COMMODITY WATCH - ANAEROBIC DIGESTION

In recent months, there have been press articles on Anaerobic Digestion (AD) and the benefits for farming and the wider environment. Yet despite this, many people still do not actually know what Anaerobic Digestion is and what the technology involves.

AD is the process where biomass is converted into useful products by micro-organisms in the absence of oxygen. Biomass is inserted into sealed tanks and the naturally occurring organisms digest the matter, and what is produced can be summarised into two raw commodities;

- Biogas
- Digestate (otherwise known as the degassed substrate)

These raw commodities can then be used to provide;

- **Electricity** – is the primary exportable commodity from an AD plant and eligible for ROCs.
- **Heat** – the exportability of heat is still at a very early stage, but the heat generated on-farm can be put to use for a variety of uses, for example in the heat-reliant mushroom industry.
- **Fertiliser** – material left over after the digestive process is rich in nutrients and can be used as a fertiliser is certain cases.

There are strict rules are in place to govern what matter (dry and wet) can be inputted into the digestors, but examples are silage grass, cattle slurry and certain food waste.

First and foremost, AD offers farmers the opportunity to be both the provider and utiliser of the renewable products created. Consequently, AD is ideally suited to NI farming. It can provide renewable energy, electricity and heat, but it also has a number of other benefits which it is difficult to attach a value to. Our farming industry faces rules and regulation arising from environmental controls which impact upon our day-to-day operations, two examples are;

- Nitrates Directive
- Water Framework Directive

In addition, there could be future obligations regarding Climate Change and AD may offer an opportunity for farmers to mitigate against these. AD would allow farmers to manage slurry and the potential risks associated with it. Not only does the digestion process capture the methane but also it mitigates against CO2 production. The AD process treats manure to the extent that when it's spread on the land, it has enhanced qualities; more effectively at eradicating weeds, decreasing the need for pesticides and also it is largely odour free. This allows farmers to grow grass to a better quality and this grass has the potential to be an energy source.

The AD process creates an energy which can be readily stored and, possibly most importantly, it is what is known as a dispatchable source of energy, this means that it can be turned on (or off) upon demand.

Uptake of AD in Northern Ireland

Yet despite these advantages and the fact AD has much to offer the NI economy, the uptake continues to be very slow. In March 2010, NNFCC produced a presentation entitled "Anaerobic Digestion and the Role of UK Agriculture". In this report, the NNFCC provided an update on the number of operational AD plants throughout the UK. According to NNFCC, there are 35 operational plants in Great Britain, and aside from AFBI at Hillsborough there would appear to be none in Northern Ireland.

The principle reason for this is the substantially high establishment cost and in particular the level of upfront capital commitment needed. The two ROCs currently allocated under the NIRO will not be enough to stimulate the technology as much as is required.

DETI Proposed Changes to the Northern Ireland Renewables Obligation

On 11 December 2010 the UFU responded to DETI's Proposed Changes to the Northern Ireland Renewables Obligation consultation stating that Anaerobic Digestion and Biomass should receive at least equal support in NI to that in GB and that we were already lagging behind our competitors in GB. In the response, it was stated that should Biomass and in particular AD be a more favorable option in GB compared to here, there was a real possibility that investment will be re-directed across to the mainland GB.

In the Consultation response, DETI stated that there was insufficient evidence provided by the respondents to enable DETI to consider scope for change for enhancing incentives for AD and therefore invited Evidence from Stakeholders including the UFU as to why AD should receive enhanced support.

DETI Call for Evidence on AD

The UFU highlighted the previously mentioned barriers and urged that DETI considers taking the incentives a step further and match AD with at least the same financial incentives which it provides for equivalent wind power, namely 4 ROCs.

In the submission, the UFU set out six different types of AD projects, and in doing so addressed each of the questions posed in the call for evidence. The varied projects took into account the differing costs associated with differing KWh output and also utilising various feedstocks. At the end of each example, an itemised payback for each project was set out. **The final figures highlighted the need for enhanced incentives/support for AD as paybacks were not being met under the current incentive mechanism levels.**

It was stated that existing projects should not be disadvantaged if additional financial incentives for AD are eventually introduced. Project developers need to be assured that if a new ROC band or Feed-In Tariff is introduced, then they will automatically move into this. Had it not been for these innovators, the technology would not have been in place to educate and encourage new AD facilitators.

Conclusion

UFU Renewables policy does not favour one single technology, but the UFU does feel that a measured mix is crucial if we are to meet our renewable obligations and targets in the years and generations ahead. One part of the mix happens to be Anaerobic Digestion, and as the major stakeholder, both in terms of feedstocks and final product utilisation, NI agriculture is in an ideal position to drive this forward. However, there are obstacles which need to be overcome, hence there is a need for enhanced incentives/support for AD.