



# BHSL

Transforming Poultry Production

# Step-by-Step guide to ABPR 36 Approval & Compliance







This guide should be read in conjunction with the information available on the APHA web site, see: <https://www.gov.uk/government/collections/guidance-for-the-animal-by-product-industry>

## Introduction

BHSL has prepared this detailed 'step by step' guide to ABPR 36 Approval and Compliance for poultry producers intending to install and operate a Combustion Plant on their farm to generate energy by using **ONLY AND EXCLUSIVELY** their own **UNPROCESSED** poultry manure as fuel in combustion.

ABPR 36 Approval from the APHA for an on farm Combustion Plant means that along with delivering significant commercial benefits, a poultry producer has the comfort and peace of mind of knowing their Plant is operating safely for animal and human health and the environment. An approval will require an adjustment to the farm's existing IPPC license.



# Process

There are six steps to be taken by an operator seeking to be approved:



## Step One

# Preparing to invest and construct an on farm energy centre for poultry manure fuel

- The operator decides to invest in a Combustion Plant to generate energy by using only unprocessed manure produced on their farm as fuel to generate heat and/or electricity.
- The operator seeks APHA approval to do so.
- The operator is responsible for ensuring detailed plans are prepared to construct the centre.
- The operator enters a commercial agreement with a Combustion Plant provider.
- The chosen provider satisfies the operator it has the equipment, experience and track record to safely and effectively manage the Plant and to support a successful ABPR 36 Application to the APHA to operate in compliance with the UK's legal regulations. A Model Declaration Form to be submitted with the APBR 36 application.
- The Plant is designed equipped and designated to operate lawfully using unprocessed manure to avoid the possibility of health and environmental risks.
- g) If the combustion plant provider and the operator is using abatement technology, then the operator must indicate this on his ABPR 36 Application. When abatement technology is used there must be continuous and on-going monitoring of the emissions and the results are recorded with any breaches immediately notified.

The conditions applied to an ABPR 36 Approval have been carefully designed to ensure the same high standard of bio security in the new Combustion Plant as already applies to the rest of the poultry production area on the farm. This will avoid any new risks to animal or human health being created by the combustion of unprocessed poultry manure as fuel on the farm.

This is why the conditions include precautions that will already be familiar to the operator and are currently applied elsewhere on their farm. Similarly, as evidence the conditions are being continuously met these rules include having systems to record and report on the operations that are prepared, ready and available for the poultry producer and the APHA to inspect thereby ensuring the plant is compliant (see Appendix for more details).



**Plants must use only unprocessed manure produced on their farm.**

**To comply with ABP Regulations BHSL combustion plants are designed to store safely poultry manure (e.g. not mixed with woodchip).**

**Because abatement technology is not needed with BHSL's FBC technology, continuous monitoring of emissions is not necessary.**

**BHSL can provide evidence that the emissions from its FBC units meet the standards that have been set for on farm combustion of unprocessed poultry manure so as to protect the UK environment. This is verified by results of independent monitoring tests carried out on already Approved Plants.**



## Step Two

### Completing and Submitting an Application to the APHA

The next step is to prepare and submit an APBR 36 Application

AN OPERATOR GOES THROUGH THE DETAIL OF THIS APPLICATION BEFORE THEY START TO BUILD AND INSTALL THEIR EQUIPMENT.

The Combustion Plant or energy centre will comprise of the following key elements:

- **A closed secured storage area** for the unprocessed poultry manure to be used as fuel. The manure is transferred immediately from the farms poultry sheds at the end of each cycle to this sealed building. The fuel handling system in this storage area has to be automated such that it minimises the need for regular handling of the manure thereby minimising the threat of cross contamination to other areas on the holding that are used for keeping animals or for food production.
- **Feed to the combustion unit.** While the equipment to transfer manure from the storage area to the combustion unit must be fully automated, there must be no further human handling or intervention as the fuel is being fed directly into the boiler ensuring that there is no interruption to the combustion process and the exact volumes are consistently used to provide a safe compliant combustion of all the material in accordance with the regulations.
- **The combustion unit** must, even under the most unfavourable conditions, combust unprocessed manure continuously at 850°C or above for at least 2 seconds residence time. Any breaches of this requirement must be recorded with records maintained for APHA inspection.
- **An auxiliary burner** must be used during start-up and shut-down operations to ensure that the temperature is raised to the required level to ensure there is no residual fuel in the combustion chamber.
- **Capability to combust** unprocessed manure as a fuel even in the most unfavourable conditions without using or mixing another biomass fuel to deal with this issue.
- **Heat generated** in the combustion process will immediately be transferred to a heat exchanger or combined heat and power, CHP, unit
- **A stack** located at the end of the filtering system is positioned on the side of the combustion unit at a height above the energy centre that ensures compliant plume dispersion.
- **Residual Ashes** are automatically collected from the plant and stored in a secure area until removed from the building.
- **Controls, procedures and processes** that effectively manage the plants entire operations. Regular maintenance and the ability to promptly respond to and safely deal with malfunctions are required.



