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Llywodraeth Cymru
Welsh Government

Eich cyf/Your ref P-04-326
Ein cyf/Our ref JG/05688/11

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28 July 2011

Dear William

P-04-326 No to Incineration

Thank you for your letter of 29 June 2011 concerning the petition received from Friends of the Earth in respect to the Welsh Government's policy on energy from waste (EfW) in Wales.

In June 2010 the Welsh Government published "Towards Zero Waste", the overarching waste strategy document for Wales. The draft document was issued for full public consultation from 29 March to 22 July 2009, and was accompanied by a sustainability appraisal (incorporating a Strategic Environmental Assessment) and a Health Impact Assessment.

The final version of Towards Zero Waste sets our strategic direction for waste and resources in Wales, aligning with "One Wales: One Planet the Sustainable Development Scheme for Wales".

Our main targets within Towards Zero Waste are:

- By 2025, we intend to have made a substantial reduction in waste produced, and also reduced landfill to as close to zero as possible, maximising recycling to at least 70% across all waste streams and minimising the production of residual waste – phasing it out of landfill sites to high efficiency EfW plants

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- By 2050, we aspire that as a minimum we will be living within our environmental limits (one planet living) and aiming to phase out residual waste through actions on sustainable consumption and production

The Welsh Government's policy preference for high efficiency EfW plants to manage the residual municipal waste left after high levels of recycling is based on evidence drawn from the sustainability appraisals carried out for the three Regional Waste Plans, and on several life cycle assessment studies, including ones carried out to support the recent consultation on the draft Collections, Infrastructure and Markets Sector Plan. Of the various residual waste treatment options modelled (which included treatment technologies favoured by others, for example mechanical biological treatment), high efficiency EfW performed the best in sustainable development terms including in respect of greenhouse gas emissions.

The Welsh Government's policies on waste, including those on the use of EfW were endorsed, in respect of the consultation draft of Towards Zero Waste, by the National Assembly in Plenary on 19 May 2009 and, in respect of the final version of Towards Zero Waste, by Cabinet on 15 March 2010. All responses to the consultation on the revised waste strategy and associated sector plans were taken very seriously, and the views of opponents of EfW and others are regularly taken into account and considered.

In respect of concerns expressed on the impact of EfW plants on health, the Welsh Government is guided by the public bodies tasked with ensuring the protection of human health and the environment. In this instance we place strong weight on the considered and expert views of bodies such as the Health Protection Agency (HPA), Health Protection Wales and the Environment Agency (EA). They base their views on the evidence available to them and their analysis of it. Based on the expressed views of the HPA and EA, and the level of protection afforded by the issuing and enforcement of an environmental permit, the impact of modern well regulated EfW plants is likely to be very small, if detectable and will not cause significant adverse effects on human health or the environment. This conclusion is also based on Health Impact Assessments that were carried out during the development of the three Regional Waste Plans, Towards Zero Waste, and the associated sector plans, all of which were subject to public consultation.

The Welsh Government is robust in its commitment to preventing waste, maximising recycling and minimising the residual waste that requires treatment. Towards Zero Waste sets challenging and stringent waste prevention and recycling targets and the Welsh Government has made the recycling targets statutory for local authorities under the Waste (Wales) Measure 2010. The Welsh Government is the only UK administration to make such recycling targets statutory – demonstrating its commitment to recycling as a priority after waste prevention. These statutory recycling targets effectively cap the amount of residual municipal waste sent to energy recovery, ensuring that the priority is given to recycling. Local authorities face financial penalties for not meeting the recycling targets. Wales has thus done more than the other UK nations to minimise the proportion of municipal waste that goes to EfW plants.

Wales is also currently the only country in the UK where every local authority provides a separate food waste collection service. Currently 82% of households in Wales have a separate food waste collection service, and this should reach 90% by the end of this year. This is waste that will be diverted away from both landfill and incineration.

We must meet the Article 5 EU Landfill Directive targets to reduce the landfilling of biodegradable municipal waste and the use of EfW for the remaining residual waste uses technologies tried and tested in mainland Europe where EfW plays a significant role in management of municipal waste, often at levels higher than the 30% level we have planned

for. The EU countries with the highest levels of recycling also tend to have the highest levels of energy from waste, and lowest levels of landfill.

Although the Welsh Government has given a clear signal that it finds high efficiency EfW a sustainable technology for the management of residual municipal waste, local authorities are free to choose for themselves which technology they should use. The Welsh Government's Residual Waste Procurement Programme that supports local authority procurement consortia (of which Prosiect Gwyrdd is one example) provides a National Evaluation Framework for the local authority consortia to use to evaluate bids from tenderers. Deliverability, bankability and track record of technologies are some of the criteria used to assess the bids. Therefore the type of technologies advocated for example by Friends of the Earth (such as mechanical biological treatment) and others are free to be included in tender solutions and, if proposed, would then be judged on their merits against other bids using other technologies.

