

Consultation on petition P-04-341 Waste and Incineration  
Response from South Wales Without Incineration Network

## Welsh Assembly Petitions Committee P-04-341 Waste and Incineration

January 2012

### Submission by South Wales WIN – Without Incineration Network

South Wales WIN is part of UK WIN, a Network of community groups concerned to contest biased and faulty information from the incineration industry that's often repeated by government bodies (especially the WG) and to give information on alternative waste treatment methods. Much of our information is on our websites <http://SouthWalesWIN.com>, [www.ukwin.org.uk](http://www.ukwin.org.uk) where it is open to scrutiny by members and experts, including waste industry professionals. We are able to give a presentation of the complex case and take questions from the Committee.

We have been involved in the health-safety arguments against Viridor's/Splott incinerator and, leaving the expert evidence to Prof. Howard, show issues that the Health Board and their 'expert' advisors were unable to address. We base arguments on the pro-incineration bias in the OBC (Outline Business Case) for Prosiect Gwyrdd. While never subject to significant scrutiny by the member Councils, this case was examined and accepted by WAG - despite big changes since it was framed, in particular with waste flows changing from the ever-increasing assumption to continual decreases in line with Welsh policy, this OBC remains the official rationale for the waste incinerator proposals of P. Gwyrdd.

Though the previous case to the Petitions Committee over the Regional Waste Plans occurred before the South Wales WIN network formed, some members took part in that Petition – which was in effect blocked by WAG – so we include evidence from that time.

The pro-incineration policy was developed by WAG prior to the credit crunch. As financing the incinerators relies on private capital and WAG/WPPO requires use of PFI guidance, it is anomalous that WAG has failed to reassess P. Gwyrdd's incinerator project in parallel with England (where half the Waste-PFI projects have been dropped). Politicians told us no longer 'business as usual' post-credit crunch, while capital costs have jumped to make PFI a poor option. It would saddle local authorities with high waste disposal costs and guaranteed tonnages that limit recycling over 25 years of the contracts. WAG brought in Covanta, the major US incineration company. Its policies have resulted in P Gwyrdd's selection of the major multinational waste companies, amounting to globalised 'business as usual' and excluding Welsh businesses from any of the action. It's also a high carbon option, which would saddle Wales with higher carbon generation than coal-fired plants, but concealed by WAG in spurious accounting and offsetting. The Petitions Committee has therefore to grapple with a large subject - but it has the chance to challenge the WG to cease protecting a poorly-judged policy that should have been abandoned post credit crunch, and to rescue Wales from a high-carbon waste policy.

The second reason for ruling out 'business as usual' is the commitment to 'One Planet Living', to reduce the ecological footprint of Wales to a *fair earthshare* of below 1.88 global hectares/capita from the 2003 level of 5.16 global hectares/capita. To achieve this, wasteful-living is to be strongly cut back; also policy for a Low Carbon economy was adopted. WAG accepted the Env&Sustainability Committee's inquiry (into *Carbon Reduction in Wales*, Oct.2010) recommendation to

“review other policies which impact on economic development and carbon reduction with a view to aligning them to the revised economic policies”.

We are waiting for the WG to do so regarding waste policy.

#### **1. Unfair bias of WAG, based not on evidence but the officers' pro-incineration view**

- blocked the adopted Regional Waste Strategy (based on the then Welsh strategy) which included use of Mechanical Biological Treatment (MBT; with a specific proposal) to deal with residual waste
- refused to allow treated MBT-output for land reclamation/land spreading but had no evidence to justify the inconsistency with allowing land spreading of treated sewage sludge
- excluded MBT output as fuel (RDF) as not 'complete solution', yet allowed incomplete incinerator 'solutions' – dependent on sending toxic flyash to England, claim to recycle bottom ash but without explicit facilities, claim ability to use the waste heat without funds for viable proposals
- promoted RCAF funding explicitly for 'energy from waste plants' in 2007, when WAG waste policy was to minimise incineration (and landfill)
- specified the use of WRATE assessment tool, when that is known to be defective by international criteria and biased against MBT

- failed to respond to cogent and detailed cases against their determination to switch Welsh policy (from minimising landfill-and-incineration to minimising landfill only, in particular those from FOE Cymru (expert consultant-written) and from the UK WIN network.
- ignored European assessments that the environmental impacts and social costs of landfill v. incineration are similar and the UK bias to incineration “questionable” (OECD 2007; EU Thematic strategy on waste prevention and recycling 2007).

## **2. Refusal to assess for high CO2**

There is no question that burning waste emits the maximum CO2 – landfilling sequesters some of the carbon; autoclave or MBT output spread to land enhances carbon in the soil. There are two figures – for all the C of the waste or just the fossil-C fraction – which are becoming closer together over the years as paper and organics are extracted from the waste stream. DECC sets the fractions to be taken.

- WAG's trickery is in ignoring DECC's projections and applying 'offsets' hidden in WRATE. The *British Standard PAS2060 requires claims of carbon offsetting to be substantiated* (Annex 2) but WAG does not require Prosiect Gwyrdd to comply as regards real waste mix, real emissions of landfill methane, etc..

Methane emissions from a landfill are supposedly a large part of the offsets, but the numbers assumed are fictitious – with no check against the actual landfills and no allowance for foodwaste and paper removed from the future waste stream. WAG did call waste-incinerator power 'renewable' and 'low carbon' which is most misleading, as the majority would come from fossil carbon (plastics etc.) and even DECC's biased figures with biocarbon ignored and methane offset have incinerator emissions higher UK average generation. The Petitions Committee should force the WG to face the issue – that incinerator power is high in carbon and quite incompatible with Wales' projection of zero-carbon generation (in the 2020s).

- WAG's early carbon assessments ignored waste-incinerator emissions, by calling them 'industrial'. This trick is excluded in EU-accounting and the UK target for reducing carbon emissions from sectors including waste that are not under the EU-ETS (Emissions Trading Scheme – see below). The Petitions Committee should ask for transparent assessment under EU-accounting procedure.
- Since greenhouse gases from the Welsh waste sector are currently low (Addendum) WAG should be pressed on how they can add emissions from waste incineration while still meeting the EU target (15% cut by 2020).

## **3. WAG Irresponsibility on Incinerator Ash**

WAG assumed that incinerator ash is 'inert', writing this in the draft waste review, when in fact it is toxic (sometimes at hazardous levels) and allows toxic metal compounds to leach out into the environment

- They failed to require the SE Regional Wales Plan (First Review) to include landfill (or alternative) for disposal of flyash, despite the Plan opting for incineration.
- They wrote the Welsh Waste Strategy as if all ash would be re-used, despite the evidence that only 50% is reused in England and much is unsuitable as aggregate.
- They classed reuse of incinerator ash as “recycling”, without evidence or argument (a political deal with the WLGA) despite the contrary decision in England that Defra underpinned by argument.
- They wrote into procurement conditions that all the bottom ash is to be re-used, without any environmental and cost appraisal (officer-level decision, to save face over the policy decision)

## **4. Failure to take an independent view on Health Impacts of incineration**

- Government assessment is dated, incomplete, received a critical peer review (from Royal Society) and is contradicted by independent biomedical experts; the incompleteness on Persistent Organic Pollutants is evident by comparison with the Stockholm/POPs documents, the incompleteness on nanoparticles can be addressed by Prof. C.V. Howard and by Cardiff University scientists (leading group under Dr Bérubé and Prof. Tim Jones)
- Public Health Wales lacks expertise on POPs and nanoparticles, they (Huw Brunt) just repeat the government/HPA view and are inconsistent on Health Impact Assessment (quite inadequate in Splott, follow good practice guide in Merthyr)

## **5. Failure to take public consultation seriously**

- WAG approves Regional Waste Plans that had biased and inadequate consultation – as accepted by Petitions Committee in 2008, but WAG stopped their further investigation.
- all public authorities (WG, Local Health Board, Council) ignore the Convention on Rights of the Child,

which requires children are consulted – in this case children are specially vulnerable to incinerator pollutants and lorries trucking waste.

