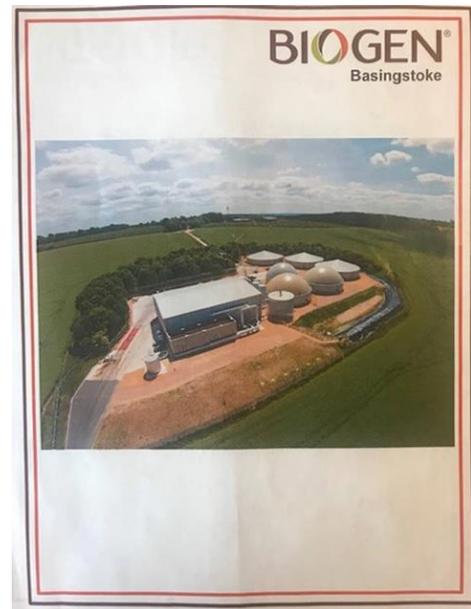


# Report to Climate Change Panel on the members visit to the Biogen facility in Dummer Hampshire.



## Reason for Visit:

The Climate Change Panel was asked to consider a proposal for BFC to construct a local Anaerobic Converter to service the Borough and other local authorities and commercial contractors. Members wanted to obtain more information and understanding of the facility before they could make comment.

## The Visit:

Simon Musther (Commercial Director on behalf of **Biogen** – (who were awarded Recycling business of the year) arranged for us to visit (Cllr Ingham, Mossom and Virgo) on Friday 3<sup>rd</sup> September 2021.

## The Facts:

All Councils will be expected to recycle their food waste by **2023!** Simon also explained in his opinion the present number of AD's could not cope with extra demand. We also learnt that the Government subsidy for building renewables had been withdrawn and as a consequence there had been no new facilities constructed for some time. We were told that it cost around **6 to 8 Million Pounds** to construct a reasonable sized AD. The whole process of turning organic material with the aid of microorganisms, in the absence of Oxygen, is highly technical and needs considerable expertise to make the facility both efficient and cost effective. By turning organic matter into biogas, the product is combusted to generate electricity or heat via a generator which can be processed into renewable natural gas and transportation fuels (ethanol). Most of the AD plants produce electricity which can be fed directly to the grid but there are some producing just Biogas – Methane CH<sub>4</sub> (50/70%) and Carbon dioxide CO<sub>2</sub> 30/40%.

Methane is a much more potent greenhouse gas which during natural decay would have entered the atmosphere, by capturing the methane and converting it to CO<sub>2</sub> to generate electricity **prevents** it from escaping in the atmosphere.

**The plant:**

Annual food waste capacity: 29,000T  
Generation to grid: 1.5MW/h  
Homes powered: 2,000  
Digestate: 1,600 acres

**The Tour**

Members were first taken to the control centre and given a health and safety briefing as well as an overview of the process. Most of the food waste for this site comes from hospitality and supermarkets with some food waste from Local Authorities. They had also processed some arable crops, but Simon stressed that the contents must be closely scrutinised for the microorganisms to work properly. In the control centre they constantly monitored the output of the digester in order to check its quality of output. The total staff employed at this facility including engineers and operatives were 6.

**Discharge Area**



Members watched as the Biffa company discharged a full lorry of food waste (from Waitrose in Bracknell) on the yard. It considered of considerable plastic materials and containers. We were informed that it was important that the food was not too wet or stale as this harmed the biological process and they only accepted waste from reliable sources.

The waste was then lifted by means of a JCB machine into a hopper which removed all the plastic and non - organic materials. Constant attention was given to cleaning down the yard and vehicle after the load was emptied. **The planning consent only allowed 19 lorry movements per day.**

## The Digester



We followed the process to the digester which resembled that of a chemical plant. The tank or reactor converted food waste using bacteria to break down organic solids without the use of oxygen. The dome at the top of the plant collected and stored the biogas. A large and very expensive generator fuelled on biogas worked constantly (24/7) to complete the process of converting the product into electricity with a direct link to the National Grid.

## Planning and the Community

Biogen put considerable effort into working with the local community into the running of the site when it bought the plant in 2018. There was much hostility to its existence before the company purchased it but through careful adjustments to lorry movements and reducing the emission of unsavoury odours, the plant now works without objection, but Simon stressed it took a lot of careful handling and compliance and this need to be monitored daily. He went on to say, 'It is essential to bring the community with you regarding planning matters.'

## Recommendations

I spoke with Mark Foxall at Shropshire Unitary who had their own plant from 2008 but ceased production in 2012 over many difficulties. Of course, technology has moved on since then and they built it with funding from Defra and are considering a restart. Today they would use a commercial partner to operate the plant given the complexities. It also helps that there is arable land around to use the bi product. He suggested we should consult **Anaerobic Digestion & Bioresources Association ADDBA** who will give advice on methods and commercial arrangements for our region. Close attention should also be given to the price of tariff offered to make the operation viable and commercially productive given the type of waste we would use.

