Farming Connect Management Exchange

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Austria

Biomass CHP (Combined Heat and Power) Part 2

03/08/2019

1 Background

Please see first report for details.

2 Itinerary

During the second part of my biomass diversification project, I visited a specialist miscanthus grower in Austria. I gained valuable knowledge on the processes involved with biomass CHP technology (also called cogeneration) and the farmer went into detail on every aspect, including the initial 3 year start up and their annual production. Of the 4 hectares of miscanthus he grew, 1.5 hectares would be utilised on his own property. The remaining would be sold as chip into the local CHP plant which provides electricity and heat for the adjoining town. As the moisture content is only around 15% (meaning an efficiency of 75%) due to a favourable climate, chip drying is not a requirement.

According to the farmer, 4 hectares of miscanthus equate to the heat production of approximately 6,000 litres of oil. Miscanthus can be grown even in wetter conditions, however good soil and dry weather improve yields. It is a hardy plant and needs minimal attention once planted.

To name just a few uses of the end product, apart from directly burning it in a biomass heating system, it includes animal bedding, production of pellets and briquettes. It is also used instead of wood chip around garden plants. On a more industrial scale it can also be used to produce ethanol.

3 Next Steps

I will be looking into growing my own miscanthus, initially as a trial on a small scale to assess if it would be a viable option to fuel my biomass/CHP system, therefore making me less reliant on wood pellets.

It has been a valuable experience to visit Austria, a country where agriculture, the environment and energy production work together in harmony.

Local governments are keen to help farmers and businesses move forward with these types of enterprises.

4 Key Messages to the industry

1. Cold winters favour fuel crops, as it takes away the need for any drying processes.
2. After the initial 3 years of light crops, a minimum of 20 years of substantial crops can be achieved.
3. 4 hectares of good quality miscanthus crops can replace around 6,000 litres of heating oil.
4. The UK government must move forward in removing barriers, encouraging farmers and businesses to produce their own sustainable energy sources whilst simultaneously protecting the environment for generations to come.