### **6. WAG policy (incl. WPP0 grant criteria) in practice promoting 25-yr incinerator contracts**

Claims to 'technology neutral' are false; shown by Ministerial statements on ('renewable') Energy-from-waste, foisting *Partnerships UK* (the PFI-promoters) on LA groupings, and Councillor admissions that WAG drives them to accept incineration through these partnerships. Also in approving P Gwyrd's business case, despite it assuming increasing waste arisings in contradiction to trends and to policies for waste reduction, despite it assuming 10-13% to landfill (non-combustible) in contradiction with 5% landfill limit, and despite it including landfill of ash outside Wales.

The result was shown in P Gwyrd short-listing 4 incinerator projects, all for 25-years, and no alternative technologies or 10-yr contracts, unlike more open shortlists in English authorities.

### **7. WAG accepted exaggerated Waste Arisings to justify a large incinerator and associated landfill levels contrary to the Waste Strategy**

Prosiect Gwyrd used exaggerated projections of municipal waste arisings to justify its economic case for the 'reference' incinerator.

- they refused FoE's request to re-assess the business case prior to starting the OJ procurement process in late 2010, because of the lower projections evident then from data on diminishing figures on waste arisings
- they admit the project would be at risk with lower projections
- PG's Outline Business Case shows that Welsh Strategy is breached in two areas - the total amount to landfill from incineration rejects and flyash exceeds the 5% landfill limit, and the use of disposal facilities outside SE Wales for the incinerator ash breaches the proximity principle.
- WAG agreed to subsidise the gate fee and approved commencing procurement despite these absolute breaches of policy

## **DETAILS OF CASE**

### **1. Unfair bias of WAG**

Evidence for these statements is in Waste consultation submissions by FOE Cymru and UKWIN [www.foe.co.uk/resource/consultation\\_responses/waste\\_consultation\\_wales\\_july09.pdf](http://www.foe.co.uk/resource/consultation_responses/waste_consultation_wales_july09.pdf) and UKWIN [www.ukwin.org.uk/files/pdf/UKWIN\\_Welsh\\_response\\_July\\_2009.pdf](http://www.ukwin.org.uk/files/pdf/UKWIN_Welsh_response_July_2009.pdf). We use also the updated and fully-referenced version in the FOE Cymru case by P-I-C consultants prepared for the Covanta Inquiry, part of their evidence to the current inquiry into energy policy and planning by the Assembly Env& Sustainability Committee <http://senedd.assemblywales.org/documents/s500000699/Consultation%20response%20EPP%20238%20-%20Friends%20of%20the%20Earth.pdf> [code EPP238]

The SE Regional Waste Strategy aimed to achieve the 2020 Landfill Directive targets by 2013

- achieve this principally through maximising recycling and composting
  - deal with residual waste by Mechanical Biological Treatment
  - choose between either sending the residual waste from MBT to landfill or using it as Refuse Derived Fuel
  - limit the amount of waste going to landfill to that which can not be dealt with acceptably in any other way
- WAG first blocked Caerphilly's proposal to use MBT developed with Biffa (2006; 70 000 tpa) and costing them ~£1 million, then forced the policy changes listed in the summary point 1.

### **2. Refusal to assess for high CO2**

WAG prescribes the use WRATE for the carbon-footprint of incinerators, yet WRATE does not comply with the *British Standard PAS2060* for carbon accounting. It includes various 'offsets' that conceal the CO2 and enable Viridor, for example, to claim negative footprint. This is due to WRATE assuming an old, not modern landfill, ignoring C-sequestration in landfill, and ignoring bio-stabilisation of organic material. Also ignored are the change underway in Wales through separate collection of food-waste and organics generally, and the trend/projections for low-C power (zero C in 2025 in Wales).

The *carbon-footprint of incineration*, according to the DECC Minister, Gregory Barker (HC Deb, 17 January 2011, c480W) in 2008 was 540 gCO<sub>2</sub>/kWh fossil carbon, whilst the UK 'Average Mix' electricity generation in 2007/8 was 480 gCO<sub>2</sub>/kWh. This looks more favourable to incineration than US EPA figures: waste incinerators 1,355 gCO<sub>2</sub> gCO<sub>2</sub>/kWh compared with coal 1,020, oil 758, and natural gas 515 gCO<sub>2</sub>/kWh. The DECC answer says it includes methane, while omitting biogenic carbon which

doubles the sum. Taking this incinerator-biased figure, projected forward, with the bio-fraction of municipal waste diminishing from 50% to 35% by 2018 – the 540 increases to 850 gCO<sub>2</sub>/kWh fossil – and the 'average mix' generation drops to 300 gCO<sub>2</sub>/kWh fossil. Coal co-firing with 10% biomass comes about 800 gCO<sub>2</sub>/kWh fossil (much lower if CCS is fitted, as is policy) so incinerator power is the highest carbon generation towards 2020. As FOE Cymru concluded: "it is irrational to class such a high carbon emitter as a "low carbon" supply of electricity [Covanta inquiry evidence - for details, see ref. under point 1].

It is argued by pro-incinerator lobbyists that landfill tax accounts for greenhouse gases and other externalities. Defra's *Economics of Waste Policy* review document of June 2011 answers this with:

*Where there remain un-priced environmental impacts in the management of waste, there are grounds for considering further intervention in the market to reflect these impacts.*

*The emissions from waste combustion of non-biogenic material (via any technology including mass-burn incineration) are also not comprehensively reflected in the price of disposal. Unless the installation in question is in the emissions trading scheme (municipal solid waste incinerators are excluded) a negative externality persists - such installations are creating greenhouse gas emissions without paying the relevant price....the landfill tax cannot reflect the differences in environmental performance between all levels of the waste hierarchy above landfill.*

The PG incinerators would be 'creating greenhouse gas emissions without paying the relevant price' as explained below under European legislation.

WAG sets no price on the CO<sub>2</sub> emissions. While the Treasury used a shadow price and Westminster plans to introduce a related carbon tax in 2013, WAG disregards any such penalty on incineration. Experts are well aware (above) that incinerator-power has high carbon-footprint, so this calls for clear and transparent accounting. Much of the carbon in waste is non-biogenic; the fraction is currently deemed to be 50% and projected to reduce to 30-35% as biogenic material (paper; foodwaste) is recycled. One has to ask, what is the relevant price of such carbon? (Annex 2)

### ***Comparative Assessment of Environmental-Amenity externalities show high CO<sub>2</sub> 'costs' with Incineration coming out poorly***

The Table below summarises a general assessment by Eunomia Consultants for the Irish government. This leading consultancy has been used by WAG, but was not asked to make a similar assessment for Wales. Eunomia has also made an assessment for the GLA, but the Irish rural/industrial economy is closer Wales. Note that the Landfill GHG 'cost' is much larger than relevant in Wales (on the methane emissions given above). Health 'costs' of incinerator emissions are in the first line, but even without that it's clear that incineration come out worse than MBT and probably much worse. With health costs, incineration comes out similar to Landfill, maybe marginally better, but not if the methane emissions are as low as in the Welsh statistics (above).