BHSL prepare the APBR 36 application for their customers to submit.

Combusting Poultry Manure can result in severe corrosion to exposed metal surfaces within the Plant. BHSL recommend purchasers of manure to energy plant look for evidence of life cycle costs and ease of future maintenance.

Mixing woodchips or other materials with the manure to be used in an approved combustion unit is not lawful.

BHSL have installed and are operating all of these elements on ABPR 36 Approved Plant including the BHSL Toploader system that removes the need for further handling of the fuel in the storage area or when being transferred to the combustion unit.

BHSL provide ongoing 24/7 support, including systems to record that the Plant is operating efficiently and is compliant.



**BHSL have successfully completed and submitted ABPR 36 Approval requests to the APHA and can take applicants through the process in detail to incorporate the particular circumstances of their farm.**

- **Combustion units using abatement equipment** must have urea injection equipment or other abatement technology installed, have safe storage for urea on the premises, show probe connection to the stack and give evidence of continuous monitoring system with the associated recording and have systems in place to notify any breaches.
- **Recording systems** for temperature and for the proper functioning of the Plant. Records showing compliance with the applicable rules must be available for inspection by the APHA. These must be compiled and kept in an accessible format for a period of 2 years.

Having satisfied themselves that the equipment supplier and Plant Manager can and will provide for the above, the operator should then:

- Download an ABPR 36 Application for Approval form from the APHA web site or ask their equipment supplier or Plant Manager to supply one.
- Carefully read over the Application Form and, with the support of their Plant provider, proceed to compile the information that the APHA require.
- A completed ABPR 36 Form that provides the requested information .
- Details of the layout of the farm and where the Plant is to be built.
- A technical specification for all aspects of the Combustion Plant.
- General assembly drawings highlighting the Combustion Plant's critical compliance aspects .
- Details of the unit's emissions performance that show it consistently operating at 850°C/2secs and meet the SOX, NOX and particulate emissions standard requirements (or how it will be continuously monitored if abatement equipment is used).
- A signed Model Declaration from the Combustion Plant provider and manager that formally states their equipment, technology and controls will ensure the Plant is fully compliant with UK regulations.

When all of this paperwork is ready, the operator should contact its local APHA Office to discuss the formal submission of its ABPR 36 Approval request. See: <https://www.gov.uk/government/organisations/animal-and-plant-health-agency/about/access-and-opening#field-services-offices-animal-health-welfare>

**The Model Declaration is a 'customer warranty' that their equipment is capable of meeting the requirements of the regulations.**

**Purchasers of Manure Combustion Plants should always seek this document before making a commercial decision.**





## Step Three

# Commencing the installation and commissioning of the Combustion Plant/energy centre

### 3.1 Before signing a contract:

TO BE COMPLIANT IT IS STRONGLY ADVISED TO CONSULT WITH THE APHA BEFORE STARTING TO BUILD.

This is due to it being essential to secure a new and different regulatory approval for use of poultry manure compared to installing a woodchip boiler to heat the poultry sheds.

Because the Combustion Plant, comprising the on-farm energy centre and all of its elements, equipment and controls, will both store and combust significant quantities of unprocessed manure on the farm, additional precautions are required to avoid any new risks being created for animal and human health, or of polluting the local environment.

Therefore, before entering into a contract with a third party specialist to install, commission and manage the storage and use of their poultry manure as fuel, which requires construction of an entire new energy centre, it is very important to understand and appreciate:

- o The decision to invest and proceed to construct and equip the energy centre is ultimately the responsibility of the operator.
- o The APHA will comment and discuss the requirements of the regulation before the decision is taken by the operator to build.
- o In this way the operator can have the benefit of their advice.

### 3.2 Before Commissioning the Combustion Plant:

Having entered into a contract and when the contractor is ready to start using poultry manure as fuel in the new energy centre, the operator notifies the APHA who will then come to the farm and inspect the Combustion Plant and the facilities before it is commissioned.

- o If satisfied all of the compliance requirements are met, the APHA Veterinary Officer will issue a Conditional APBR 36 Approval which will be valid for three months, with the possibility of it being extended for a second three months. Further extensions are not provided for under ABPR regulations (ie six months is the maximum period allowed for).
- o During this Conditional Approval period the operator must provide further evidence that the plant is complying with the ABPR 36 standard as follows:
  - Commissioning two independent expert tests of the emissions coming from the Combustion Plant stack and provide detailed reports to APHA as evidence they meet the required standards
  - Satisfying the APHA, who will undertake at least two site visits one of which will be an unannounced visit, that the Plant is operating within the regulations.



