H1 ASSESSMENT

DEVELOPMENT: **IPPC PERMIT VARIATION APPLICATION**

LOCATION: **Lower Trederwen Farm**
Arddleen
Llanymynech
Powys
SY22 6RZ

CLIENT: **Mrs J Mountford**

Roger Parry & Partners LLP
Mercian House, 9 Darwin Court, Oxon Business Park, Shrewsbury, SY3 5AL
Tel: 01691655334
Email: richard@rogerparry.net

V3
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Lower Trederwen Farm Broiler Unit

The poultry unit at Lower Trederwen Farm shall be for 116,000 broiler chicken places, this variation is to update ethe permit to reflect the actual biomass boilers on site. The existing permit states there is a 1.1MW biomass boiler on site, but there is actually X2 Wood chip boilers ETA eHack 240 EP. The net thermal input for one of this biomass boilers is 287 kWh.

The H1 Assessment Conclusions are listed below.

Conclusion
Replacing the 1.1 MW biomass boiler with two ETA eHack 240 EP boilers will not increase risks in terms of odour, noise, fugitive emissions, ammonia, or accident/emergency planning. The modern design, compliance with EU standards, and integrated safety features ensure that environmental and safety performance remains robust and within regulatory limits.

Properties within 400m of the permitted site

Property	Distance to Permitted Site	Northing	Easting	Type of property
The White House Trederwen Lane Arddleen Llanymynech SY22 6RZ	400m	326962m	315737m	Neighboring House
Woodmoore Cottage Wood Cottage Trederwen Lane Arddleen Llanymynech SY22 6RZ	375m	326548m	315448m	Neighboring House
Oak Tree Barn Trederwen Lane Arddleen Llanymynech SY22 6RZ	149m	326966m	315759m	Neighboring House
Hayloft Lower Trederwen Farm Trederwen Lane Arddleen Llanymynech SY22 6RZ	145m	326955m	315737m	Neighboring House
Cart House Lower	145m	326955m	315737m	Neighboring House

Trederwen Farm Trederwen Lane Arddleen Llanymynech SY22 6RZ				
The Granary Trederwen Lane Arddleen Llanymynech SY22 6RZ	116m	326910m	315743m	Neighboring House
The Old Cow House Trederwen Lane Arddleen Llanymynech SY22 6RZ	145m	326947m	315732m	Neighboring House
Trederwen House Trederwen Lane Arddleen Llanymynech SY22 6RZ	345m	326947m,	315732m	Neighboring House
Wood Cottage Trederwen Lane Arddleen Llanymynech SY22 6RZ	374m	326550m	315448m	Neighboring House
Brooklea Trederwen Lane Arddleen Llanymynech SY22 6RZ	344m	326499m	315514m	Neighboring House
Upper Trederwen Farm Trederwen Lane Arddleen Llanymynech SY22 6RZ	163m	327014m	315840m	Neighboring Farm
Trederwen Hall Trederwen Lane Arddleen Llanymynech SY22 6RZ	386m	326264m	315731m	Neighboring Farm
New House Farm Trederwen Lane Arddleen Llanymynech SY22 6RZ	251m	326559m	315542m	Neighboring House
Hen Dy Newydd	293m	326512m,	315528m	Neighboring

Trederwen Lane Arddleen Llanymynech SY22 6RZ				House
Derwen Deg Trederwen Lane Arddleen Llanymynech SY22 6RZ	371m	326394m	315530m	Neighboring House
Coppice House Trederwen Lane Arddleen Llanymynech SY22 6RZ	386m	327146m	316154m	Neighboring Farm

Odour
The ETA eHack 240 EP boilers are designed to operate with high combustion efficiency, ensuring that wood chips are fully burned and minimising the release of odorous compounds. Compared to the existing 1.1 MW boiler, the two smaller units will use the same fuel type and quality standards (EN ISO 17225-4 wood chips, max 35% moisture). Since odour emissions are primarily linked to incomplete combustion or poor fuel storage, the modern combustion controls and fuel handling systems of the ETA boilers ensure odour levels remain low. Therefore, the change does not introduce any additional odour risks.

There have been no odour complaints in the past.

Noise
Noise emissions from biomass boilers typically arise from fans, motors, and fuel conveying systems. The ETA eHack 240 EP boilers are engineered with modern insulation and noise-reduction features, and their rated noise emissions are comparable to or lower than older large-scale units. Operating two smaller boilers instead of one large boiler does not double the noise output, as each unit runs at partial load when demand is lower, reducing fan speed and mechanical activity. Consequently, overall noise levels will remain within acceptable limits and will not increase compared to the existing installation.

There have been no noise complaints in the past.

Fugitive Emissions
Fugitive emissions, such as dust or particulates from fuel handling, are controlled through sealed conveying systems and integrated precipitators in the ETA eHack 240 EP models. These boilers achieve dust emission levels of less than 40 mg/m³ (10% O_2), which complies with EU Regulation 2015/1187. The use of two boilers does not increase fugitive emissions, as both units are equipped with the same emission control technology and operate within regulatory limits. Proper fuel storage and handling practices further ensure that fugitive emissions remain unchanged compared to the existing boiler.

Dust
There are no receptors within 100m of the permit boundary, therefore an assessment is not required.

There have been no dust complaints in the past.

Ammonia

Ammonia emissions are not a significant concern for woodchip combustion, but the configuration of two smaller boilers offers advantages over a single large unit. With two ETA eHack 240 EP boilers, combustion can be more finely controlled, as each unit can operate at partial load depending on demand. This flexibility ensures steadier combustion conditions, which reduces the formation of nitrogen oxides and related compounds that could otherwise contribute to ammonia slip. In contrast, a single large boiler has fewer opportunities to modulate load efficiently, increasing the risk of fluctuating combustion conditions. By distributing the thermal input across two smaller, modern boilers, the system achieves more stable operation, lower peak emissions, and improved compliance with BAT 2017 requirements, thereby reducing any potential ammonia-related risks compared to one larger boiler.

Why is an assessment not required:

- The fuel comes from virgin timber (whole trees and woody parts of trees), clean non-virgin timber (any timber or timber product that has not been treated), straw or miscanthus (also called elephant grass)

- The aggregate boiler net rated thermal input must be less than 0.5MWth (megawatt thermal)

Accident / Emergency Plan

The ETA eHack 240 EP boilers incorporate multiple safety devices, including temperature limiters, safety valves, and emergency stop switches, as outlined in the manufacturer's manual. The accident and emergency procedures remain consistent with those required for the existing 1.1 MW boiler. In fact, having two smaller boilers can improve resilience: if one unit fails, the other can continue operating, reducing the likelihood of complete system shutdown. The emergency planning requirements therefore remain unchanged, and the risk profile does not increase with the installation of two ETA boilers.