

Calculating Greenhouse Gas Emissions

In my comments of 6th May 2026, I set out estimated emissions for the production of biomethane at Ashton Down and the transportation of raw feedstocks, digestate and biomethane from the carbon calculation spreadsheet provided by Acorn in June 2024. The Planning Officer in his April 2026 Report failed to take account of such emissions in his planning balance. His report contained no justification for the failure to include local emissions. I have, since this application was first submitted, been calling for details of the on-site and transport emissions to be disclosed. In my submission of 4th November 2025 I suggested that emission calculations should be verified by independent engineering consultants. No such third party verification has been undertaken by Wiltshire planners.

Other planning authorities facing a raft of applications for Aerobic Digestion plants from Acorn have faced similar issues. The Hardwick Green Energy application in Stratford- on-Avon (22/02935/FUL) was submitted in 2022 and was almost identical to the Ashton Down scheme in terms of volume of input material and biomethane produced. In my submission of the 4th November 2025, I drew the Planning Officer’s attention to reports from Arup, consulting engineers, that had been commissioned by the planning authority to validate the carbon calculations. In the in the absence of any reports being commissioned by Wiltshire, the conclusions of the Arup studies, which were public documents on the planning portal for the Hardwick Green scheme, are a good proxy for an external consulting engineering review that I believe is necessary.

The applications for two schemes are very similar in scale:

Comparison of Hardwick Green Energy and Ashton Down Application		
	Hardwick Green Energy	Ashton Down Green Energy
Feedstock tonnes	92,000	91,000
Biogas Production Nm ³	20,466,506	20,217,255 ¹

Attached to this note is the second Arup Report dated 21 August 2024. Some of the analysis in the report is not relevant to the Ashton Down decision as it relates to policies within the Stratford-on-Avon Development Plan. Other issues, particularly the discussion of emissions and emissions savings, are relevant to this application. Section 2.7 of the Arup report, headed Carbon Emissions Benchmark Assessment, states:

“However, the Planning and D&A Statement indicates the captured carbon dioxide will be sold within the food industry; in this application, the captured carbon would eventually make its way back into the atmosphere. Without indication that the captured carbon will be permanently stored, and without a clear boundary diagram provided in the methodology to

¹ Taken from Acorn’s Carbon Calculation spreadsheet

clarify, Arup advises that carbon capture should not be taken as a credit to the carbon calculations, and the LPA should evaluate this proposal according to the carbon intensity without CCUS. Note that CCUS provides for nearly half of the carbon savings claimed by the development. CCUS is essentially the difference between a scheme that is net negative in emissions and removing carbon from the atmosphere (taking credit for CCUS) and a scheme which has emissions greater than zero (not taking credit for CCUS)."

It goes on to say:

"According to Arup's estimations, the total annual emissions of the Hardwick facility would be 6,860 tCO₂e/year, resulting in an emission factor for biomethane of 17.06gCO₂e/MJ. This estimate is shown in Table 3 along with the carbon intensities presented in the revised Carbon Intensity Methodology and the related benchmark guidance."

The Arup Report goes on to say at Appendix C.3 para 3 that:

"The revised Carbon Intensity Methodology (Table 2 and Table 14) suggests that manures and slurries are considered as potential feedstocks serving the facility. In Arup's experience, the beverage industry may not accept CO₂ produced via anaerobic digestion from some feedstocks such as sewage sludge and manures. In this case, either the anticipated feedstocks or the carbon capture process and end use would need to change from what is currently presented in the methodology"

Hence, the carbon savings associated with carbon capture and storage should not be taken into account in the planning balance until such time as it can be demonstrated that the CO₂ is to be permanently stored or used in an industry where it will not promptly be returned to the atmosphere. The food and beverage industry may not accept the CO₂ captured from farm wastes.

The level of local emissions calculated by Arup at Hardwick Green at 6860 t CO₂ per annum are very similar to my calculations for the Ashton Down scheme of 6926 t CO₂ per annum in my 6th May 2026 submission. It should be noted that the Hardwick Green site was 17.4 miles from the injection point whereas the Ashton Down scheme is at least 45 miles from Banbury. The distance from the Wye Valley chicken litter source was also much shorter at Hardwick Green. Therefore, transport emissions are higher at Ashton Down. CHP plant configurations may also be different. Furthermore, there is no evidence that there is a market for this volume of CO₂ within the 10 mile radius assumed in the transport emissions calculations.

There are a number of factors that have not been taken account of in the Ashton Down calculations of local emissions such as gas flaring at Ashton Down and Banbury, leakage of biogas or bio methane, methane slip or longer distance movement of chicken litter, CO₂ or digestate. Consideration of these factors would lead to higher local emissions and could be material.

In conclusion, the local emissions of CO₂ are real physical emissions and should be taken account of in the planning balance. The approach of the Planning Officer in his April 2026 report to ignore these emissions is fundamentally wrong and unsupported by any third party evidence and his report failed to set out any justification for the omission. The credits given for carbon capture and storage are uncertain and a prudent approach would be to ignore these benefits in the planning balance until such time as it is demonstrated that the captured carbon will be stored long term, not promptly returned to atmosphere, and that it is suitable for the unidentified local market. Local on-site and transport emissions are physical emissions with local impact and harm and should be given significant weight in the planning balance.

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