The 'costs' in the table are given in Euros/tonne waste. For comparison, landfill tax is currently at £56/t. The Treasury's tax on fossil carbon (Annex 2) would give over £10/t waste in 2020, a somewhat larger

figure being included in this tabulation for biocarbon.

One of the biases against MBT's bio-methods in Wales comes because of no allowance for reduction in biodegradability in WAG's WRATE, though *New Earth Solutions* have shown 90% reduction in tests accepted by the Env Agency. Other authorities and consultants have shown MBT to be quite capable.

*Global Renewables* has convinced Lancashire (whose waste is probably more industrial-contaminated than SE Wales) that it can be done with their advanced MBT (as running in Australia). Northumberland has used MBT for several years with EA approval for some re-use of the stabilite in land reclamation. The WG's Jasper Roberts said in November 2011 they were approaching Eunomia Consultants to discover why WRATE gives different results from Eunomia's ATROPOS, which has been internationally tested and endorsed particularly in a major study for the Irish Government and another for the Greater London Authority. This is late on to reconsider such a fundamental aspect.

WAG did drop the claim that Energy-from-Waste incinerators count as low carbon 'renewable' energy in [A Low Carbon Revolution: Wales' Energy Policy Statement of 2010](#). This gives a brief mention in Annex 4 of the Euro 20:20:20 commitment, but not what it means in practice for Wales – and carbon from the Waste sector. The *Sustainability Committee* report of Oct. 2010 mentioned a "concerning lack of data" on the commitment to reducing carbon production by 3% year-on-year in devolved areas, including the waste sector, starting in 2011. The Committee noted this excludes emissions from heavy industry and power generation, but did not point out the loophole in WAG treating waste incinerators as power generators.

Will the Petitions Committee take these figures of the Table as exemplars, press WG to admit their bias against MBT is unjustified, and that the figures show the incinerator option is both high carbon and has substantially worse carbon-footprint than MBT?

Will the Petitions Committee, moreover, require the Project to give full evidence on their claim to "deliver a low carbon impact solution", with regard to the details in our Annex 2 *Carbon-footprint in Prosiect Gwyrdd* ?

### **European Requirement for Carbon Reduction**

The waste sector is covered in the 20:20:20 Euro-package. WAG cannot exclude incinerator emissions as 'industrial', but like DECC must assess the incineration emissions under the EU's climate and energy policy. This sets the following EU-wide target for 2020

[http://ec.europa.eu/climateaction/docs/climate-energy\\_summary\\_en.pdf](http://ec.europa.eu/climateaction/docs/climate-energy_summary_en.pdf):

- For sectors not covered by the ETS (e.g. transport (except aviation, which will join ETS in 2012), farming, waste and households) - emissions to be cut to 10% below 2005 levels by 2020.

How? Through binding national targets (with higher reductions for richer countries and limited increases for the poorest ones).

UK Targets 2020 are given in [http://ec.europa.eu/energy/climate\\_actions/doc/2008\\_res\\_ia\\_en.pdf](http://ec.europa.eu/energy/climate_actions/doc/2008_res_ia_en.pdf)

Reduction target in sectors not covered by the EU ETS compared to 2005: **16.0%**

Share Renewables in the final energy demand by 2020: **15%**

It explains the sectors not covered by the EU ETS represent today some 60% of total GHG emissions in the EU and relate to a wide range of sectors covering mostly small scale emitters, such as transport (cars, trucks), buildings (in particular heating), services, smaller industrial installations, agriculture and waste\*\*. In these sectors, Member States hold key competences to define and implement policies and measures. At the same time, a number of EU-wide measures for instance related to energy efficiency standards, the Common Agricultural Policy or waste legislation contribute to emission reductions in these sectors.

\*\*Agriculture and waste lead to substantial amount of non CO2 greenhouse gas emissions (methane, N2O). All non-CO2 greenhouse gas emissions represent some 20% of total greenhouse gas emissions in the EU, CO2 represents some 80%.

This does not allow the WG to use real or fictional offsets hidden within WRATE. Indeed WAG accepted the recommendation of the Sustainability Committee (inquiry into *Carbon Reduction in Wales*, Oct.2010) for an Action Plan covering the waste sector, responding that

"the direct emissions from transport, the residential sector, the public sector, waste, agriculture and land use change will be included, along with all business and industrial emissions that are not subject to the EU ETS."

This stopped officials ignoring incinerator emissions as 'industrial' and pretend there was no problem meeting the 3% pa reduction target (simply cutting methane emissions).

Annex B Table 12 of the Env & Sustainability Committee's inquiry (into *Carbon Reduction in Wales*, Oct.2010) gives the baseline emissions in the "public services and waste" sector as 1290 kt CO<sub>2</sub>e in 2006-10 reducing to 903kt by 2020, so waste incineration emissions. Viridor's 420 ktCO<sub>2</sub> and a similar amount from the N Wales partnership (their 150 ktpa waste is 15% lower than PG's) would add on their own ~800 kt in this sector. With allowance for remnant landfill gas and other non-landfill gas, there would be no headroom left for waste sector contributions from south-west and mid Wales.

Since incineration policy could reduce GHG impact from methane by less than the high CO<sub>2</sub> emissions, the Petitions Committee needs to ask them how the WG can allow such CO<sub>2</sub> emissions from waste incineration while still planning to meet the EU target (16% cut by 2020) and the stronger Welsh target of 3% pa from 2011 (30% cut by 2020). They should emphasise to WAG that incinerator power is high carbon when 'offsets' are excluded as the EU definition "direct emissions" requires. In any case, point out that any offsets will rapidly dwindle by 2020, so that Wales would be left with high-carbon incinerators in the period foreseen for reaching zero-carbon power.

### **3. WAG Irresponsibility on Incinerator Ash**

WAG's wrongly assumed that incinerator bottom ash (IBA) is 'inert' and that it can all be re-used, ignoring the environmental and health harm of the toxic constituents. Its classing the use of IBA as aggregate as 'recycling' is also effectively condemned in the FOE Cymru response.

Fresh IBA is highly alkaline and classed hazardous; if left to 'weather' for a month or two, it can then be tested for heavy metals and biotoxicity, then sorted and graded before being processed. Speedier treatment with acid has extra costs and hazards. Processing some 70-100 000 tpa (tonnes per annum) of bottom ash from the Viridor is no small deal, yet Cardiff Council and the Environment Agency ignored it in approving Viridor's proposals.

Flyash amounting to 5000-10 000 tpa from the Viridor incinerator would be sent to landfill in England, breaching the Proximity and Regional self-sufficiency principles. Cardiff Council ignored this too in permitting the plant.

Recently the Project Gwyrdd team declared (<http://southwaleswin.com/#/ash-hazard/4548472403>)

"Prosiect Gwyrdd has not ignored the proximity principle; we are developing facilities locally, close to where the waste is being generated. The proposed residual waste facilities are located within the Prosiect Gwyrdd area with the fly ash being treated at facilities where the bidders have existing arrangements for the treatment of this product."