Ministers have and will continue to meet groups who wish to discuss the formulation and review of policy with us. For example, in relation to EfW, my predecessor, Jane Davidson, and her officials held a round table discussion on EfW policy in July 2008. Attending were representatives of Friends of the Earth, the Environment Agency, two waste consultancies and Cardiff University Engineering Department. This meeting, together with responses from the consultation on both Towards Zero Waste and the Municipal Sector Plan, Part 1, helped shape the Assembly Government's policies on EfW that were published in Towards Zero Waste in June 2010. The meeting discussed the various merits of different technologies for managing residual municipal waste, and Friends of the Earth (FoE) put their case for their preferred technology, mechanical biological treatment (MBT). Welsh Government representatives explained why this was not the technology preferred by the Welsh Government, on the grounds of greenhouse gas emissions and cost.

The Minister again met senior representatives of FoE including Gordon James, Director Wales, on 2 December 2010. There was no new evidence put forward by FoE in respect of EfW and the Minister confirmed the Assembly Government's approach set out in Towards Zero Waste.

The attached Annex provides further more detailed information on the additional points raised by FoE.

I hope this provides the response that you require. Please contact me again should you require anything further.

Best wishes,

John

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Encl: Annex addressing the FoE points

ANNEX

Climate change

The 2006 Eunomia report was taken into consideration and has been previously discussed with FoE. Life cycle assessment (LCA) modelling carried out for the development of the 2008 Regional Waste Plans and for the Welsh Government shows that EfW performed better in greenhouse gas emission terms than other treatment processes, for example mechanical biological treatment. The LCA model used met relevant ISO standards.

The UK National statistics authority published its annual emissions statistics for 2009 which show that landfills in the UK emitted 15.9 MtCO2e (million tonnes carbon dioxide equivalent), whilst energy recovery from waste fuels were responsible for 0.3MtCO2e.

Toxic emissions and air pollution

EfW facilities are the most highly regulated industrial plants in the UK in terms of their emissions to atmosphere and are required by law to monitor the levels of any substances emitted, including all particles and dioxins.

All EfW plants must comply with the European Union's Waste Incineration Directive (WID). This directive ensures that the gases (flue gases) produced by the facility and released into the air are thoroughly cleaned and constantly monitored. Emission levels allowed by the directive are a lot stricter than those for coal fired power stations. The Environment Agency regularly checks that each facility has cleaning systems that are in good working order and that records are kept of all emissions.

In respect of the control of ultra-fine particle emissions from incinerators, the Environment Agency (EA) controls total particulates, which includes both PM10s and PM2.5s (ie. particles of a 10 micron and 2.5 micron size respectively; one micron is a millionth of a metre), through an emission limit value incorporated in the environmental permit for the installation. The EA, when determining permit conditions, ensures that the impact assessments make the conservative assumption that 100% of the WID dust emission limit value is PM2.5s, which is the "worst case". Assessments made in this way are checked (using dispersion modelling) against the PM2.5 UK Target Value of 25 $\mu g/m^3$.

The Health Protection Agency (HPA) has a position statement on the impact on health of emissions to air from municipal waste incinerators. After reviewing the latest literature in 2010 the HPA's general position remains unchanged: "Modern, well managed incinerators make only a small contribution to local concentrations of air pollutants. It is possible that such small additions could have an impact on health but such effects, if they exist, are likely to be very small and not detectable." The HPA continue to review all available literature/evidence regarding incineration on a frequent basis. The following link is for the HPA's website and includes links and references to a number of detailed documents and research papers carried out by independent scientists and medical professionals regarding the health impacts of emissions from municipal waste incinerators http://www.hpa.org.uk/ProductsServices/ChemicalsPoisons/IntegratedPollutionPreventionControlIPPC/ippcIncineration/ .

Regarding incinerator bottom ash (IBA), this can usually be processed and recycled as a secondary aggregate with the main area of application being road construction; it can also

be used in masonry blocks. The proportion of IBA to incoming waste is, on average, about 20% by weight.

The fly ash is a much smaller proportion, at around 2.5% by weight of the incoming waste, The fly ash is normally taken by sealed tanker to a secondary treatment plant, and then to a hazardous waste landfill. It is classed usually as hazardous because it is very alkaline, but this means it could also be used in other industrial processes to neutralise acidic materials.

