



UPGRADING CASE STUDY - OPERATIONAL PERFORMANCE

Project:	Portfolio of Designed, Built, Owned and Operated plants	Cost:	£66m
Client:	Agrivert owned	Time frame:	July 2010 to Nov 2018
Location:	Southern England and Wales	Output:	Operating at over 97% output for over 8 years
Facilities output:	13 MWh		

Between 2009 and 2018, Agrivert designed, built, owned and operated a fleet of five Anaerobic Digestion (AD) plants in the UK. The first was commissioned in 2010 and the last was commissioned in 2016. The design and build quality combined with the proficiency in operations allowed these plants to consistently operate at over 97% of electrical output over this period. The asset portfolio was subsequently sold to Severn Trent Green Power in Nov 2018 and continues to deliver industry-leading outputs.

The AD assets were all Combined Heat and Power (CHP) plants between 2.1 MW and 3 MW. The plants were all designed to recycle between 40,000 and 60,000 tonnes of food a year with the capability to top up with crop feedstocks if required.

AVAILABILITY

Uptime was also impressive. In the entire eight years of operations, only one plant was unavailable to receive food waste from its clients and even then only for four days. Uptime and plant availability is incredibly important when dealing with food waste which, once collected, is challenging to store and needs to be treated as soon as possible.

EXCELLENCE THROUGH DESIGN

Agrivert's design team focused on delivering an ergonomic, simple and robust design. All our design engineers had practical experience in operating plants and therefore a practical as well as a theoretical understanding of the demands of a plant was incorporated into the design. We believe that the simpler the design, the less there is to fail, so designing without undue complexity was a focus. The plants were designed with dual systems in every critical area. Quality components were prioritised over cost, and this undoubtedly resulted in reduced failure. The layout of the plants also allowed easy access for maintenance so that when a failure occurs, swift repairs can take place.

Enormous effort is made to understand how to process food waste and to design plants accordingly. Food waste is often tainted with difficult contaminants that are the undoing of many plants, causing significant downtime. The success of understanding and designing a front-end system that could process a constant change of food waste and contamination profiles was instrumental in our availability performance.

COMPLIANCE

The plants all operated in harmony with the local community. Indeed, one of the plants was regularly used by regulators to demonstrate best practices to new staff. In addition, all digestate products were secured by PAS110, and Agrivert worked with WRAP to promote the merits of quality digestate.

EXCELLENCE THROUGH OPERATIONS

The plants were run by experienced operators who had been involved in the construction of the plants and therefore had an inherent knowledge of how they worked. This team was supported by an engineering team able to conduct maintenance on any aspect of the plant. Agrivert recognises that component failure can and does happen, and a comprehensive set of boxed spares was kept on site to ensure repairs could swiftly be conducted if required. All staff were trained to be multi-skilled, making them dexterous in operations. Because of the ergonomic design, these plants were run with minimal staffing of 1 manager and 2/3 operators.

OUTPUT

The AD assets delivered an unparalleled level of uptime and output when compared to the industry average. Over five years, the portfolio delivered 97% electrical output against its rated capacity. This compared favourably to the sector average of 71%, according to Ofgem data published at the time.