They have since admitted that the 'existing arrangements' are landfills in England, and that PG are not themselves 'developing facilities'. Under pressure, they are now trying to add requirements on ash to the incinerator bids, which will mean extra costs not in the original procurement documents and unfairly biased against non-incinerator bids.

This shows that P. Gwyrdd procurement – endorsed by WAG - did not require a 'full' solution. Yet they excluded non-incinerators as not providing 'full' solutions.

WAG refused approval for MBT with RDF-production, calling it a partial solution. This technology, proposed by *New Earth Solutions*, has recently been implemented at Avonmouth to deal with Bristol's municipal waste. In contrast, WAG saw producing incinerator ash with no outlets as a complete solution; the illogicality of this position has apparently forced the WG to add a requirement on re-using the ash into the PG procurement conditions, which effectively requires 100% of the bottom ash to be used in the building industry. In England only ~50% is so used (intermediate size grades).

Likewise, when the autoclave company *Sterecycle* proposed to set up a plant in SE Wales – and gained planning approval from Cardiff for a plant at Trowbridge, WAG officials told them they would not approve the use of the fibre-output on land, even though this was approved by the Env Agency in relation for output of their South Yorkshire plant. *Sterecycle* say they had to include an incinerator for the fibre (WAG would not approve their producing RDF fuel, as at Avonmouth). These conditions made their option less economic, even though it was superior to the mega-incinerators for reclaim of materials and flexibility on modular technology.

Let's point out that incinerator ash (IBA) contains many toxic metals, much in the form of soluble chlorides, which would leach into watercourses and groundwater if used in embankments and sub-base

of buildings. The Env Agency protocol for IBA use is still delayed, but the protocol for use of the less toxic PFA implies that 'unbound' uses will be strongly restricted. The alternative use in manufacture of building blocks is problematic because of the metal compounds and chemical reactivity. In South Wales, the abundance of PFA from Aberthaw is likely to be preferred by block-making industry. Hence, forcing the use of IBA has economic as well as potential environmental costs.

Thus WAG have failed to consider the environmental costs and benefits of their requirement to reuse 100% of IBA. In their efforts to save face over ignoring IBA in their waste policy, they have now failed to ensure BPEO and best-value requirements.

Will the Petitions committee secure full information on the requirement to recycle the incinerator bottom ash, including any 'regulatory impact assessment' as needed for such decisions by the Westminster government?

#### **Special Issue of Incinerator Flyash (APC residues)**

PG assumed under WAG encouragement that the ~6000 tpa flyash would go to hazardous landfill in England. Yet the Waste Strategy principles (Proximity and Regional Self-sufficiency) require that this hazardous waste be dealt with in SE Wales. FOE asked PG directly to cover this in procurement conditions, but they declined. The companies talk of developing processes to neutralise/use the hazardous flyash but continue to dump it in landfills such as that at Bishops Cleeve (Glous) where it is contaminating adjacent farmland and residential areas (<southwaleswin.com>; subject of legal challenge; details can be supplied). In Japan, flyash is vitrified, and only cost is stopping use of similar processes here. PG has suggested 'plasma vitrification' which uses a huge amount of energy and hence has large carbon footprint.

Will the Petitions committee seek full details of such processes, including cost and carbon-footprint, and ask that vitrification or similar be included as a condition by PG in order to comply with the Wales Waste Strategy principles (rooted in the Waste Framework Directive) ?

#### **4. Failure to take an independent view on Health Impacts of incineration**

We support the evidence from Prof C. V. Howard (Univ. Ulster), which was included in substantial medical evidence submitted under the EA's permitting process in late 2010 by *South Wales WIN* and *Cardiff Against the Incinerator* (CATI). We found that the HPA and Cardiff & Vale Health 'experts' failed to address important issues, which must be considered as still outstanding (Annex 1). Prof. Howard's case had been validated at public inquiry, but not addressed by the HPA on the excuse that it had not been published in peer-reviewed literature (yet their own material had also not been so published, and when submitted to the Royal Society for review had been significantly criticised).

Dr Sharon Hopkins, Director of Public Health, Cardiff and Vale University Health Board took on the role of expert advisor on the submissions to the EA regarding health impacts. She received a delegation from CATI in October 2010 and agreed to take their evidence and documents from medical sources into account, while accepting she would have to consult colleagues. Her reply to the EA of 29 October 2010 reported this baldly as

“In respect of the specific scientific issues, studies and their interpretation the Health Board accepts the conclusion reached by the HPA in respect of effect on health.”

After reminders, she added on 30 Dec.:

“I am satisfied that those advising me, namely the HPA and Dr Huw Brunt have taken account of the issues raised in your correspondence to the EA and those issues which I felt from our meeting needed further consideration.”

She did not reply to repeated requests in December and January for a check-list of the points/issues, despite reminders about policy on openness and transparency. It appears she did not make any record to show she had given the issues proper consideration, so there is no valid decision on several quite technical issues.

Annex 1 summarises these. Will the Petitions Committee consider this list together with other evidence on health impacts, and appropriately record which issues are unresolved ?

#### **5. Failure to take public consultation seriously**

Welsh waste policy requires a consultative BPEO (Best Practical Environment Option) of waste management facilities, yet Cardiff accepted Viridor's claim to a BPEO with no consultation. Cardiff then gave an excuse that BPEO is up to the EA, even though their own document (SPG on waste facilities)

follows TAN21 which says it up to the Planning Authority. Similarly, Welsh Policy requires Health Impact Assessment to involve local people and cover their concerns. The Council gave approval ignoring the Spott ward HIA, before it was complete, while the EA relied solely on the company's technical assessment, saying (*Decision Document* p.110) the EA "believes" the HHRA by the applicant "adequately assesses the impact on vulnerable groups".

The Petitions Committee considered an earlier *Petition* (early 2008) regarding poor public consultation on the three Regional Waste Plans reviews run in 2007 by Hyder, contracted by WAG. The Petitioners came from Caerphilly and Wrescam-based community groups and Friends of the Earth. The Committee at its 6th March meeting expressed strong concern about WAG's poor consultation policy and record. The chair concluded:

[208] Val Lloyd: We will start by commissioning the MRS to do some research, and once we have that, we can put the matter back on the agenda for discussion.

The Committee also urged a further stage of public consultation on the amended draft Regional Waste Plans. This was ignored and Hyder made a complacent report to the review body, who endorsed Hyder's draft with practically no changes.

Though the Petitions Committee had decided to investigate, they were told it was outside their remit. The Minister dismissed their criticisms (15 May 2008 letter to Chair of the Petitions Committee), saying consultation methods are rarely prescribed and in the actual case was "considered to meet the Public Participation Directive". Surprisingly, the then Committee accepted this bland assurance, doubtless written by the WAG officials culpable in briefing Hyder.

Since public consultation is an integral part of waste management planning – and the incineration plans were first given official endorsement in the Regional Waste Plans reviews – will the Petitions committee again take up this consultation issue?

#### **6. WAG policy (inclWPPPO grant criteria) in practice promoting 25-yr incinerator contracts**

Right from the RCAF Regional Capital Funding in 2007, WAG officials have been pushing partnerships for major incinerators, funded by private capital. They foisted *Partnerships UK* (the PFI-promoters) on LA groupings as financial advisers, despite WAG policy being against PFI.

The effects of Welsh Waste policy are now known – from Prosiect Gwyrdd – to select only incinerator projects from the various options available on the market. All four of the PG projects short-listed in January 2011 were for a single centralised incinerator. These all use old mass-burn technology that maximise CO2 emissions and have little or no practical prospects of using the heat output. One can contrast this with Bristol, where a cross-Council partnership was advocating a 25-year PFI-financed project very similar to Prosiect Gwyrdd also oriented to incineration, public opposition led to the election of a new Council in 2009 – who pulled out of the partnership and commissioned alternative MBT, up-and-running within 2 years for a lower cost 9-year contract.

The Avonmouth output is initially RDF-fuel, but could be changed - if the New Earth Solutions MBT plant were replicated in South Wales, the bio-stabilised outputs might find sufficient use for land reclamation and forestry. Just as spreading sewage sludge on land is now permitted, within appropriate limits and testing regime, so MBT-outputs are permitted for use on non-cropping land under a similar testing regime. As FOE Cymru evidenced, heavy metal levels in MBT output are typically lower than levels in treated sewage sludge. The techniques are the same in both cases, so it is perverse of WAG to over-ride the Env Agency regime by saying they would ban the MBT to land option in Wales. Several companies in England have gained Env Agency permits, including the majors Biffa and SITA, and successfully used their MBT outputs in land reclamation and soil-forming project, with significant financial advantage. Under the Wales Waste strategy, the decision is not simply financial but required to be subject to BPEO (Best Practicable Environmental Option) assessment.

The Welsh waste policy review – and its assessments of the incineration option – were based on small CHP (combined heat-and-power) incinerators, allowing efficient use of the heat (60% or more compared with the 20-25% incinerator efficiency). A model with community heat supply advocated by WAG's Andy Rees was the Lerwick/Shetland scheme with district heating, the other model was siting small waste burners adjacent to industries which could use the heat. Neither of these models has come through the 'market' process in either the P Gwyrdd or the North Wales Partnership.



The Committee should ask

1. is this because of the procurement process set up under the guidance of WAG and approved by them?
2. is it because such proposals are quite uneconomic and/or risky for the waste business?
3. why WAG ignored the BPEO requirement before deciding to ban (or threaten to ban) spreading of MBT output on land in Wales?

On the first point, one sees that procurement under WAG policy has resulted in the choice of only the waste industry majors – mainly transnationals. Welsh waste businesses have been excluded even as partners by the procurement process, as have also smaller England-based businesses with newer technologies like autoclave and gasification. In the first place this happened through WAG/IBW courting the US mega-company Covanta. More recently, WAG spawned the WPPO to promote procurement of waste infrastructure, bringing in 'advisers' from PFI-consultants (cf. Howel Jones from *Partnerships UK*). Whether or not WAG forced their methods on PG, their policies for large partnership-solutions and their approval of subsidy to mega heat-wasting incinerators is subverting the Wales Waste Strategy and its claims of sustainable waste management.

#### *How PG failed to short-list a viable CHP option*

PG's original OBC assessment discounted incineration without heat use (power recovery only) (4.3.8), and Market Testing in Jan'07 (Appx 9a) was scoped to allow for CHP as

“providing for high thermal efficiency”, yet no viable CHP option was short-listed.

The OBC says they then dropped it as Appx 5a *Risks* (Plan. 18) saw a 'major risk' if CHP was prescribed to meet targets or WAG's 60% requirement. Heat use was to be left to 'Competitive Dialogue', but the Viridor, Veolia proposals and their chosen sites virtually exclude substantial levels of heat-use. The OBC claim or intention that “the assessment will recognise the advantages of CHP over power recovery only” became a dead letter.

PG say they aim only for the “R1” formula of the Waste Directive, and ignore 'thermal efficiency' stated in the OBC and included in the Welsh waste policy. PG's argument over a few % in electrical efficiency above 24% is irrelevant compared with their complete failure to aim for the 60% set in the Welsh strategy.

Will the Petitions Committee ask why general policy for CHP as implemented (or not) by WPPO/WG has been ignored or bypassed in PG's procurement process?

#### *Caught by POPs legislation*

The law covering dioxins and other Persistent Organic Pollutants (POPs) has been confused in the UK, because the Env Agency was given responsibility, yet they say that the requirement for “*Priority consideration*” to non-incineration technologies such as anaerobic digestion and MBT processes has to be delivered by the Planning Authorities. FOE Cymru's evidence to the Covanta IPC inquiry describes the current situation, from the Inspector at the Grantham public inquiry: incinerators produce

“persistent organic pollutants (POPs) and that it is therefore necessary, under European law, to give priority consideration to alternative processes that would not generate and release these substances.

This would appear to a matter for the planning regime”.

Cardiff were told of this issue over the Viridor application, but ignored it, presumably under WAG guidance for it strikes at their own pro-incineration policy.

Will the Petitions Committee ask if the WG intends to accept responsibility for the POPs legislation and review its pro-incineration policy accordingly?

### **7. WAG massive blunder over exaggerated Waste Arisings to justify a large incinerator and associated landfill levels contrary to the Waste Strategy**

In 2006 when this pro-incineration policy started, WAG was projecting huge and continuing increase in waste ([South East Wales Regional Waste Group](#) Annual Monitoring Report March 2006):

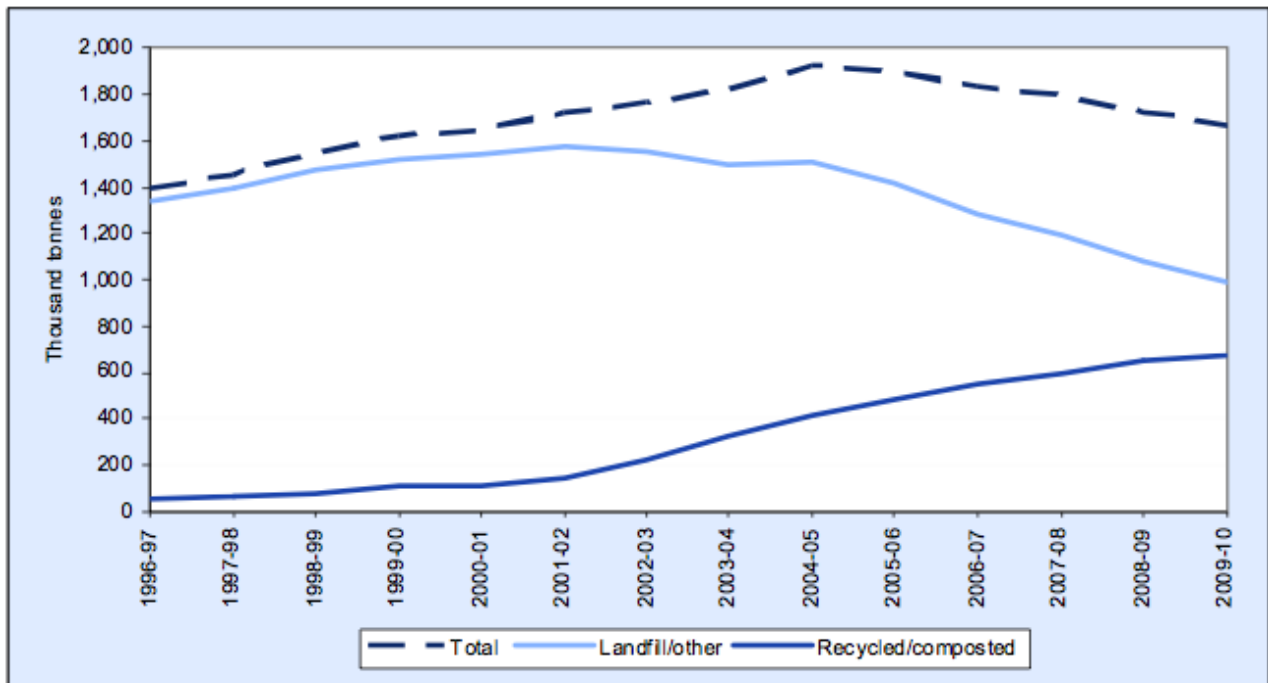
The following revised forecast is for Municipal Waste arisings is made as a basis for the RWP 1st Review:

2005/06	to 2014/15	2015/16	to 2019/20	2020/21	to 2024/25
+4% pa	Linear change towards +1% pa		1% pa		

Municipal Waste arisings are forecast to change from 840,000 tonnes in 2004/05, by +73%, to

1,460,000 tonnes in 2024/25.

