

Emley Anaerobic Digester

CO2Sense has assisted Clayton Hall Farm in the development of an anaerobic digestion (AD) facility on the farm. CO2Sense provided support to negotiate the technical and financial aspects of the installation and invested £600,000 to help make the facility operational.



Clayton Hall Farm, located in Emley, West Yorkshire, decided to convert from rearing livestock to become an AD facility, processing local food waste and energy crops grown on the farm.

The AD plant will enable the farm to generate a new income stream, not only from collecting the gate fees charged by the disposal of food waste, but by generating clean electricity and selling it to the national grid.

The facility will process a total of 10,000 tonnes of food waste and energy crops per year. The biogas produced by this process will generate 3,150MWh of clean electricity each year, enough to power around 730 homes, and save 17,300 tonnes of carbon dioxide over the next ten years.

It will be the first plant in Yorkshire to use both food waste and crops grown specifically to generate electricity.

Renewable Energy

- Received £600,000 investment from CO2Sense
- Also received technical help to help negotiate and develop the plant
- Plant will generate 3,150MWh of electricity per year
- Plant will process 10,000 tonnes food waste and energy crops, diverting the food waste from landfill
- The facility will save 17,300 tonnes of CO₂ over the next ten years
- Attracted £850,000 of private investment

“ The technical and financial help from CO2Sense has been invaluable. We are really excited now the plant is ready to become operational and we can start producing clean electricity. ”

Neil Gemmell – PROJECT DEVELOPER - CLAYTON HALL FARM

After submitting a planning application for the AD plant, the owners contacted CO2Sense to get technical and financial support for the development of the plant. Using knowledge from our experts, CO2Sense helped the farm to complete their grid connection application, successfully submitting the initial grid connection enquiry on behalf of the farm.

CO2Sense also helped the farm to develop their applications to regional and national funding bodies. Through CO2Sense’s experience with funding, the project was able to give the right information to the right contacts to make sure they had as many financial opportunities as possible. This has helped to attract £850,000 of private sector funding.

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“Clayton Hall Farm AD plant will be able to process a significant amount of food waste, generate clean electricity as well as saving carbon and creating profit for a farm-based business.”

Victoria Maynard - CONSULTANT - CO2SENSE

CO2Sense has also directly funded the AD plant with £600,000 of investment. This has meant that the AD plant is not reliant on any grant funding, and so can claim all of the payments from the feed in tariff. The investment will be paid back once the plant is generating electricity and making income, meaning that these funds can then be recycled to support other renewable energy projects.

Once the project had secured the permits and funding, CO2Sense then helped Clayton Hall Farm to set out the establishment of the actual plant. We were able to write the business plan for the plant, establish financial models and make sure there was a structured timeline in place for the building of the facility.

Victoria Maynard, CO2Sense Consultant, who worked with Clayton Hall Farm in developing the AD plant, said, “Because of the funding and support provided by CO2Sense, Clayton Hall Farm AD plant will be able to process a significant amount of food waste, generate clean electricity as well as saving carbon and creating profit for a farm-based business.”



CO2Sense also continues to help the business to find new sources of food waste that can be processed to generate electricity.

The farm had intended to pay for food waste, but CO2Sense helped them to find a source that would pay the farm to remove the waste. So the AD plant has made more savings and more food waste has been diverted from landfill.

Neil Gemmel, from Clayton Hall Farm, said “The technical and financial help from CO2Sense has been invaluable. We are really excited now the plant is operational and we are producing clean electricity.”

CO2Sense was able to provide the skills and funding that the farm needed to make this plant viable and to speed up development. The AD plant is now operational and producing clean energy from food waste.

CO2Sense was established by Yorkshire Forward to help businesses in the region to prosper in the low carbon economy. We provide expertise and funding to help environmental companies to grow. We work with partners to help all organisations to fund and develop initiatives that reduce their carbon emissions.

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