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## Tackling the West of England's waste

An alternative briefing from Bristol Friends of the Earth

### Some key facts about what is proposed

- No decision has been taken to build an incinerator and no site for any large-scale waste treatment solution of any kind has yet been chosen.

But the WoE have used a 160,000 tonne incinerator as the reference project in their bid to win PFI credits. If we carry on with this incinerator in our bid, and it stays in the plans when the WoE put the waste contract out to tender, then even if they make the tender 'non-technology specific', then we are almost certain to end up with an incinerator. The terms in the tender will be drawn up using a 28-year incinerator contract as its basis. It will be very difficult for companies offering alternative technologies to match exactly the same terms – even if they can deliver practical and economic solutions. This is what happened in Oxford, where the waste contract was described as 'non-technology specific', but was framed in such a way that companies offering 'greener' waste disposal methods felt compelled to withdraw from the tendering process. If the WoE carry on using the incinerator as their reference project, then we need to ensure that when the waste contract goes out to tender, that it is 'non-technology specific', but that it also rules out mass burn incineration as a suitable technology. These are the terms being used by the Milton Keynes and Northamptonshire Partnership in their current PFI bid.

- Bristol's population is growing and more homes will be built over the next few decades. More waste will be generated and more heating and lighting needed.

The projected growth in residual waste has been consistently overstated. The WoE have already had to revise their projections downwards. Waste volumes per head are falling. The estimated growth in waste levels in the WoE is based purely on the projected increase in the number of houses in the area, as dictated by the Regional Spatial Strategy. There is much debate about the likelihood of this level of house building going ahead in the current and future economic climate.

- We face fines and taxes if we continue to bury today's waste in landfill – and these costs will increase if we don't have reliable alternative solutions to deal with future levels of waste.

LATS penalties are paid on disposing of biodegradable waste to landfill. We have spoken to one local waste expert who believes that it would be cheaper for the WoE to pay the LATS penalties, rather than to use incineration. The WoE strategy does nothing to try and separate out the biodegradable waste from the rest of our residual waste, and in their comments on the Expression of Interest, Defra noted that the WoE had done little to try and remove (biodegradable) wood from the waste stream. Defra favour using anaerobic digestion for dealing with food waste, as this process can also be used to generate energy from waste. Their comments on the Expression of Interest state 'we expect to see anaerobic digestion considered'.

- Even with the best possible recycling performance, it is estimated that at least 27% of all household waste will need to be treated in some other way over the next 25 years if we are to avoid burying it in landfill sites.

There are worse things that we can do with our waste than send it to landfill. Incineration does not make waste go away, it just reduces it to about 40% by weight or 25% by volume. Bottom ash still needs to be disposed of to landfill. The WoE suggest that this ash can be used to make aggregate, but only around 40% of currently-produced bottom ash is used in this way, and with a 'dash to incinerate' across the country, it is highly likely that our ash would not find a market. Fly ash is hazardous waste, and needs to be disposed of to a hazardous waste site – probably outside our region.

- The draft waste strategy is not just about choosing long-term waste treatment solutions. It's also about tackling the immediate problems that Bristol and the sub region have with waste being buried in landfill today – and it's about increasing the recycling, reuse and reduction of waste now and in the future.

Bristol Friends of the Earth have no problems with Phases 1 and 2 of the waste strategy. Like B&NES, we would like to go ahead with these phases, but reject Phase 3 if it involves incineration. As Defra have pointed out in their comments on the Expression of Interest, we need to do more towards waste reduction, and to demonstrate how we will meet our recycling targets. The WoE have tackled the whole waste issue from the wrong end – dealing with residual waste without ever having an overarching waste strategy that looks at the whole waste hierarchy – reduction, reuse, recycling, recovery, disposal

The WoE have only looked at the end of this chain – at recovery and disposal.

It has been left to the individual authorities to come up with their own recycling strategies, and Bristol's approach has been to do little other than attempt to meet the national targets.

What we need is a genuine zero waste strategy that looks at the whole waste hierarchy, and attempts to design waste out of the system.