The BHSL customer portal provides access to record keeping such as the continuous logging of the 850°C/2 secs combustion performance requirement.

BHSL operates manure to energy plants on behalf of our customers, ensuring ongoing maintenance activities keep the equipment operating efficiently and within the required emissions limits.

The BHSL managed Combustion Plants have passed annual ABPR 36 Approval Inspections by the APHA

BHSL organises the necessary emission tests with third party experts for the commissioning and Approval process. These results are shared with the operator and submits its report to the APHA.



## Step Four

### The issuing of a full ABPR 36 Approval

- If satisfied by the independent tests and their own site inspections, the APHA will issue a full Approval.
- The APHA will visit the site on a risk basis to ensure ongoing compliance with the ABP regulation.
- During routine operation further independent tests must be carried out and a report compiled for APHA on the emissions from the combustion unit.



**Clients of BHSL have access to in depth knowledge and understanding of how these procedures can be successfully put in place, thereby ensuring the farm meets the highest standards to protect food and animal safety, whilst also protecting the environment and securing all of the benefits including the RHI.**

**BHSL clients have successfully completed the necessary IPPC adjustment.**



## Step Five

### Adjusting the farm's IPPC to incorporate this new Approval

- The operator notifies the Environment Agency that they have secured a ABPR 36 Approval
- A request to adjust the farms EPR/IPPC is forwarded with a copy of APHA Approval notice.



## Step Six

### Routine inspections

- The APHA will undertake routine inspection visits.
- These visits will include checking results of the independent emissions testing and the other records to be kept by the Combustion Plant manager on behalf of the producer (eg of the continuous achievement of the 850°C/2 secs combustion performance standard along with the regular ongoing equipment maintenance and response to any malfunctions).
- In case of abatement technology these inspections will include checks on the urea storage area, receipts of urea purchases, continuous monitoring records, breach records etc.

## Additional Information

**The full legal requirements can be found in Annex III Chapters of IV and V of EU Regulation No. 142/2011 (as amended by EU Regulation No. 592/2014 and the Control Regulation ABPR 1069/2009a along with the Animal By-Products (Enforcement) (England) Regulations 2013.**





The BHSL poultry manure to energy technology has been designed specifically for the safe processing of untreated poultry manure.

# Appendix

A BHSL system will meet the requirements of these regulations with:

- **Clear separation** of the energy centre (eg from the other farm buildings).
- **Bio secure equipment and procedures:** to protect farm/animals (eg wash facilities for the storage area and equipment used to transfer the fuel from the poultry shed to the farms energy centre and wash water from the cleaning of the storage area needs to be collected in a dedicated holding tank. A fully documented rodent control programmes).
- **Secure storage for the poultry manure fuel** before it is transferred and used in the combustion unit. (eg only poultry manure can be stored)
- **Automatic fuel handling equipment** on the Combustion Plant to transfer the fuel at a consistent volume to the combustion unit (eg with no human intervention and/or handling).
- **Secure access systems** to prevent unauthorised entry (eg key pad controls and codes).
- **Necessary on-site hygiene facilities** for those who persons working on the Combustion Plant (eg toilets and wash hand basins).
- **Segregated areas** within the Plant (eg between the fuel and the combustion unit).
- **Automatic, 24/7 remotely monitored control systems** to ensure when operating, that the fuel is continuously combusted at above the 850°C/2 sec requirement and to immediately shut down the unit in case a malfunction that could create a biosecurity or pollution risk.
- **Heat exchanger** as part of the combustion unit (eg to provide heat only generation or through a CHP unit to generate electricity).
- **Emissions stack** at end of filtering system at a height that ensures compliant plume dispersion meeting the following limits:

Pollutant	Emission limit value in mg/Nm3
Sulphur dioxide	50
Nitrogen oxides (as NO <sub>2</sub> )	200
Particulate matter	10

- **Infrastructure and pipe network** to transfer the hot water from the energy centre to the poultry sheds or, in the case of a CHP unit, to export electricity to the grid.
- **Residual ash storage area:** that is secure until its transfer from the energy centre.
- **Negative pressure in storage area:** ensuring odours/pathogens are 'pulled' as combustion air from the storage area ensuring they are sent though the combustion process to minimise their impact.

Evidence of low emissions from manure combustion is available.

24/7 support and continuous data collection are cornerstones of our ongoing service to our customers.

BHSL has operated its Combustions Plants for more than 110,000 hours.

BHSL provide, install and manage equipment to meet all of these safeguards.



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