BIOFUELS BRIEFING

Report By: Director of Environment

Wards Affected

County-wide

Purpose

1. To inform members about the rapidly developing biofuels industry and how it may relate to aspects of Planning, Environmental Health and Trading Standards, the Council's commitment to reduce carbon dioxide emissions through the Carbon Management Action Plan and the recently adopted Herefordshire Partnership Climate Change Strategy.

Financial Implications

2. None.

Considerations

3. Progress with implementation of the Council's Carbon Management Action Plan (CMAP), the Herefordshire Economic Development Strategy and the Herefordshire Partnership Climate Change Strategy.

Background

4. The Council adopted its Carbon Management Action Plan in March 2005. The use of biofuels is one of the ways that Council emissions can be reduced.

5. The use of biofuels is growing because they reduce carbon dioxide (CO_2) emissions by replacing fossil fuels. Biofuels are produced from crops and do not increase CO_2 emissions simply because the carbon dioxide released when they are burnt is re-absorbed by the following year's crop.

6. Nationally, biofuels are not a complete answer to the reduction of CO_2 emissions, but their use can make a significant contribution in rural areas whilst presenting an important contribution to rural regeneration and economic development.

7. Biofuels can be produced from a wide variety of crops known collectively as biomass. These are best processed within 40km of the place where they are grown. This is a Defra recommended limit that helps to ensure that emissions from transporting biomass do not erode the emission savings resulting from the use of biofuels.

8. As a result, some (but not all) biofuels processing is best developed in rural counties such as Herefordshire. Biofuels are, therefore, likely to increase rural economic activity, including safeguarding existing jobs, whilst helping the creation of new jobs in emerging environmental technology industries.

9. The materials used to produce biofuels are classified by EU directive and include well-known sources such as sugar beet and other sugar-containing materials, rapeseed, grain, miscanthus (elephant grass) as well as the biodegradable fraction of domestic and industrial waste, waste cooking oils as well as biogas (or methane) from landfill sites and solid food and farm waste.

10. Biofuels can be used as blends with road-fuels in conventional petrol and diesel engines and as 100% substitutes for fossil fuel in small-scale power generation, usually in stationary engines fitted with generators connected to the local grid.

11. In December 2005, the Government announced its intention to introduce a Renewable Transport Fuels Obligation (RTFO). This will place an obligation on oil companies to include a minimum of 5% biofuels in all their petrol and diesel by 2010. The RTFO will allow producers of biofuels to receive approximately 30p for every litre produced, in addition to an existing fuel-duty reduction of 20p. These monies will be recycled to producers of biofuels by oil companies unable or unwilling to meet their annual biofuel percentage obligation. In this way a significant financial incentive is created to support the development of biofuels.

12. Biodiesel is the most publicised biofuel. It is manufactured by processing used vegetable or fresh rapeseed oil. Biodiesel has been blended with fossil-fuel diesel for many years. The processing of any waste material (beyond a lower limit) requires a license from Environmental Health and Trading Standards. This is particularly important with processing of waste vegetable oils and can extend to other materials classified as biofuels under the EU regulations. The use of waste vegetable oils as fuels for stationary engines used to generate power is currently a “grey” area under Defra interpretation of the regulations, so a wise approach is to always seek early advice from Environmental Health.

13. Internationally, bioethanol has now overtaken biodiesel as the leading biofuel even though very little is produced in the UK. This is mainly provided by imported ethanol made in Brazil from sugar cane. In the run-up to the European Directive (2003/30/EC) on biofuels, Brazil along with three other ethanol producing countries were provided with a temporary right to export to Europe a quota not exceeding 1 million tonnes per year. However, there is growing evidence that Brazil is diverting its own supplies as an oil substitute because of increases in the oil price, and currently most ethanol sold in the UK comes from France and Germany.

14. As a result, British Sugar has started construction of a sugar beet bioethanol plant in Norfolk and Wessex Grain have announced that they will be building a bioethanol plant using grain as the biomass in Somerset.

15. This is a clear trend and as a result the two main biofuels for road transport are increasingly likely to be supplied from large centralised plants, mostly located at or near coastal ports. Such large plants are unlikely ever to be situated in Herefordshire.

Local developments

16. There is an existing biodiesel processing company at Rotherwas Industrial Estate which processes biodiesel from waste vegetable oil collected from Herefordshire hotels and restaurants (including Herefordshire schools). This company is also developing plans to generate power from biodiesel in one or more small-scale stationary engines at Rotherwas. The plant would be located adjacent to Herefordshire Jarvis Services and would supply a significant proportion of the electricity requirements of Rotherwas businesses, although not directly.