- Rejecting the Private Finance Initiative (PFI) as a potential way of funding any long-term waste treatment solution is also an option – but it would effectively close the door on a way to secure interest-free capital funding worth between £60 million and £80 million. That's around half of Bristol's whole capital investment programme for the next three years.

PFI may not offer the best deal for Bristol – even with the possibility of PFI credits. PFI projects tend to deliver oversized facilities that are very lucrative for the waste companies, and the procurement process is very expensive for Councils. PFI favours old technology, because Councils think that this will give them a better idea of likely cost. PFI sets a contract life that will favour incinerators, because their construction payback time is so long. Using incineration as the reference project in the PFI bid will act as a barrier to waste companies who would be able to deliver more flexible solutions. Just because it looks like we are getting 'money off' something, doesn't make it a good deal.

PFI credits will not provide half the capital cost of the proposed waste facility. They will provide an amount that will be determined before procurement starts – so the WoE will not get any more money if the contract when signed is considerably more expensive than when estimated. PFI credits will be paid at a fixed amount per year for the lifespan of the contract, but the utility cost to the WoE will rise substantially each year – meaning that Council tax will also need to rise each year to cover the increasing bill.

The PFI repayments are likely to use up so much of Bristol's waste budget, that there will be little left for spending on waste reduction or on improving recycling.

- New and emerging technologies, such as pyrolysis, have not yet been proven to be able to deal with large amounts of household waste in the UK, according to the government's Department for the Environment, Food and Rural Affairs (DEFRA) and other councils and experts up and down the country. Ethos, the commercial operator exploring such technologies here in Bristol, have not even begun building their plant and no operational start date is yet known. There is no certainty that such a solution would work – even though everyone wants it to succeed.

But there are other technologies that *are* working, and have been used in PFI bids by other authorities.

In previous rounds of PFI funding, the following councils have used combinations of MBT (Mechanical Biological Treatment) and other technologies:

MBT/In-vessel composting: Cambridgeshire, Lancashire, Wakefield

MBT/Anaerobic digestion: Leicester city

MBT: East London Waste Authority

MBT/Refuse-derived fuel: Southwark, Greater Manchester, Cheshire, West Sussex

And in the current round of PFI bids:

NOT incineration: Milton Keynes and Northamptonshire Partnership

MBT/Anaerobic digestion: Norfolk

MBT/EfW: Bradford

MBT/RDF/CHP: South Tyne & Wear

MBT: Cambridge

B&NES propose to implement their zero waste strategy, and to then extend the WoE Phase 2 contract – which will probably be MBT – to tackle their residual waste.

Friends of the Earth recommend anaerobic digestion for processing food waste (which can be used to generate energy from waste), and MBT for treating residual waste. This would allow the maximum amount of recyclates to be removed, and the stabilised output would be sent to landfill. This would remove the biodegradable component of the waste. Working on a genuine zero waste strategy would then help to reduce the amount of waste still going to landfill.

## Answers to some of the most Frequently Asked Questions

### About the Strategy

#### What is the strategy?

The West of England Joint Waste Management Strategy provides a framework for how the sub region's waste might be dealt with over the next 25 years. It has already won full support from our neighbours in South Gloucestershire and North Somerset and support for most of its proposals from Bath and North East Somerset. It makes improved performance in recycling, reuse and reduction of waste a top priority now and for the future. It is NOT solely about the precise technologies that could be used in future to deal with waste that can't be recycled.

As we have already stated, the WoE do not have a Joint Waste Management Strategy – they have a *Joint Municipal Residual Waste Strategy*. There are no joint plans to improve performance in recycling, reuse or waste reduction.

B&NES have withdrawn from a major part of the Strategy because they believe that incineration is incompatible with their zero waste strategy, and because they think that PFI is too inflexible to deliver an appropriate and cost-effective waste disposal technology. The waste market changes rapidly – for example, we have recently seen great increases in the price obtained for recyclates. A long-term PFI contract will either need to be very flexible in order to deal with changes in the waste stream – in which case the contractor will want to charge the WoE more for that flexibility; or the contract will be inflexible, so we will not be able to adapt to changes in waste volume or composition. Such an 'inflexible' contract may be superficially cheaper, but may also commit us to keep on delivering large volumes waste – whether we are producing them or not.