Hazardous waste should ideally be managed in the nearest appropriate installation permitted to handle that waste, but commercial and/or economic reasons mean this may not always be practical. Planning policies in Wales encourage the development of hazardous waste facilities in Wales, but recognise that due to economies of scale and commercial considerations, it is acceptable for hazardous waste to be managed outside of Wales. Notwithstanding the above, Wales manages the majority of its hazardous waste arisings within Wales, and imports more waste for treatment than it exports (mainly to England). Of the hazardous wastes produced in Wales, around three-quarters of all these wastes are reused, recycled or recovered.'

Disincentive to recycling and waste reduction

The Welsh Government places a very high priority on waste prevention and recycling, and aims to strictly limit the amount of non-recyclable waste that is sent for energy recovery. Its policies, targets and actions are robust, and are specifically aimed at reducing the amount of residual waste produced in Wales – a key aim of "Towards Zero Waste".

The Welsh Government has set all local authorities legally-binding targets of 70 per cent recycling by 2025, which means no more than 30 per cent of Wales' municipal waste could be used for EfW. Wales is the only country in the UK to set such statutory recycling targets.

Our priority is to reduce waste and recycle everything which can be recycled. For waste left after recycling, EfW is higher up the waste hierarchy than landfill. EfW is not an alternative to recycling. Using non-recyclable waste as a resource makes economic and environmental sense, and that high-efficiency EfW plants are a better option than burying waste in landfill

EfW is an integral part of the management of waste in most EU countries, with many European cities containing large EfW plants sited in their midst. EU countries and regions that have the highest level of recycling almost without exception have the highest levels of EfW and lowest of landfill. Many are most held up as exemplars of sustainable waste management in terms of their high recycling levels. For example, Flanders has levels of 70% recycling, close to 30% EfW, and close to zero landfill. Denmark has 30 EfW plants supplying heat to neighbouring properties. Germany and most of the Scandinavian countries also have significant levels of EfW.

Inefficient energy production

EfW plants can range in thermal efficiency from around 20% to 80% depending upon the relative mix of electricity production and heat use; the highest efficiencies are generated from heat only plants. In comparison, coal fired power stations in the UK have a typical efficiency of 36-39% on electricity production only, with little use of CHP in the sector. Gas fired power stations range from c.42% (Open Cycle Gas Turbine) to a theoretical maximum of c.60% (Closed Cycle Gas Turbine), again with little use of CHP evident within the sector.

Anaerobic digestion (AD) is already strongly supported by the Welsh Government through the Food Waste Treatment Procurement Programme, and via grants from the Waste and Resources Action Programme (WRAP). Welsh Government policy is for the separate collection of all food waste and for it to be sent to AD plants, and not incinerators or landfills. 82% of households in Wales have a separate collection service for food waste, and this should rise to 90% by the end of the year.

Economics and inflexibility

Within the waste infrastructure procurement programme, each of the food waste treatment hubs and residual waste treatment consortia are setting Guaranteed Minimum Payment (GMP) levels (based on a minimum tonnage).

A GMP is required to raise funding for each project – whether from internal corporate finance, or external project finance. Bidders will use this payment level to recover fixed costs and make their required rate of return. The lower the tonnage upon which the GMP is based the higher the gate fee will be for that price band. The lower the tonnage upon which the GMP is based the greater the perceived risk of the project to bidders and consequently this would likely be reflected in a higher gate fee bid for all bands.

Projections relating to the future levels of contract waste arisings are being made by the local authorities taking into account future household/population numbers and local demographics. In the case of the food waste projects this includes an assessment of capture rates. For the residual waste projects it assumes that Welsh Government recycling targets will be achieved (with a contribution from bottom ash recycling).

In framing their residual waste treatment procurements, local authorities were advised to be aware of the Welsh Government's waste reduction targets set out in Towards Zero Waste. As such, local authorities are using their own judgement on likely future tonnages of residual waste arisings in their area and the treatment capacity they need to procure.

The minimum tonnage level upon which each project sets its minimum payment varies for each project, but is typically c. 70-80% of the lowest annual projected level of contract waste. This level is fixed for the 15 or 25 year contract period for food waste and residual waste projects respectively. In each case, the hub/consortium must be satisfied that this level is set such that it will not be breached i.e. that projects will always have more waste available than the minimum.

The contracts contain a comprehensive change protocol to provide flexibility to manage change and the allocation of risks and costs between the different parties. Examples of potential changes include change in law, authority change and contractor change.

Job creation and socio economic effects

The Welsh Government's policy preference is for recycling and that is why it has set a recycling target of 70% for all wastes, the highest level of any UK nation. Recycling can create up to 250 jobs for 100,000 tonnes of waste. However for the waste that can't be recycled EfW can create between 20-40 jobs per 100,000 tonnes as opposed to landfill which creates approximately 10.

Many European cities have large incinerators in their midst where they are valued for their job creation and for dealing sustainably with the waste that society produces. Many are the subject of civic pride, and enhance the socio-economic health of their area.