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The Role For Renewable Transport Fuels In The UK

Please find below comments on the above paper that you published recently.

- I totally agree that there should be a 'joined-up' approach by Government on the future development of renewable energy. This is particularly important because certain lobby groups will always try to push Government policy towards vested interest solutions that may not make best use of valuable renewable energy resources.
As well as the DETR and the DTI, it is important that MAFF is involved in the formulation of any renewable energy policies that utilise biomass materials. In view of the current plight of the farming industry, I feel that MAFF's encouragement so far to farmers to grow energy crops has been extremely limited.
- In my view, to grow rape to produce rape methyl ester, for subsequent use as biodiesel transport fuel, is not a cost effective energy solution, even though it is being pursued in some other EU countries, including France, Germany and Austria. Converting rape oil to RME adds cost and also has a detrimental lifecycle effect. Because of the high cost of RME, relative to diesel, to make it a viable transport fuel in the UK would require a major reduction in duty compared to the current tax on diesel fuel. Other EU countries have had to adopt a low or zero tax regime to enable RME to compete as a transport fuel and a similar approach in the UK would have significant budgetary implications.
- A much better solution would be to use crude rape oil as an energy fuel to generate electricity. Crude rape oil is the oil that is initially extracted from rape seed, before it is further processed to provide food grade cooking oil.
For example, we have developed patented technology that enables crude rape oil to be combusted in compression ignition engines. The system is very efficient and provides a high degree of energy recovery in the form of heat and electricity.
- We estimate that 200,000 hectares of land, set-aside for growing rape as an energy crop, would produce about 320,000 tonnes of crude rape oil. Waste cooking oil could provide another 100,000 tonnes of fuel, giving an annual total of 420,000 tonnes of biofuel oil.
- 420,000 tonnes of biofuel oil would, in turn, be sufficient to generate about 145MW of 'green' electricity annually using engine gensets equipped with our combustion enhancement technology. 145MWe per annum would be a significant contribution towards the Government's proposed renewable energy targets.

- The viability of using rape oil based biofuels for power generation is dependent on a number of factors:

a) The grants given to farmers to grow rape on set-aside land.

From what I can gather, the current grant available to grow rape as an energy crop is far less than the support being offered by IVIAFF to farmers who grow the short rotation coppice that is used as a biomass feedstock for gasification and pyrolysis processes.

b) The sale price for 'green' electricity.

Unless a renewable energy project has already been granted a NFFO contract, electricity suppliers are reluctant to offer a premium price for 'green' electricity. This makes it uneconomic, at the present time, to use rape oil as a biofuel for power generation. The Suppliers Obligation, proposed by the DTI to encourage the growth of renewable energy, should help, however, it appears that the Obligation is unlikely to come into force until sometime during 2002.

c) Price relative to petroleum oils

Currently, crude rape oil costs about £300/tonne and waste cooking oil about £150/tonne, compared to gas oil at £200/tonne and heavy fuel oil at £120/tonne. The price of waste cooking oil is high at the moment because of its use as animal feed. Petroleum oil prices fluctuate because they are directly linked to the price of crude and this is currently falling.

However, I believe that with appropriate Government support and encouragement it could well become increasingly viable in the future to use rape oil and waste cooking oil as biofuels to generate renewable electricity, and also at a much cheaper cost than some of the other biomass based renewable projects, such as gasification and pyrolysis oil production, which are being heavily supported by Government.

The by-products from the production of rape oil, i.e. the straw and the meal, would also have commercial value either as animal feed or as a feedstock for gasification.

- The 'green' electricity produced from vegetable oil based biofuels could be specifically targeted by electricity suppliers to markets where it would have most environmental benefit, such as, for example, to charge battery powered vehicles.
- We intend to tender for the stock of OTMS tallow from the BSE cattle cull. The invitation to tender from the Intervention Board is due shortly. Tallow animal fat is difficult to burn and is similar in many ways to vegetable oils.
If our tender bid is successful, we will build a power station utilising the OTMS tallow as fuel in engine gensets equipped with our combustion enhancement technology. The power station would also incorporate a demonstration unit capable of carrying out combustion trials on other difficult to burn biofuels such as vegetable oils and waste cooking oil.

In the above observations I have briefly tried to show how vegetable oil based biofuels could be directly used to produce renewable energy, rather than processing the oils into methyl

esters for use as a transport fuel. To establish the best and most cost effective use for these valuable sources of renewable energy will therefore require a detailed, balanced evaluation.

I hope that you will find these comments useful.

Alan Parker