

9 July 2008

## Questions to the WoE Scrutiny meeting 11 July 2008

### **Outline Business Case: Assessment of Affordability**

The following costs have not been factored in:

#### **Hazardous waste**

1. All fly ash is hazardous. There will be a large volume of fly ash generated by any incinerator, which will need special temporary storage in a hazardous waste facility, before disposal.

- What provision is being made for this?
- What storage facilities are being planned, and has their cost been factored in?

2. There are high levels of heavy metals in bottom ash. The Environment Agency is reviewing the potential reclassification of bottom ash as hazardous waste.

- Has the potential higher cost of treating bottom ash as hazardous waste been taken into account?

3. There will be a high number of vehicle movements associated with moving the hazardous waste.

- Have these vehicle movements been taken into account in the climate change impacts assessment?

4. The nearest available hazardous landfill site is in Gloucestershire. This site is due to close next year, and there is no application yet to extend its licence. The next nearest site is in Cheshire.

- Where is the WoE intending to send its hazardous waste?

5. The WoE have assumed that a lot of bottom ash can be used in aggregate, but currently only around 40% of UK bottom ash is used in this way. With a ‘dash to incinerate’ across the country, it is very unlikely that this ash will find a market.

- Have alternative costings been drawn up, making the assumption that all the bottom ash will go to landfill?

Or, assuming that the ash can be processed into aggregate, this would require a further plant:

- Where is the aggregate plant in the Core Options proposals?
- Or, where have the WoE assumed that the ash will be transported for processing?

#### **Climate change and flood risk**

1. What will the WoE local authorities do to mitigate the increase in greenhouse gases predicted by the modelling if the EFW incinerator proposal goes ahead? And what will be the associated costs?

2. The new Sustainability appraisal for the Core Options only looks at land use issues, and does not take into account the climate change impacts of any chosen technology. The poor performance of incineration in terms of climate change impacts, as shown in the original SA, has not been restated here.

3. Many of the proposed sites are in a flood risk area in Avonmouth. As incineration has been shown to have worse climate change impacts than landfill, and a consequence of climate change will be sea level rise, does this siting seem at all sensible?

#### **CHP**

1. The Outline Business Case says that the reference project would have “CHP for the local community”, which implies that the heat would benefit housing or community projects. All of the potential sites seem to be industrial, so how can the CHP benefit the local community?

2. If incinerators are run as burn only, they are not eligible for ROCs – denying an income to the area.

9 July 2008

## Background information to our questions

### **Sustainability appraisal**

The Preferred options document says:

“The Preferred Spatial Option for Recovery Facilities

6.52 A Sustainability Appraisal has been undertaken of the four spatial options and an assessment has been made of the identified sites. Subject to the completion of a Habitats Directive Assessment and a Strategic Flood Risk Assessment, Option C has been identified as the best performing option, and benefits of the identified sites include factors such as good transport links, proximity to waste arisings and local waste facilities. Option C minimizes waste transport, energy consumption, greenhouse gas emissions and other emissions from waste transport.”

The NEW Sustainability Appraisal document contradicts the original one because the new SA only looks at it in land use terms so the greenhouse gas emissions from the burning of waste are not included. This is crucial and must be flagged up as the SA of the JRWMWS made it perfectly clear that incineration performs very badly in terms of global warming potential of the technology and this has been excluded from the SA except that the SA considers the value of CHP on urban fringes.

This makes the statement at 6.52 misleading as the WRATE modelling and the SEA clearly show that the incineration option is worst for greenhouse gas emissions. In addition the SA explains that greenhouse gas impacts will be increased if there is not regional self-sufficiency for waste. Given that we do not have, and will never be likely to have, a hazardous waste site in WoE, and that if Gloucestershire does not take the waste (and as it is a commercial site they cannot guarantee a) a contract with Grundon by whoever tenders for the build and b) they cannot assume that Gloucestershire will not close when its planning permission expires in 2009 – not least because it has not put in a new planning application for a hazardous waste site).

The SA says that exporting of hazardous waste outside the sub region will increase greenhouse gas emissions and that will increase over time if thermal treatment (EfW) is used [because the residues are hazardous]. The SA states that hazardous waste including fly ash would rise to “800,000 tonnes per annum in 2020” (page 106) – so an awful lot of toxic waste to truck about – potentially as far as Cheshire as other hazardous waste sites fill up. And the Cheshire mines is only a hazardous waste storage site not a final disposal site.

The Preferred options document frequently implies that Energy from Waste recovery constitutes renewable energy – though placing renewable in quotation marks. Without CHP Energy from Waste fails the governments test to meet the Renewables Obligation and qualify for ROCs. The implication that any energy recovery from waste is renewable should be removed from the document prior to public consultation as it is wrong and misleading.

### **Flood Risk**

The SA has identified that the site selection criteria for the preferred options is “that waste development may be acceptable on flood plains subject to the appropriate policy tests being met” but that PPS 25 states “that only water-compatible uses and essential infrastructure should be permitted”. The SA says that the criteria need to be modified in the light of PPS25. Given that all but one of the selected sites are in areas of Flood Risk the site selection is clearly flawed. The SA also notes that a Strategic Flood Risk Assessment has yet to be carried out.

## **Other issues**

The SA also states

### 2.1.11 Uncertainties and Risks

The following are key areas where the likely impacts of the Preferred Options are not known, due to a lack of data and other information to enable an assessment to be made:

- air quality;
- greenhouse gas emissions;
- costs of waste management activities;
- waste transport;
- biodiversity;
- flood risk.

The Preferred Options document also states proposals would be assessed against a range of criteria including the following – which are welcomed. However the preferred options have already been shown to have negative impacts when assessed against these criteria.

#### *Climate Change*

To require new development to address impact on reduction and adaptation to climate change through:

- Energy efficiency and energy recovery;
- Use of Combined Heat and Power (CHP);
- Greenhouse gas emissions;
- Flood risk and sustainable drainage;
- Good design and sustainable construction;
- Waste transport distances;
- Alternatives to road transport; and
- Water consumption.

#### *Environmental Protection*

A set of criteria to ensure waste development does not have a significant adverse effect on the following and includes appropriate mitigation or compensation:

- Communities;
- Highways and access;
- Air quality, including dust, pollutants and odour;
- Litter and vermin;
- Noise and vibration;
- Ground and surface water;
- Flooding;
- Water consumption;
- Climate change
- Lighting;
- Landscape and visual;
- Wildlife;
- Trees;
- Archaeology; and
- Land quality and geodiversity.

## **Generation of hazardous waste**

It is stated that the bottom ash from the EfW plant will be reused as aggregate and the fly ash (APC residue) will be disposed of as hazardous waste (appendix 6 – option 1). However only about 40% of bottom ash produced in the UK is currently used as aggregate, uses are experimental and mostly as things like car parks etc. and because of the high leaching of metals such as zinc the applications are very limited. To use the bottom ash requires further plant to prepare it as well as a market to sell into. There is no evaluation of the costs of this option or the costs of disposal of the bottom ash as a hazardous waste should it fail to be disposable as aggregate. This is therefore a risky strategy and should be properly appraised. Within the UK there are proposals for well over 15,000,000 tons capacity of EfW plants which will produce something like 3,000,000 to 6,750,000 tons of ash (depending on the inputs). It may be possible within the UK to accommodate this type of residue in construction projects but there is no evidence the region will be able to accommodate the local outputs locally on an annual basis for the lifetime of the EfW plant, and that may mean there will be considerable transport costs and emissions in disposal of it. This has not been factored in to the appraisals.

Why are the EfW bottom ash considered as aggregate and the ash from options 6 and 7 landfilled? There is no more reason to expect that pyrolysis output would not fulfil an aggregate role that that bottom ash from APC will.

The control of pollution emissions from EfW and other thermal methods generates materials (other than APC) that require disposal. These do not appear to be included in the appraisal costs.

## **Health impacts**

Health impacts are not evaluated realistically. The stack height of the pyrolysis plant would need to be increased so that ground level concentrations were reduced. The pollution control on the pyrolysis plant is generally better than that given in the model and the EfW plant is often worse than the emissions used in the model so the voracity of the comparison is arguable. The reduction in transport associated with the gasification option does not seem to have been taken into account in the appraisal by WS Atkins.

EfW plants cannot be started up and stopped easily and are generally operated on a 24/7 basis. To ensure LATS compliance means that the capacity for an EfW plant must be higher than the likely future demand. To operate 24/7 means there has to be other sources of feedstock to maintain near continuous operation. This means it will be producing emissions continuously. The same operating periods could apply to a pyrolysis operation but it is much easier to stop a pyrolysis plant and there is much less need to build in overcapacity. When an EfW plant breaks down – as it inevitably will over a long operating life, then there will be a need to deal with the wastes arising. This will be very expensive. A modular scheme is much less vulnerable to technology failures, and can cope with the inevitable breakdowns.

EfW plants regularly exceed the WID limits. This should be included in the modelling.

25 June 2008

## Statement to the Bristol City Council Cabinet Meeting 26/06/08 on behalf of Bristol Friends of the Earth

There are a number of points regarding the JRMWMS which have been raised by us on several previous occasions, which have still not been adequately addressed. We repeat these points at the end of this statement. We are also raising three major new concerns. A crucial issue which we must flag up of most importance is that the Phase 3 preferred option of EfW by incineration will increase WoE's (and therefore Bristol's) greenhouse gas emissions and therefore have an adverse impact on climate change. This information has been reported in the Jacobs report prepared for the Partnership but omitted from the Strategy document.

We request that approval of the JRMWMS be put on hold, pending further investigation particularly into the climate change impacts / 'global warming potential' of the proposals for waste management.

### **1. Misrepresentation of the climate-change impacts of incineration**

The WRATE evaluation of the technology options showed incineration as the second worst option for climate change. However, in the climate change section of the JRMWMS (p.74), a graph which combines climate change data with quality and cost performance evaluation has been included, which shows EfW by incineration as the second-best performing option. This is very misleading, as it gives the impression that EfW by incineration is the second-best performing technology for climate change, whereas what the graph actually shows is that EfW by incineration came second in a cost-quality weighted analysis. Basically the wrong graph has been inserted here. The correct graph is in the Jacobs document produced for the Partnership on the OA and WRATE analysis (A Comparison of the Emissions Determined in the Options Appraisal Modelling and the WRATE Tool Modelling).

Looking at the WRATE information on global warming potential (pp.29 & 30), Fig 6.6 – the graph of global warming potential – clearly shows that EfW by incineration will lead to an increase in greenhouse gas emissions, compared to the status quo, and is the second-worst performing option of the technologies. This would mean that the climate-change impacts of Bristol's waste will be WORSE than they are now.

The Strategic Environmental Assessment (Environmental Report for the Strategic Environmental Assessment of the Joint Residual Municipal Waste Management Strategy for the West of England Revised Final Report, April 2008) supports this interpretation:

*"All technologies will produce greenhouse gases, with EfW outperforming mechanical-biological treatment but none of the other options."*

If EfW by incineration is going to INCREASE our greenhouse gas emissions, then the Council is going to have to look to other areas in which to make its promised 60% CO<sub>2</sub> cuts by 2050. This is likely to mean trying to make even greater savings in the emissions from transport and people's homes in order to compensate for the Council's choice of waste disposal technology.

In a Parliamentary Written Answer dated Thursday, 19 June 2008 Joan Ruddock (Parliamentary Under-Secretary, Department for Environment, Food and Rural Affairs; Lewisham, Deptford, Labour) explained that:

*"Any plans for new energy from waste facilities must emerge out of local waste strategies, so that all options for reuse, recycling and composting can be explored first. We expect greenhouse gas emissions to be a key consideration of those developing waste to energy plants."*

The Report that has been presented to the Cabinet is also misleading. Under 2.2, it states:

*“More information was sought by some residents on the carbon emissions impact of the proposed technologies. **This was subsequently provided through a study using the Environment Agency WRATE model, the results of which have been added to the final version of the Strategy. Advanced thermal treatment was confirmed as the most preferential option, closely followed by energy from waste by conventional incineration at this stage. All options performed considerably better than the current status quo.** Further work on the impact of the tendered technologies on climate change will be undertaken as part of the evaluation process.”*

This statement (particularly the words emboldened) is wrong and misleading. The report further states in 3.2. that:

*“further technical work to consider environmental issues, including the impact on climate change [was undertaken]”*

It implies, wrongly, that this work has been reported on and included in the Strategy. It has not.

In addition the report to Cabinet states:

*“The Technology Options Appraisal determined the technology for the Reference Project to be Energy from Waste (EfW) by conventional incineration with a preference for combined heat and power (CHP), for the benefit of local energy users. Whilst Energy from Waste will be the reference project, this will not preclude interested parties coming forward with other forms of treatment which will achieve the requisite outcomes.”*

However, the modelling done both in the ToA and using WRATE did not include modelling of CHP, which suggests that CHP is not being seriously considered by the Partnership.

In its section on Sustainability Implications, the Cabinet Report notes that the residual waste strategy has been subjected to environmental appraisal and that a summary of the environmental report is given in the residual waste strategy, Section 5.7. However, what it fails to note is that not all of the environmental implications of the environmental appraisal have been reported or incorporated into the strategy. The Strategy states that key points that arose from the SEA are addressed in the strategy. This is not the case.

There is no evidence that the impact of increased greenhouse gas emissions from using EfW incineration has been addressed by the strategy, not least because it has been withheld from the Joint Residual Waste Management Strategy and associated reporting.

Not only are the increased greenhouse gas emissions and their global warming potential ignored and wrongly referred to in the Strategy, but also the SEA clearly states that EfW will also increase emissions to air of both NOx and PM10s as well as creating the greatest amount of hazardous waste.

The report to Cabinet also includes an Environmental Impact Assessment which also fails to recognise that the modelling has shown that EfW has serious climate change impacts. It also wrongly reports the WRATE modelling as showing that all of the options would *“improve on our current environmental burdens”*. If the WRATE modelling in the Jacobs report is considered, rather than the incorrect reporting of the WRATE modelling in the Strategy it is clear that this is not true.

The Strategy also states:

*“As a matter of protocol the Joint Waste Strategy will be fully reviewed at a minimum of every five years by the Partnership, or unless there is a significant change in government policy, regulation or legislation, for example:*

*2009 – Waste Framework Directive revisions*

*2010 – Adoption of the Development Plan*

*2012 – Expected updated Waste Strategy for England”*

With a hasty procurement process being recommended, including using restrictive tendering, it is not clear how the result of the reviews nor the outcomes of the development of Reduce, Reuse & Recycling Strategies by the authorities, will be reflected in the waste management of WoE waste.

The Report to Cabinet purports to deal with significant issues, however, the most significant issue of the procurement of a large, Energy from waste incineration plant, using the PFI process is not covered.

## 2. Redressing the poor assessment given to MBT

The MBT/AD/TT option that the Partnership modelled also scored badly for global warming potential because it too included burning of waste, as SRF (Solid Recovered Fuel) and this seems to be in large part because the non-recyclable fraction of the waste post MBT/AD is burnt rather than landfilled. As it would be primarily plastic, and therefore not biodegradable, if it was landfilled it would not release methane. Therefore the diversion of non-biodegradable waste from landfill to burning in that option also results in increased global warming potential. We are concerned that the MBT option considered by the Partnership was not the best use of MBT technology and had consideration been given to a range of MBT technologies it would have scored much higher. This option should be explored in greater detail.

It is important to bear in mind that the intention of diverting waste from landfill is primarily to reduce its climate impacts by removing the biodegradable waste. High levels of source segregation for recycling can achieve 70% diversion (according to Bristol City Council *Our City* publication Spring 2008), followed by MBT and AD only a small amount of non-biodegradable waste would need to be disposed of – and that would not be toxic and therefore not need be sent long distances to hazardous waste sites. Burning waste always produces not only greenhouses gases but toxic residues even though the waste is not toxic before it is burnt.

## 3. Problems with PFI

The proposal for a large-scale EfW by incineration plant came from the waste industry and we consider that this is being promoted so that the public purse will underwrite waste disposal for commercial waste, for which there are no statutory reduction or recycling targets, nor any duty on the public authorities to provide disposal facilities at public liability. Not only does a PFI EfW incinerator guarantee a waste operator 25 years of profits from MSW it gives them a subsidised infrastructure to generate further profits from commercial waste.

The JRMWS is clear in saying that the industry has indicated to WoE that: *“they would be seeking to include commercial and industrial waste in their facility and would be expecting to size the facility to provide the excess capacity required.”* The WoE has accepted this and in the risk assessment states: *“Chosen technologies and facility sites will be selected with the capacity to handle greater volumes of waste than would be anticipated if the collection systems were successful.”*

Whilst the Criteria for Securing Waste PFI Credits do allow for commercial waste this is subject to two tests and we do not consider that the tests have been met in this instance.

*“12. Projects should consider the potential for including other waste streams such as commercial or industrial waste, on the basis of securing a value for money solution. However, projects must demonstrate that:*

*– the project continues to deliver value for money in relation to the biodegradable municipal waste being managed through it;*

*– any cross subsidisation of the costs of disposing of non-municipal waste streams is transparent and acceptable to all stakeholders.”*

This must not be at a considerable risk not only to the public purse but also to the environment, by burning commercial waste, rather than recycling it, and increasing global warming.

In the near future, a 3Rs strategy will emerge which should significantly reduce the potential residual waste and this will result in an over provision of incineration capacity. The WoE Partnership must be aware of this and therefore the provision of an oversized EfW incinerator, funded through PFI would be a misuse of public funds.

All of the following points have been raised by us in previous statements, but have not been adequately addressed. The Joint Residual Municipal Waste Management Strategy for the West of England still contains a number of misleading statements and assertions.

1. The summary version of the JRMWMS refers to itself as a 'Joint Waste Strategy'. It is not. It is a Joint *Residual* Municipal Waste Strategy. A 'Waste Strategy' would deal properly with the waste hierarchy, tackling it from the top-down, through reduction, reuse, recycling, recovery and only then looking at disposal. The West of England 'Joint Residual Municipal Waste Strategy' only tackles the last part of the waste hierarchy – disposal.

2. The term 'Energy from Waste' or 'EfW' is still being used interchangeably with 'incineration'. These are not the same thing, and it is misleading to use the terms synonymously. All of the technologies considered in the Rubbish or Resource consultation contained an element of generating energy from waste – even landfill.

3. The Strategy is still using the much-quoted statistic that "58% chose EfW as their preferred technology option". This 58% figure comes from the questionnaire responses of 166 people across four Authority areas. 166 out of 285 people who filled out the Rubbish or Resource questionnaire ranked 'EfW' as their first choice out of 7 technologies. In the aggregated scores for this section of the questionnaire, 'No reply' actually scored higher than 'EfW'. It is misleading to portray this as a resounding vote of support for incineration, or for the Council to claim that people were entirely clear about the technology options that were being presented, when it is obvious that a large portion of respondents felt unable to complete this part of the questionnaire.

4. The JRMWMS makes a big assumption that there will be "economies of scale" in arriving at a joint WoE solution – without making any cost comparisons of one big facility vs, for example, a mix of technologies at smaller-scale plants.

5. The JRMWMS states that each authority "will move toward a longer term aim of achieving zero waste". This aim needs to be formalised in Bristol, so that this goal becomes the underlying principle behind all waste management decisions.

6. The Waste Incineration Directive (200/76/EC), Article 6(6) requires that: "any heat generated by the incineration or the co-incineration process shall be recovered as far as practicable". If the WoE persist in pursuing EfW by incineration, the procurement process must demand CHP. The JRMWMS currently uses language such as EfW "offers an opportunity to provide power/heat for local users". This wording is not strong enough – the WoE should *demand* CHP in any EfW incinerator.

Bristol Friends of the Earth would obviously like BCC to think again, and to follow the lead taken by B&NES in withdrawing from Phase 2 of the Strategy. We request that approval of the JRMWMS be put on hold, pending further investigation particularly into the climate change impacts / 'global warming potential' of the proposals for waste management. We would also appreciate some feedback on this issue, as we feel that any decision to pursue EfW by incineration will have major implications for policy in Bristol for the next 30–40 years.

Recent rises in the cost of oil have illustrated how future price increases will change the whole economics of waste disposal. It is likely that plastics will become far more expensive, and will be too valuable to either send to landfill or burn. Packaging volumes will decrease as oil prices go up further, and reuse and recycling will become far more vital. It is essential that we adopt a flexible solution to waste disposal that will allow us to adapt to our changing circumstances. A 25-year incineration contract, where we can only adapt to falling domestic waste levels by subsidising the burning of commercial waste, is certainly not the way forward.

**Jane Stevenson**

on behalf of Bristol Friends of the Earth