17. There are outline plans for a rapeseed-biodiesel plant to be constructed in Herefordshire with a capacity of 8,000 tonnes per year of biodiesel. This would provide the entire biodiesel requirement of Herefordshire. The Company involved is in the process of seeking a Defra capital grant. They would source most of its rapeseed from local farmers.

18. As part of the Carbon Management Action Plan, the first stage of the Stretton Sugwas biogas (methane) power generation project has begun. New boreholes are being sunk to improve biogas collection in preparation for the eventual installation of a small-scale engine generator. This project could provide sufficient "green" electricity for 60% of Herefordshire's street lighting for about ten years. If installed before the end of March 2008, the output will qualify as "renewable" electricity and command a significant price premium.

19. Small-scale production and use of biofuels is considered appropriate for Herefordshire and these will include the use of new generation wood-fired boilers for heating. This is leading to a new industry for supplying wood-chip, which is a positive development for those managing Herefordshire's woodlands. Consideration of the conversion of a number of oil-fired boilers in schools is currently underway. Furthermore, a number of small-scale biomass-fired power generation systems are at various stages of planning throughout the county using a range of crops, including rapeseed oil by-products, wood chips and Miscanthus and straw. Although not generally considered as waste, every installation will be subject to review and/or licensing by Environmental Health and Trading Standards in terms of the emissions of normal products of combustion and other wastes.

20. Outline plans have been submitted to AWM by developers for an Environmental Technologies business park in the county which will include biofuels as a key driver, along with secondary sectors including wider non-food crop industries. The plans extend to a £25 million phase 1 development which is designed to include a cluster of small-scale biofuel industries, including associated industries such as "crop" pharmaceuticals. The site is intended to be carbon neutral.

Regulatory considerations

21. Local developments are likely to be initiated by the private sector without the direct involvement of Herefordshire Council. However pre-planning meetings with Council services such as Environmental Health, Planning and Economic Development should be actively encouraged as they allow prospective developers to explore projects in a positive and integrated way, which will assist in minimising future difficulties.

22. Some biofuels use materials "arising" from other process, e.g. chipboard manufacture. In such cases although these materials may qualify as renewable fuels they may also be regarded as waste for regulatory purposes and environmental protection and require Waste Management Licencing (Environment Agency).

23. A planning application is required for power generation by anyone other than statutory undertakers. Although small-scale power generation is unlikely to come within the terms of the Environmental Impact Assessment (EIA) regulations, the applicant still has to provide sufficient information for the Council to be satisfied that there would be no adverse environmental effects. There is also distinction in planning terms between "waste oil" (i.e. previously used) and new oil, and also between vegetable oil and mineral oil.

24. Biofuel manufacturing or combustion plants are also likely to require a permit to operate under the Pollution Prevention and Control Regs. Environmental Health's Air & Water Team or the Environment Agency would issue this licence.

Potential benefits

25. A significant number of local authorities have identified the "non-wind turbine" economic regeneration potential of renewable energy including biofuels. Herefordshire Council should take a proactive role in the evolution of these new industries which, to a significant extent, need to be sited close to the source of raw materials.

26. No formal assessment of the employment potential of the sector has been yet been undertaken locally. Such a study would provide a firm foundation from which to integrate the biofuel sector within the Herefordshire Economic Development Strategy. A number of Regional Development Agencies have already made similar assessments for their own areas. Based on typical figures from these assessments, the employment potential in Herefordshire could be considerable, ranging between 750 and 1000 new and safeguarded jobs between 2006 and 2012.

27. Development of local biofuel capacity would additionally assist in achieving the objectives of the recently agreed Herefordshire Partnership Climate Change Strategy, which is supported by the Council's own Carbon Management Action Plan.

Regional dimension

28. The Regional Energy Strategy for the West Midlands (2004) sets a stretching regional target of 5% renewable generation by 2010 (national target is 10%) and 10% by 2020 and calls upon local authorities "to encourage proposals for the use of renewable energy resources, including biomass, through their Development Plans" (see also RPG11). If regional targets for renewable energy were devolved to a county level, biofuel developments would help Herefordshire to meet them.

"Because of its geography the West Midlands has (relative to other regions) few economic wind resources. Since wind energy is currently the main and most cost-effective source of renewable energy, in the short to medium term, renewables are only expected to make a relatively small contribution towards achieving significant carbon dioxide reductions in the region. Biomass has an important part to play in the renewable energy mix of the region in the medium to long term. There are significant opportunities for rural communities and businesses to develop biomass as an energy resource, from wood and forestry residues in the forestry sector and from non-food energy crops (miscanthus, short rotation coppice). Landscape character and biodiversity considerations should be taken into account for all of these prospects. (WMRES Section 3.2.3)

RECOMMENDATION

. **THAT The report be noted, subject to any comments Members may wish to make to the Cabinet Member, Environment.**