MSW waste arisings in Wales – source Wastedataflow and Municipal Waste Management Report for Wales,



2009-10 - November 2010 (Welsh Government 2011).

WAG forced through a Regional Waste Plan based on these huge increases – and the corresponding pro-incineration policy. The actual waste arisings are now known to be quite different (see Figure) and the 2006 projections have proved to be a monumental blunder. Wales has now set policy for reduction of waste, with the WG using 1.2% pa reduction (less than the actual 1.7%). But Officials have been unable to admit their blunder and reassess the plans for massive increases in infrastructure.

The Audit Commission advised against over-provision of inflexible waste infrastructure (incineration) capacity, but no such advice has come through WAG/WPPO. They approved the P. Gwyrd OBC that was based on advice from the PFI-promoting Partnerships UK, nominated by WAG and the Treasury's document SoPC4. The waste projections were endorsed by Parsons Brinkerhoff in July 2008, whose letter PG submitted to WAG, implying WAG was closing its eyes to annually diminishing waste volumes even at that date. Worries about the projections were reported to the PG Board in March 2011, but in closed session so as not to put off the bidders.

PG's original tonnage was estimated at 220 000 tonnes pa, based on projections of growing total waste outweighing increased recycling, and ignoring waste reduction. The waste statistics date pre-2006, though the current work on waste flows show the pre-2006 figures give way-out projections. When confronted with evidence that – as in England – tonnages were decreasing annually, the chief officer Steven Davison agreed, but told a FOE deputation that the incinerator would not be viable if they reduced the target figure. This is expressed in the OBC (Appendix 4b Waste Growth – Cardiff) as “it is likely that total MSW arisings will grow between 0.6% and 1.2% per year. For Cardiff, the project is based on MSW growing at 1.5% per year to 2015, reducing to 1% thereafter. Cardiff produces the greatest tonnage of waste of all five Prosiect Gwyrd partners, and it is considered that using a lower growth rate for projection purposes could put the project at risk.”

This is explicable if one reads “project” as “incineration project”, since MBT uses modules flexible in size and autoclave module capacities are below 100 000 tpa. Only incinerators require ~200 000 tpa to make the financial figures competitive.

PG assumes (OBC Appx 4b) “the average waste per person and per household... relatively static”. That assumption might have been valid in 2007, when rates in England were dropping but in Wales were unclear. But from 2010, it's clear average waste levels are dropping in Wales, by 1.7% per year (decreases due to the recession add to this trend). Moreover, WAG's 'Towards Zero Waste' set targets for continuing reduction:

“need to reduce our waste by around 1.5% (of the 2007 baseline) each year across all sectors”

“we will consult on annual waste prevention targets of -1.2% for household waste, -1.2% for commercial waste, -1.4% for construction and demolition waste, and around -1.4% for industrial waste. The Municipal Waste sector plan confirms the actual 1.7% pa reduction (see Figure).

*Faulty setting of reduction targets* WAG's statement on reducing waste at 1.5%pa (municipal) and, (inconsistently) lower in each sector, was calculated, they say, in order to reach to one-planet 'fair earthshare' of global resources by 2050, from the 2003 level of 5.16 global hectares/capita. WAG set the 2050 level at 1.88 global hectares/capita, but this assumed the global population stays constant. With the projected range of population increase, Wales's 2050 level should be between 1.0 and 1.5 global hectares/capita. (FOE Cymru give detail on this point). It follows that WAG has no reason for slackening the present decrease of 1.7%pa for municipal waste. Indeed, it implies ducking our fair share of efforts to meeting the basic 2050 target in *Towards Zero Waste– One Wales: One Planet* with no reason given. The BPEO assessment to justify any different rate than the present rate of waste reduction has not been conducted.

PG's waste flow figure was set for procurement purposes at ~180 000 tpa. The “risk” of this projection could be put in financial terms, yet PG has not done this, just keeping it secret as commercially sensitive and telling the Board (March 2011) they are watching this. This secretive self-interested behaviour is contrary to the public interest.

- The 180 000tpa amounts to 35% of the projected waste stream, even though WAG's policy is for 70% as minimum recycling/composting and the WAG/WLGA consultants report - which passed a peer review - found 80% was cost-effective and higher %ages are quite feasible. WRAP reported in 2010 an Environment Agency Wales study for WAG that identified that up to 90% of MSW in Wales could potentially be recycled, if newer techniques (particularly for disposable nappies) were adopted.
- PG Councils failed to undertake a BPEO assessment of the 65% target, just adopting it on political grounds in the face of consultants' advice on cost effectiveness and practicality of higher rates and in the face of WAG's minimum target.
- PG's plan to meet the WAG 70% recycling minimum by including re-use of incinerator ash as aggregate (a ruse that the industry lobbied for in England, but Defra turned them down). Other municipalities and regions already reach 70%, but PG has against all evidence put off its 65% target till 2025. PG's publicity claimed this 65% amounted to 'maximising recycling and composting' - they recently withdrew this after complaints.
- The EAW study for WAG makes clear that the ('minimum') statutory targets for Wales do not maximise recycling/composting, so Local Authorities need to aim higher rather than lower.

The WG should say what action it will take against the 5 PG Councils who chose to go slow on recycling/composting with their 65% target for 2025 and failed to follow the requirement for BPEO assessment on their decisions.

*PG falsified the incineration tonnage* PG assumes that all that is not recycled/composting will be available for incineration. Yet its OBC (Table 4.4) shows that some 36 500t are uncombustible and rejected prior to the incinerator - a fifth of the residual waste stream.

- PG has concealed this figure because the 144 000 tpa residual waste (compared to the original 220 000 tpa) would have significantly changed the OBC's economic assessment. Even with the biases to an incinerator, scaling of the financial projections with the high capital cost but lower throughput shows it would have come out less economic than continuing current policies – ie. the incinerator is not viable, as chief officer Steven Davison had suggested.
- Projecting forward, the 144 000tpa reduces to figures in 2020 of  
123 000 tpa (at actual 1.7% pa decrease) to 127 000 tpa (at policy 1.4% pa decrease).
- If the Councils instead chose the very achievable 75% recycling level, this drops to ~90 000 tpa, half the tonnage they chose for the procurement exercise.

*Guaranteed Annual Minimum Tonnage:* Prosiect Gwyrdd proposed to contract a Guaranteed Annual Minimum Tonnage to Viridor or Veolia and to set Guaranteed Minimum Tonnages for each of the 5 Councils. This was following normal practice for English PFI incinerator contracts. The presentational difficulties of this concept – with the appearance of guaranteeing to supply waste from the recycling stream – have recently been recognised. Now the PR official says they have changed to Guaranteed Minimum Payment – ie. paying gate fees to the incinerator even if they send no waste.

They are also proposing (the PR official says) a 'substitute waste' clause, to allow the import of other wastes to make up the shortfall in the contracted tonnage. Whether or not it is lawful for PG to bind planning authorities to allow imported waste (from outside the SE Wales region), this shows leaning over backwards for the benefit of the incinerator companies. This is in the context of incinerators in England already competing for shrinking tonnages of incinerable waste. Yet Viridor declares that they are ready to sign contracts for construction of the Splott incinerator and will go ahead this April irrespective of the PG contract. Sterecycle likewise indicate they are looking to build their autoclave plant in Trowbridge, while Energos have taken over Biogen and announced they are proceeding with options for two waste gasification plants at Newport and Barry docks. The logic is – PG should leave it to the market and drop the idea of any long-term contract.

If PG persist with setting a *Guaranteed Annual Minimum Tonnage or Payment*, what level would be best value, consistent with Welsh policy and in the public interest? On the projections of decreasing waste and increasing recycling, with the one-Wales targets beyond 2025, the last years of the 25 yr contract are relevant for an Annual tonnage, say 2035-2040. Recycling/composting expect to be at 85-90% and waste continuing to decrease at 1.5-1.7% pa (linear) from the 2005 level. This gives projected tonnages down from PGs base figure of 180 000 to 50-80 000 tpa. If Viridor and Veolia with their 250-350 000tpa plans lose interest in such a minimum, so be it.

*PG breaches Welsh Policy on Landfill*; Table 4.4 of PG's OBC shows landfill capacity is required for 6300tpa of flyash, 36 500t rejects in the four cases and 33 300 tpa IBA in two of the four cases. The Waste strategy sets a maximum of 10% of the waste stream to landfill in 2020 and 5% of waste stream in 2025, corresponding to 50 000tpa and 25 000tpa for the PG area (all un-projected figures). Evidently, the incinerator project cannot meet the Waste strategy limits. WAG approved PG despite this failure. UK WIN pointed this basic contradiction in their response to the Waste Strategy, so WAG cannot say they did not know. WAG also approved PG despite it assuming continuing (or zero) waste growth, on the basis that taking realistic decreases for "projection purposes could put the project at risk".

Likewise, WAG approved PG despite it breaching the Proximity Principle, as the OBC proposed to send the 6300tpa flyash to a hazardous waste site in England. Note that the OBC's reality check (4.3.8) makes no mention of breaching the PP and 5% criteria.

- The Petitions Committee should enquire whether the WAG/WG ignored these breaches because of incompetence or because it was set on getting incineration projects through?
- Secondly ask what action the WG could take against the 5 PG Councils who flouted the BPEO requirement in the Waste Strategy in choosing the go-slow 65% recycling/composting target?
- Thirdly ask the WG to correct its faulty assumption of static global population in calculating Wales's one-planet 'fair earthshare'.
- Fourthly ask when the WG is going to review plans in view of the complete change in Waste projections, and their "impact on economic development and carbon reduction with a view to aligning them to the revised economic policies" as was promised under the Low Carbon agenda.
- Fifthly, ask the WG to ban Councils from guaranteeing minimum tonnages of waste for 25 years, based on projections of residual municipal waste that are not compliant with Welsh strategy.

----- South Wales WIN <<http://southwalesWIN.com>> January 2012 -----

## **Annex 1:**

### **Issues brought to Dr Hopkins' attention that were unaddressed by herself and the HPA**

1. We supplied the technical report 'Debromination of brominated flame retardants' [1] and drew attention to paras. 98, 102 and 123, which conclude

# the dioxin-like TEQ from house dust ingestion can significantly contribute to the daily TEQ of toddlers (in Japanese homes, because of PBDF in the dust)

# debromination of DecaBDE needs to be considered in incineration and pyrolysis/gasification conditions.

# The appropriateness of using such technologies (incineration, smelting, cement etc.) for end of life treatment of PBDE-containing wastes need to be assessed as a matter of urgency.

2. We supplied internet links to information on flyash disposal at the landfill site in Glous. where

Viridor planned to send their waste ash, that flyash particles are now proven to spread to surrounding land and even homes ([www.swardbishopsleeve.co.uk/About.aspx](http://www.swardbishopsleeve.co.uk/About.aspx)). A newspaper report mentions Health bosses in the county are unsure if living near the site is harmful to public health, with several studies still investigating the matter (July 2010 report) <http://www.thisisgloucestershire.co.uk/news/Hazardous-waste-escaping-Bishop-s-Cleeve-site/article-2321415-detail/article.html>

3. We quoted the EA statement which reads: "We will only issue a permit if we are satisfied it will not damage the health of local people or the environment", and we pointed out there's harm to health (if of susceptible persons) from any increase in NO<sub>2</sub>. There's also the harm to health and to vegetation of secondary ozone - no threshold for human health and a threshold that's often exceeded for crops/ vegetation.

4. The EA apparently wants assurance of no health impact - this concern about POP-BDEs is well supported scientifically though not conclusive, so I argue the precautionary principle applies in the present case where the relevant specific information has not been given.

5. The HPA statement [2] addresses standard dioxins but does not cover non-ITEQ dioxins, including brominated ones, nor the whole category of 'new' POPs added in 2009 [3]. The EA's confidence on the dioxin issue (draft Decision Document) is therefore unwarranted.

6. You should apply the precautionary principle in such a case where the data is insufficient, but the science strong enough; this is not "paralysis through analysis" that you claimed in discussion.

7. Ultrafine particles are an air pollutant not controlled by legislation, inefficiently removed by filters and serve as delivery agents for combustion by-products including toxic metals and organic chemicals deep into the lungs, bloodstream and organs, apparently crossing the placenta (Cormier et al. *Env Health Perspectives* June 2006). Our 2006 Review in the PINCHE project specialised on children (Air pollution: A threat to the health of our children, *Acta Paediatrica* 2006) and I attach a copy.

8. Children are recognised as particularly vulnerable to such (incinerator) pollutants  
Children are recognised as particularly vulnerable to such (incinerator) pollutants in the 2004 European (CEHAPE) programme advised by the WHO (see: *Reducing Adverse Effect of Air Pollution on Children's Health* 2005). The European standards were not tightened (as scientists through the CAFÉ programmed advised), nor did the UK's 2007 Air Quality review take it on board. The Scottish standard for PM<sub>2.5</sub> was set near the WHO guideline but the England & Wales value was left twice as high. Thus our Air Quality Standards cannot be regarded as protective of health.

9. Dr Hopkins made no response to the point that under the Convention of Rights of the Child, children have to be consulted over matters that affect them; the EA had no procedures for consulting children or taking their interests into account, we told her, so this aspect therefore falls to the Health authority.

#### NOTES

[1] From the UNEP/POPS/POPRC.6/INF/20, Persistent Organic Pollutants Review Committee Sixth meeting, Geneva, 11–15 October 2010

[2] HPA briefing by Frances Pollitt (CRCE, 21 October) Comments on Consultation response re Cardiff EfW, Trident Park, attached in Dr Hopkins' e-mail to us and the EA, which did not cover most material submitted.

