases such as highly-pathogenic avian influenza.

In order to euthanise birds and undertake emergency mass depopulation of poultry in a whole shed, the WHG system introduces carbon dioxide gas, increasing concentrations to above 45% and reduces oxygen concentrations to below 10%.



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## Why use Livetec's CO2 Whole-House Gassing System?

- ✓ **Monitoring** Enhanced monitoring capabilities due to the multipoint gas system, measuring gas concentrations at 10 locations within the shed
- ✓ **Rapid deployment** Portable and mobile, with minimal set up time required regardless of farm layout
- ✓ **Culling with care** Safe, controlled, and humane way to cull large flocks without the need for labour-intensive handling
- ✓ **Multi species** The most effective solution for large-scale despatching of poultry
- ✓ **Scalable** Can be quickly ramped up to any scale, allowing for a higher volume of animals to be processed
- ✓ **Improves welfare** Constant CO2 injection to ensure effective and humane depopulation, with birds falling unconscious within minutes of activation
- ✓ **Easy to clean and disinfect** Ensuring the highest level of biosecurity can be easily maintained
- ✓ **Reduces disease spread** Doesn't break livestock skin and eradicates concern over human handling contributing to disease spread, whilst reducing stress on livestock producers and handlers
- ✓ **Reduces ventilation time** The system creates less dry ice, reducing the time needed for ventilation after gassing

To find out more visit  
[www.livetecsystems.co.uk](http://www.livetecsystems.co.uk)

## The Process

### Injection system

Livetec have devised a multi point release system to improve the distribution of gas within the building and reduce the risks associated with a single lance delivery system.

A temporary ring main is set up with hoses and release points in a loop within the shed. Release of CO2 is directed upwards and away from the birds. The system also creates less dry ice, reducing the time taken for the building to be ventilated after gassing.

### Multipoint gas monitoring system

The multipoint gas monitoring system measures and records gas concentrations at 10 locations within the shed and sensors, which also measure the temperature, are positioned in an equal array 50cm above the birds.

Additionally, a temporary CCTV system is established with a low light/InfraRed cameras placed both within and external to the shed so that the behaviour of the birds can be observed and external areas of the shed can be monitored for safety.

Operation setup and execution will be conducted under general permit to work from the site owner. The operation itself is supported by Livetec's risk assessment, method statement, operation checklist and individual task details.

**Whole-House Gassing is DEFRA's preferred large scale depopulation solution. It cites 'human health' as the leading advantage the method has over more traditional containerised gassing.**

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## Technical Specification

Dimensions manifold	700mm x 1050mm
Gas type and source	Liquid CO2 / Tanker Source
Hoses	20m, 10m and 5m with storz connections
Electrical power supply	Only for monitoring system 120/240 volts AC
Daily capacity (one manifold and set of hoses)	One system - 2 sheds
Usage types	Floor reared, flat deck (free-range laying hens) and multi-tier
Fill rates	Dependent on size of shed
Cycle times	Dependent on size of shed
Gas consumption	18 tonnes per hour
Set up time	2 hours

Effective WHG,  
undertaken by  
our experienced  
operations team

An on demand contracted service for efficient large scale culling as needed, provided by leading depopulation and biosecurity experts dedicated to reducing disease spread.



## Why Livetec?

- Range of services including training, advice, and full end-to-end support
- 24-hour emergency response
- We cover all areas of the UK and Ireland
- Support in developing best practice depopulation protocols
- Our team undertakes regular training to ensure top performance and outcomes
- Zero investment needed, and no set up costs; simple pay as you go
- Deployment of the latest approved whole-house gassing operations
- All necessary equipment and resources included
- Access to bulk CO2 from our trusted, approved suppliers
- Involvement in all UK poultry notifiable disease outbreaks for past two decades
- Scientifically validated, high animal welfare and humane depopulation techniques

# CO2 Whole-House Gassing

**The Livetec multi-point injection and monitoring system has been approved by APHA in the UK.**

## Creating the CO2 Whole-House Gassing system

**The Scottish Government funded project was launched in 2006 to develop an innovative new solution that would maximise bird welfare while simultaneously reducing the need for human input to protect farmer health and wellbeing.**

The project was a direct response to the 2003 bird flu outbreak in the Netherlands, where the inability to cull infected birds in a timely manner resulted in the infection of more than 1000 people with the H7N7 strain of highly pathogenic avian influenza, and the mixing of infected and healthy poultry which resulted in multiple preventable animal deaths.

Despite the devastation in Europe, by 2006, only one gassing solution for large-scale emergency depopulation had been approved for use in the UK: containerised gassing.

Scotland's Rural College (SRUC) developed a technique that addressed the primary concern of this method: manual handling

that could expose workers to disease and increase the level of distress experienced by livestock.

Following multiple trials, SRUC's WHG technique was approved by the UK Government for a range of housing types.

Today, the process that we at Livetec use is an evolution of this system based on our own in-house research and development, designed to support the needs of our clients as they build strategic emergency response strategies.





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## About Livetec Systems

**We are continually exploring new ways to improve the future of farming. We want to give farmers the peace of mind that they're doing everything they can to protect their animals and efficiently operate their business in the very best way.**

Our clients trust us to protect their reputation, livestock and livelihoods by working in compliance with UK and EU legislation. We act as a partner to help make the necessary changes to facilitate a strong, resilient farming strategy.



**Some of the renowned organisations we work with include:**



**To find out more email  
[info@livetecsystems.co.uk](mailto:info@livetecsystems.co.uk)**



**The British Poultry Council has worked with Livetec for six years and highly values their rapid and reliable service. Livetec provides our member businesses and their farmers with the most efficient service during the worst of times. Industry, Government and Livetec all work together to mitigate the risk of disaster and keep the food supply chain going"**

The British Poultry Council

Livetec is the leading provider of livestock protection - the go-to partner for all biosecurity issues across the industry.

We provide an extensive range of innovative solutions for our clients:

