

**Local Government and Public Services Committee
LGPS(2)-06-06(p.2b)**

Meeting date: Thursday 30 March 2006

Venue: Committee Room 3, Senedd, National Assembly for Wales

Title: Proposed EU Directive on Green Vehicles - Denbighshire County Council

Environmental Policy

Policy Statement

Denbighshire County Council is committed to the protection and enhancement of the local and global environment and to the long term goal of achieving a sustainable society.

To meet this commitment the Council will aim to:

meet all relevant regulatory requirements regarding the environment, minimise the environmental impact of all its activities and strive for a continual improvement in environmental performance and positively encourage good environmental practice in the Council's activities and in the wider community.

Aims

- 1. Goods and Raw Materials:** Minimise the consumption of raw materials, use recycled materials wherever appropriate and purchase goods which cause the least damage to the environment.
- 2. Energy:** Continue to reduce the consumption of energy through greater energy efficiency and support the development of renewable energy sources.
- 3. Transport:** Reduce the impact of transport on the environment and develop a balanced and integrated transport and land use system.
- 4. Land and Development:** Promote development that is sustainable by maximising the re-use of urban and derelict land and buildings and minimising the impact of new development.
- 5. Conservation:** Safeguard and enhance the natural environment and built heritage.
- 6. Pollution:** Minimise pollution of air, water and land from the Council's own activities and seek to minimise pollution from other sources.
- 7. Waste:** Reduce waste; re-use and recycle wherever possible; and ensure that the transport and disposal of waste meets regulatory requirements.

8. Nuclear Processes and Materials: Support the development of a nuclear-free world in which nuclear weapons and nuclear energy would have no place.

9. Environmental Awareness: Promote awareness of environmental issues and of the environmental role of the Council and of individuals.

10. Environmental Education: Continue to develop environmental education.

11. Environmental Information: Make available better information about the environment.

12. Management: Ensure that environmental factors are taken fully into account in the management of the Council.

13. Partnership: Develop partnerships with all sectors of the community to promote the concept of sustainable development.

Principles of action for environmental management

The methods through which the Council will implement its environmental policy and aims will be based upon the principles of action set out below. These principles set out the ways in which the Council will deal with environmental issues and the good management practices it will adopt in doing so.

1. The Council will aim to adopt the best known environmental practice wherever this is economically viable.
2. All new policies, activities and practices will be assessed for their effects on the environment.
3. The environmental impact of current Council activities will be assessed and monitored by means of regular environmental audits to ensure compliance with the environmental policy and regulatory requirements.
4. Overview and co-ordination of the implementation of the environmental policy throughout the Council will be carried out by the Agenda 21 Panel, Agenda 21 Officer Working Group and the Agenda 21 Officer.
5. A sense of responsibility for the environment shall be fostered amongst elected Members and employees at all levels by means of information provision and training programmes.
6. The Council will take measures to prevent, eliminate or reduce pollution and waste generation and to conserve resources wherever possible.

7. The Council will strive to protect the health and safety of its employees and the general public by taking measures to prevent and limit the effect of environmental accidents.

8. The Council will endeavour to ensure that its own environmental standards are upheld by all contractors working for it.

9. The Council will consult and liaise with other organisations and the public on its environmental policy and programme.

Foreword

Denbighshire County Council has since it became a Unitary Authority in 1996 looked at the 'problem' of reducing the impact upon the environment by road vehicles operated by and within the County in a number of different ways. Some of the information outlined below may on first glance not appear to have any direct bearing on 'green' vehicles but it is felt that any initiatives which help reduce the impact of transport upon the environment must in some way help.

The following information outlines some of the more important areas undertaken and gives a brief explanation as to the reasoning behind the decisions made.

The Council formally adopted their Environmental Policy 6 years ago, with thirteen aims the policy clearly sets out the Council's intentions with regards to protection and enhancement of the local and global environment. The policy also details the principles for action. The decision to develop the 'green fleet' approach in Denbighshire has been taken within the policy framework and in particular to;

- Reduce the impact of transport on the environment and develop a balanced and integrated transport and land use system
- Minimise pollution of air, water and land from the Council's own activities and seek to minimise pollution from other sources
- Continue to reduce the consumption of energy through greater energy efficiency and support the development of renewable energy sources

Members over the years have been very supportive of the schemes put forward and the following two extracts from Denbighshire's Community Strategy indicate this commitment.

- 'An integrated, sustainable, accessible and adequately maintained highways and transport network'.
- 'Improved and a sustained rural and urban environment, both build and natural, resulting in a beautiful, clean and wellkept County'.

Denbighshire's boundaries stretch from the coastline of Rhyl and Prestatyn in the north down through Denbigh and Ruthin to Llangollen and Corwen in the south a distance of some 70+ miles. It has two main service areas which are mainly used by front line services as vehicle parking areas, storage facilities for fuel, tools, equipment and administration.

Operational Changes

- 1] One of Denbighshire's first objectives was to look at the age profile of its Fleet and set out a 7 year procurement plan. This plan allowed for a standardisation programme to be introduced which phased out the older petrol driven cars/vans giving way to a fleet completely driven by diesel.
This action allowed complete flexibility within the Authority as at that time the depots based in the north and middle of the County only had fuel storage facilities for 'white' and 'red' diesel. Departments are now free to move vehicles around the County and still access fuel via the Authority's bunkering system.
- 1.1] A secondary action involved the procurement of low-sulphur fuel and the modernisation of the fuel delivery system which allows departments clear information on fuel usage for every vehicle.

- 1.2] Currently Denbighshire is looking at the introduction of a Bio-fuel mix of fuel for its vehicles. It was proposed in December 2005 to carry research into the use of a 50%/50% mix. This gave rise to a number of questions on vehicle warranties, maintenance schedules and how the fuel would react in the cold weather. To date Denbighshire is still considering trials however at what mix level has still to be decided.

- 2] The second area was within the Highway maintenance/Winter maintenance delivery. The Authority ran at that time 16 dedicated gritters and 7 Highway maintenance tippers in excess of 12 tonnes. Proposals were put forward and accepted to allow for:-
 - 2.1] Highways to review the number of routes it had for winter maintenance work

 - 2.2] The phased introduction of dual-purpose vehicles which would allow for both operations to be undertaken by the same prime mover. Each vehicle has two bodies one for tipper/general duties and the second for winter maintenance work. This whole system needs only one other element and this was provided by a number of different de-mounting systems which to date has allowed Denbighshire to reduce its overall 'Fleet' size for Highway maintenance/winter maintenance from 23 vehicles overall down to 15 de-mount vehicles and 1 dedicated winter maintenance gritter an overall saving of 7 vehicles in total.

 - 2.3] Prior to the start of this winter maintenance season all DCC vehicles were fitted with trackers. These devices will allow for further refinements to be made in a number of key areas such as route scheduling and optimising vehicle movements, and the control and recording of operations.

- 3] To complement the Authority's procurement plan [as detailed in 1 above] Denbighshire's Fleet Management section also introduced more stringent measures with regard to vehicle selection. Areas such as driver and passenger safety criteria were introduced along with the introduction where ever possible on vehicles above 7.5 tonnes was the use of electrical/mechanical brake retarders and anti locking brakes systems [ABS].
 - 3.1] The Authority has taken the issue of driver training very seriously and has appointed a Driver Trainer. Policies have been introduced whereby all drivers must undertake an assessment before being allowed to drive any Authority vehicle with more than 8 passenger seats. Any and all vehicle related accidents are investigated and the results reported to the Fleet manager, along with full day and half-day seminars held for all employees on safe driving techniques.

 - 3.2] Also introduced on to all vehicles was a 'Driven Well' scheme. On the rear of each vehicle was/is placed a transfer which incorporates a free phone number this allows anyone to contact the Authority; 24hours - 7days per week, with a complaint or to praise the actions of any of the Authority's drivers. All contacts are recorded and any complaints are investigated.

- 4] In 2002 Denbighshire took the first steps towards the fitment of particulate traps to its Fleet. Initially the funding via the Welsh Assembly and the Energy Savings Trust was only available for vehicles in excess of 18 tonnes but representation was

made to the Assembly to include vehicles between 3.5tonnes – 18 tonnes [as available in England] which was accepted so when final agreement was reached and the programme came on line in 2004 Denbighshire became the first Authority in the UK to carry out this extensive retrofit to 54 vehicles within a weight range of 3.5 tonnes through to 26 tonne refuse collection and winter maintenance vehicles.

- 4.1] To achieve this ambitious programme over such a wide selection of vehicles all of which operate under quite different circumstances required two different technologies. Both had been approved under the Clean-up programme but had quite different ways of achieving the desired results. The EMINOX CRT [continuously regenerating trap] system simply employed a 'precious' metal [platinum] filter to trap the harmful particles and then employed the heat from the exhaust gases to regenerate the filter.
- 4.2] The ADASTRA system [although able to achieve the same results as the eminox system] employs 3 quite different techniques firstly it does not require any precious metal as used in the Eminox CRT system and secondly incorporates an additive which is combined with the vehicles fuel system and upon combustion this additive combines itself to the particles of soot and is in turn is trapped in a ceramic filter contained within the vehicles exhaust system.
- 4.3] The third difference is the operating temperature at which the 'systems' regenerate [i.e. burn off the particles within the filter] basically the Eminox CRT system requires a prolonged period of operation within its temperature window as opposed to the Adastra system which only requires short periods within its window to regenerate.
- 4.4] A table has been attached to this report which indicates a total of 474 grammes of soot removed from the atmosphere year on year by the 54 vehicles already fitted with the devices.
- 5] Finally I can report to the Committee that the Authority is about to open [in late April early May 2006] a brand new vehicle maintenance facility. This workshop will incorporate facilities which will allow for the testing of L.G.Vs [large goods vehicles] to include Buses and Coaches along side a test lane for cars and vans. It will also allow the Authority to move to shift pattern of working within its vehicle maintenance section which in turn will allow for all routine maintenance and any running repairs to be completed outside normal working hours. By adopting this method of working it is envisaged that departments may be able to reduce the number of vehicles operated.

Issues Arising

Many of the operational changes detailed above have been accomplished because of a desire to improve the service internally to user departments and to the Public.

People do not like change and consequently not all have been delivered on-time however once introduced and allowed time to 'bed-in' now are taken as normal procedures, this was particularly noticeable with the dual – purpose vehicle project, up until the first vehicles were delivered drivers simply used a vehicle during the day for Highways work and a second for gritting purposes. This had a number of flaws.

- A] Winter maintenance vehicles were often left not fully unloaded and seldom washed down this in turn led to and an increase in vehicle corrosion. Drivers would simply upon returning from the early morning gritting run park-up the dedicated gritter and take out their normal 'tipper'.
- B] Vehicle costs and reliability. Obviously there is the element of procurement. Should DCC had carried on as 'normal' and purchased dedicated winter maintenance vehicles then as a direct result would have incurred further costs in the replacement of the tipper fleet also. Also the element of reliability must play a part, normally when vehicles such as dedicated gritters stand idle over the summer period they will inevitably incur minor problems once returned to service, by using the same prime mover for both operations these minor problems are overcome.
- C] Downtime due to body swapping. This above all proved the most difficult hurdle to overcome as a culture needs to be created whereby drivers made the transition to swap bodies [should there have been a need to carry out winter maintenance activities that night] before leaving for home however as indicated above the body-swap systems have developed and now this issue has been overcome.
- D] On the positive side as indicated in 4.4 above [and in the table attached] a great deal of particulates have been removed from the atmosphere, the fitment of these 'traps' also allows the Authority to claim back via a reduced emissions certificate a reduced rate of VED [vehicle exercise duty] in fact this amounts to £9,500 per year and it should be noted that only 29 vehicles of the 54 fitted are eligible for this rebate.
- E] The Authority has also reduced the amount of LGVs it operates via the introduction of Dual-purpose vehicles.

The Future and the Proposed New Legislation

It is hoped that the 'grant' system which was operated via the Energy Savings Trust and the Welsh Assembly Government up until the end of March 2005 will soon be reinstated. In essence since the suspension of this scheme little has been achieved by Denbighshire within the area of vehicle emissions. The Authority has taken delivery of a further 12 vehicles in excess of 3.5 tonnes and has been closely monitoring developments with a view to once a scheme is announced making an application for further grant funding.

In October 2006 the new Euro 4 emissions limits will become law and these new engines will greatly reduce the particulates released into the atmosphere, however there are operating in Wales many hundreds possibly thousands of vehicles still at Euro 3 levels and quite a number at Euro2 levels. Again may I draw your attention to the table of emissions reductions achieved by Denbighshire reductions of [474 grammes of soot] by 54 vehicles.

For information.

The cost of a retrofit particulate trap for a typical Euro 3 18 tonne 4X2 truck was £3,540 the reduction on VED [once a reduced emissions certificate is attained] was £370 for an operator to repay this outlay solely based on the decrease in their VED will require him to run this vehicle for 9.5 years and this is without funding any maintenance for the filter.

Turning to the proposed legislation to be implemented in 2008 and the proposals concerning diesel cars in particular. One can only welcome the principle and ask if the technology required to achieve the 5mg/km over the 25 mg/km for Euro 4 engines will be in any way linked to the current trend to use additives or other chemicals to the fuel system and if so what infrastructure will be required to be in place to 'service' the users. In looking at the HGVs these proposals must also be welcomed however in looking at the criteria for fuelling these new EEVs a couple of questions come to mind;

- 1] Has there been any indication at what level of bio-fuel mix will be required/accepted?
- 2] Will this be readily available through suppliers [As indicated in my report DCC has already looked at this and currently and suppliers offering a mix greater than 5%/95% are few].
- 3] This legislation will inevitably drive up the cost of procurement to Authorities, and this will also impact on the rates charged by the Hire market and also have a further knock on effect to any contracts let by Authorities which require vehicles.
- 4] Cost of maintenance and training of mechanics. Special tools may be required especially in the area of diagnostics.
- 5] Should there be a significant move away from diesel driven vehicles Authorities will need to look at further investment in 'fuel' bunkering and delivery facilities.
- 6] What are the manufactures reactions to this legislation? Do they feel they will have power trains ready to supply the industry by early 2007 to allow all to comply with quotas?
- 7] Who will have responsibility for monitoring compliance?

Emission g/km = grammes of soot (PM10) emitted at street level per kilometre driven measured on Millbrook real world driving cycle.

Vehicle category	Type of operation	Total Kg Soot removed
Euro 3 +7.5t	Gritter, Refuse, Tipper, Street cleansing	162
Euro 2 +7.5t	Gritter, Refuse, Tipper, Street cleansing	267
Euro 2&3 sub 7.5t	Social services, Mini Buses	45

Based on the Denbigh fleet size and vehicle types that Fuel Borne Catalyst systems fitted the above reductions equate to 474kg of soot removed from the atmosphere in the Denbighshire area every year.

Factoids

Health

- The health impacts of traffic pollution cost the UK £11.1 billion each year.
(Environmental Transport Association)
- Air pollution causes between 12,000 and 24,000 premature deaths each year in the UK.
(Committee on the Medical Effect of Air Pollutants)
- 5.2 million UK residents have asthma, 2.6 million are severely affected
(World Asthma Day)
- More people are affected by asthma in Britain than anywhere else in Europe.
(World Respiratory Society)
- There was a doubling of asthma cases in children under five during the 1990s. One in eight children now suffer from the condition, a total of 1.4 million. Eighty-one per cent of people with asthma say pollution brings on asthma symptoms.
(National Asthma Campaign 200)
- Children living on heavily trafficked streets are more likely to develop chronic respiratory problems.
(Occupational and Environmental Medicine)
- Emissions have a direct link with the one in four people in the UK who die from respiratory diseases.
(Energy Saving Trust)
- Across the UK, road transport is to blame for 23% of particulate matter (PM10) emissions. This pollutant has long been linked to respiratory problems. These levels are even higher in towns and cities, reaching 69% in London, for example.
(Energy Saving Trust)
- Particulate Matter is responsible for 100,000 premature deaths in Europe each year.
(Ms Wallstrom, European Environment Commissioner)