[3] Harm from dioxins and dioxin-like chemicals from incineration has not been assessed by the HPA in the light of modern knowledge and modern wastes. The WHO-ITEQ standard covers only the main chlorine dioxins and furans, not dioxin-like PCBs and mixed halogen dioxins. In particular, fire-retardant brominated chemicals are abundant in modern wastes, brominated POPs were added to the Stockholm Convention list in 2009, USEPA has started studies of emissions in flue gases (Wyrzykowska 2008) and others have studied brominated dioxins etc. in the ash. The UK POPs Network ([www.gees.bham.ac.uk/research/projects/nercpops/](http://www.gees.bham.ac.uk/research/projects/nercpops/)) reports on these issues. Since doses of dioxin/furans to newborns especially when breast-fed are around the TDI (tolerable daily intake) with a fraction exceeding it, the inclusion of chemicals with dioxin-like effects

worsens the problem.

## **Annex 2:**

### **Carbon-footprint in Prosiect Gwyrdd**

Since drawing up the 2007-8 assessment and business case, the UK and Welsh governments have adopted carbon policy and targets that give priority to low-carbon in choosing a waste solution. Indeed, Cllr Mark Stephens as Chair of the Prosiect Gwyrdd Joint Committee declared in November 2009 "The Partnership will deliver a low carbon impact solution". This justifies the Committee giving full scrutiny to this aspect.

As incineration is generally high carbon and the centralised single incinerator means more lorry-mileage than county-scale facilities, WAG/WG should have challenged PG's claim to low carbon. Originally WAG ignored incinerator carbon as 'industrial' emissions – but this accounting trick has been stopped (see arguments on ETS under issue 2 of the text)

#### **A1 Maximising materials recovery and recycling.**

This gets first priority in energy accounting, as manufacturing new materials needs several times more energy than recycling old ones. So ask whether setting a 65% target by 2025 for recycling does not in fact mean higher carbon than 70%-80% targets. Ask whether adopting a Guaranteed Minimum Tonnage to the incinerator does not tend to limit and even suppress the fraction recycled and thereby increase the carbon-footprint. Ask why not refuse to agree a Guaranteed Minimum Tonnage (as recently by a west London authority) or set it so low that it is unlikely to be undershot (based on 90% recycling)?

#### **A2 Viridor's offsetting tricks**

Viridor claimed their incinerator would have a 'positive carbon footprint'; their Planning Statement 2009 as example says:

'through the use of the WRATE life cycle assessment software, it can be demonstrated that EfW yields a negative carbon footprint, that is, an overall reduction in global CO<sub>2</sub> emissions.'

The Planning Authority accepted this preposterous claim, yet:

- a) the energy efficiency is not the 65% assumed by Viridor, but 20-22% for this type of incinerator, after deducting electricity and gas-fuel used in the process;
- b) Viridor assume 65% bio-component, not the current 50% and future 35% prescribed by DECC/Defra;
- c) Viridor fail to consider future diminishing offsets due to decreasing carbon intensity of the UK electricity supply.

Neither Cardiff planning officers nor EA officers required them to comply with the British Standard PAS2060 on declarations of carbon neutrality, which require "*substantiation of the direct and associated greenhouse gas (GHG) emissions*".

See *Offsetting and Quantification of the carbon footprint*. "Permissible declarations in respect of carbon neutrality in accordance with the Publicly Available Specification (PAS) 2060".

#### **A3 Environment Agency's response to these figures**

In their licensing of Viridor's incinerator, the EA admitted that it would emit more CO<sub>2</sub> per unit of power than power stations, but excused it as

- a) ... waste disposal, should not be compared against "dedicated power station"

The source for this unusual statement is not given. Nor is it consistent with the EA's presentation as energy-from-waste, nor with offsetting its electricity against power station generation.

- b) "... lower net release... (as waste has) a biogenic carbon content" .

However, there are many assessments that show waste incineration emits more 'fossil' carbon than modern efficient fossil-fuelled power stations, especially gas-fired power stations.

In fact the EA did not carry out an appraisal, but only "agreed" with the company's. And the company appraisal itself assumed a high level of heat use (65% total efficiency) that there is no chance of attaining, and makes a false comparison with a poor landfill site that doesn't exist. A proper comparison is with a modern landfill site taking pre-treated waste as required under the Waste Framework Directive.

#### **A4 Fractions of biocarbon/fossil carbon in the waste**

Viridor used the pre-2006 level of 65% biocarbon, rather than government levels:

Deeming the biomass fraction of waste - *BERR, Renewables Obligation Consultation - Government Response* January 2008): *we will proceed with the introduction of deeming, but will begin with a lower deemed level of 50% fossil fuel energy content that will increase over time (60% from 2013) to 65% (2018) following a trajectory in line with the Government's waste policy.*

This implies at most 35% biocarbon as representative for typical Viridor plant operation (as in 2018) and this figure is used above in deriving the fossil CO<sub>2</sub> of ~1400g/kWh for 21% generating efficiency (output)

### **A5 future plans to reduce CO2 for plants lasting more than 10yrs**

this is important in view of the government commitments to reducing carbon in the 2020s-2050s. The Env Agency said they did consider requiring technical measures on CO2 (DD p.36; because the plant does not come under EU-ETS 2003) but did not on grounds that

*provided energy is recovered efficiently (see section B3), there are no additional equivalent technical measures (beyond those relating to the quantity and characteristics of the waste) that can be imposed that do not run counter to the primary purpose of the plant, which is the destruction of waste.*

Hence the EA says that once such an incinerator gets permits, it can continue high carbon emissions, taking no measures to reduce them (as normal power stations must) for its full life-span.

### **A6 No energy recovery requirements**

The WFD (Waste Framework Directive), recently implemented in UK Regulations, defines high efficiency on the  $R1=0.65$  formula (WFD Annex E). WAG's revised waste strategy prescribes "at least 60%" thermal efficiency as defining their "high" efficiency incinerators. The EA failed to put any condition in the license, but recognises that its approach to higher efficiency CHP is needing review:

... very few of the recent .. municipal waste incineration plants will operate as CHP. The policy framework for CHP needs to be stronger and to incorporate both regulatory certainty and financial incentives.

*Regulatory certainty* needs to be improved through *tougher requirements* and a more proactive approach under planning. We are currently reviewing our approach to CHP under the Environmental Permitting Regulations. (s. 2.49).

The EA has been talking of reviewing this for 2 years or more, while they let Viridor and others through with no conditions.

### **A7 Carbon externality costs**

Treasury policy on carbon Tax sets out three separate proposals for the carbon floor price, outlining how the price in 2020, delivered through the combination of the new tax and the ETS, would reach £20, £30, or £40 per tonne CO<sub>2</sub>e. Under each scenario, the price would then continue to rise to reach £70. Carbon taxes could come into force in 2013.

Viridor's burning of 350kt pa waste would emit 420kt CO<sub>2</sub> pa. At £30 /t, the attributable cost is over £12M pa subsidy, increasing to £30M pa. This public subsidy exceeds the £9Mpa direct subsidy promised by the WG.

### **A8 Carbon Tax**

The PG team plans for costs of future legislation and taxation changes to be borne by the local authorities. The OBC did not take the Carbon Tax into account. The taxes attributable to 180 kt pa PG-waste would appear to be half the above figures (£6-15M pa).

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