#### What does the strategy propose?

In broad terms, the four phases of action proposed in the strategy are:

- To step up the drive to recycle, reuse and reduce waste now and in the future
- To find an alternative to using landfill sites for much of our waste within the next two years
- To find longer term solutions for dealing with an ever-increasing quantity of non-recyclable waste over the 25 years from 2015

- To ensure that our longer-term plans allow for the development of new and evolving treatment technologies

Although the Strategy is looking for 25 year solutions the WoE proposes to enter into 28 year contracts. Given the likelihood of change in waste legislation and national and European policies, waste reduction and improvements in waste management and treatment technologies we consider a 25 year contract to be too long, but a 28 year contract is excessive and falls outside the plan timeframe and ties the West of England councils and their electorate into far too long a commitment.

## The Scale of the Challenge We Face

### What is the scale of the problem today?

Bristol alone already sends 115,000 tonnes of non-recyclable waste to landfill each year. That's enough to fill 220 Olympic swimming pools or more than 18,000 living rooms! Rubbish buried in landfill site generates methane – 21 times more damaging to the environment than carbon dioxide.

But the WoE's own analysis showed that our climate change impacts would be WORSE if we use incineration, than if we stick with sending our waste to landfill

### Surely that's all a long way off in the future – don't we have plenty of time?

No. We have an immediate problem with the amount of waste currently buried in landfill, the environmental damage that is causing and the fines and taxes we will be charged as a result. If we are to tackle that immediate problem we need to adopt a strategy now.

The important waste to remove from the landfill and to comply with the European legislation is the biodegradable waste. Bristol's recycling scheme deals with the majority of the biodegradable waste – paper, cardboard, food, green waste. It also removes metals, and a range of other wastes including plastic bottles through bring banks. The incinerator should not be burning these wastes anyway, as they should already be diverted from landfill. The important area to invest time and money in is the diversion of these waste streams from disposal – not to simply shift disposal from landfill to burning.

### Why can't we recycle it all?

Bristol is the most successful major city in the UK for recycling but despite this only 38% of all our household waste is recycled. Even if every resident recycled everything they could, current estimates are that we would still have about 27% of waste that is non-recyclable and would have to be treated or disposed of in some other way. Currently it is buried in landfill sites, which is not sustainable.

The waste that can't be recycled is thought to be closer to 11% not 27%. Of that 11% much of that is packaging which is being decreased through being designed out. Packaging is primarily oil based plastic and is therefore fossil based. Plastic also produces dioxins when it is burnt. When buried in the ground it is inert.

### What would be the cost of doing nothing?

To do nothing is an option. However, failure to agree a waste strategy now would not only be environmentally damaging but would create a massive financial burden for the council taxpayers of Bristol. Taxes and fines imposed on the West of England for continuing to use landfill and doing nothing more than the current programme to increase recycling, would total £0.4 billion over the next 25 years – with Bristol facing a share of that bill of almost £0.2 billion. At today's prices, that's the equivalent of losing all the money we would need to maintain Bristol's parks and sports facilities over the next 20 years. Or put another way, it's like losing all the money we would need to support our older and disabled people for the next five or six years.

No one has ever suggested that the local authorities should 'do nothing'. It has never been a serious proposition, yet the Council's FAQs and their strategy keeps referring to the 'do nothing' or SQ option. What they should be comparing incineration to, are the other good solid options, e.g. MBT/AD/increased recycling/waste reduction strategies.

## Choosing the Technology – and Financing It

### Has the technology for dealing with our waste in the long term been chosen?

No. If the strategy were agreed, the partnership would look at all the options and take advantage of any developing technology. Under EU and UK regulations, we are required to invite bids from competing companies to provide a solution that meets environmental and financial criteria. As part of this process, bids would be invited from any suitable organisation – regardless of the technology they were proposing.

The likelihood of other processes being proposed by waste contractors bidding for the Phase 3 WoE contract is extremely slim, given that the documents produced by the WoE have indicated a clear preference for mass burn incineration. To pretend otherwise is simply misleading.

### Are we the only area in the UK considering the use of PFI?

Definitely not. Some 46 councils or groups of councils, with administrations drawn from all the main political parties, are using the PFI process to fund their long-term waste solutions. Currently, 17 of these authorities or groups of authorities are exploring the potential for PFI under the last two rounds of bidding – and these include Gloucestershire, Dorset and a partnership of Plymouth, Torbay and Devon County councils.

The letter from Defra raised a number of areas of concern including CHP and recycling. The issue of CHP still needs to be addressed, as does the lack of any reduce, reuse, recycling plans and the unambitious target. Without these issues being adequately addressed the WoE will not succeed in its PFI bid.

### Does a PFI bid tie us in to any particular technology?

No. However, the government does expect any PFI bid to include a reference project. This would set out a tried and tested solution, which meets all their criteria and could be delivered if no other solution was forthcoming. Without a reference project, funding could not be secured through PFI – but it does not have to be the solution that is ultimately used if another existing or new and developing technology can be proven to work within the budgets and timescales.

Incineration is not the only ‘tried and tested’ technology that can be used in a PFI bid. We have already listed the authorities who have successfully used MBT in their bids. Other authorities have opted for a mixed-technology solution. For example, the PFI bid for the Milton Keynes and Northamptonshire Partnership uses:

- 2 BMT plants (Biological Mechanical Treatment)
- 2 In-vessel composting plants
- 1 Thermal treatment plant (gasification)
- 2 Waste transfer stations

This tends to make the WoE bid look like a ‘dash for cash’, trying to get into the last round of funding, using the least imaginative off-the-shelf reference project available.

### So, the council and its partners haven’t agreed to build an incinerator?

No. We have not agreed to build an incinerator and adopting the strategy does not commit us to doing so. A modern, clean Energy from Waste plant that burns waste to generate hot water and electricity to power homes and businesses is only included as the reference project to support any potential bid for PFI funding. The final technology to be used has not been selected.

But unless we make the terms of the tender ‘non-technology specific, but NOT incineration’, then we are very likely to end up with an incinerator.

Modern incinerators may be cleaner and shinier than their older counterparts, but they still produce hazardous ash and emit dioxins.

The incinerator used as the reference project in the PFI bid did NOT include any provision for CHP (combined heat and power). That is, the reference model did generate electricity, but there were no plans to harness the waste heat. A CHP incinerator will be more efficient than the reference model, but also considerably more expensive. Defra have commented that they expect to see CHP in the WoE bid, but in order for this to happen, there needs to be a CHP partner at the outset of the incinerator plans. Retro-fitting CHP is costly and very unlikely to happen.

### **What technologies are there?**

Not that many that are tried and tested and known to be able to deal with the amount of household waste we are talking about. In broad terms, the two proven technologies are Energy from Waste (EfW) and Mechanical Biological Treatment (MBT). Other technologies are emerging but the government, and experts up and down the country, say they aren't proven yet.

As already stated, Defra actually recommends anaerobic digestion to provide energy from waste, when dealing with food waste. It is widely proven in Europe and is eligible for Renewables Obligation Certificates on electricity generated.

### **What is Energy from Waste exactly?**

It is a way of treating large amounts of non-recyclable waste. It often includes schemes that burn waste but are safe; have a limited impact on the environment and produce hot water and electricity to power homes and businesses as a by-product. This keeps down energy costs and minimises the country's reliance on importing gas and oil from parts of the world that are open to political unrest, war and terrorism. At a time when other forms of energy are increasingly expensive or pose a real environmental risk, it makes sense to at least consider how we might reuse waste materials to generate electricity and hot water.

David King, the former UK government scientific adviser, said that climate change was a far greater threat to the world than international terrorism. Incineration will increase our climate change impacts. Much of the waste that would be burned in an incinerator would be from imported goods. Surely in times of international instability we would be looking to conserve any resources, not to burn them?

Energy can be generated from many waste disposal processes – even landfill, where methane can be captured, and used to generate electricity. However, the term 'Energy from waste' tends to be used by the WoE to mean 'Energy from waste by incineration', and the terms 'EfW' and 'incineration' are used interchangeably by the Partnership.

What this definition overlooks is the overall waste cycle. We can recover far more energy from an object that is reused or recycled than we can from burning that object and using the heat to generate electricity. Burning plastics in an EfW incinerator just displaces one fossil fuel with another.

### **Where else is it used?**

There are already modern Energy from Waste plants operating successfully right across mainland Europe, with 20 of them in the UK. As a result of this and other alternatives, Sweden only needs imported oil for 5% of its energy production.

Sweden only needs to import oil for 5% of its energy production, because it has a well-developed and state-run hydro electric power system. It has very little to do with incineration.

Only two incinerators in the UK are of a comparable size to WoE proposal. One is the Eastcroft incinerator in Nottingham which is currently undergoing a £20m refurb and breached its permit/licences during its operation on several occasions. The refurb is to take it from 160k tpa to 260k tpa. If this incinerator has been the basis for the WoE reference project, then it is an old technology incinerator and has been notoriously problematic in its operation. The other similarly-sized incinerator is in Sheffield, and it is not working well either. It has been taking in trade waste to make up for the shortfall of household waste within its area. The trade waste was largely paper, cardboard and plastic, and burned too hot for the incinerator. The operators had to feed it in slowly in order to keep the heat down – which meant that they could not feed through as much waste as they would have liked. The operators now plan to take municipal waste from beyond their area and compete with other local authority incinerators for MSW – but to do that they need to get revised planning permission. This shows that the model proposed by waste operators and adopted by WoE of "we can expand to take commercial waste and/or make up short fall from commercial waste" has been tried in the only similar-sized 'modern' incinerator and has failed. One of the most modern of the new generation incinerators (i.e. ones that are planned to meet the latest waste laws) is Kent which has been out of operation for over 12 months.

### **What is Mechanical Biological Treatment (MBT)?**

It's a way of breaking down waste through a form of accelerated composting but it can't deal with every kind of waste and it leaves a residue that still needs to be disposed of in other ways, normally by burning it. This means it is not necessarily the most cost-effective or environmentally friendly way of treating waste. It can generate some energy but not as efficiently as Energy from Waste.

This is really half an answer. This describes the 'B' part of the process. The initial 'M' or Mechanical part involves the removal of recyclates from the waste. The rubbish then goes through the composting process, and then through another process to try and remove any remaining small-scale recyclates. The 'grey' compost that is produced as the end product can be used for land reclamation, or can go to landfill, but it is not of good enough quality for agricultural use. Alternatively, the 'compost' can be processed into a solid recovered fuel and burned. Defra consider this to be a contribution towards CHP, where on-site CHP is not practical.

### **Can't you delay the process to give pyrolysis and other emerging technologies a chance to prove themselves?**

Unfortunately not. Short to medium term solutions need to be found now, otherwise the environment will be damaged and council taxpayers will face a financial burden. The outline business case to the government for possible PFI funding for a long-term solution also needs to be submitted by October 31st this year – and the government say there will be no further bidding rounds after this one. We have to make progress now or we may fail to tackle the sub region's waste and lose our option of securing future funding through PFI. As we have said, we may still be able to consider new and emerging technologies later in the process should they be proven to work and to meet government criteria at that time.

The lack of flexibility posed by the scale of a mass burn incinerator, coupled with a long commercial contract would impede the range of new and emerging technologies open to BCC / WoE. A more flexible option that did not rely on a large single use capital project, such as MBT, would be more likely to enable these future options when technological improvements occur.

### **Is there going to be further consultation?**

There are many stages to go through before any long-term solution for waste treatment is finalised. Along the way there will be further informal and formal opportunities for discussion and engagement with communities and stakeholders about the options available. Nothing will be implemented immediately simply because the strategy has been adopted by the four councils.

The Council has advised FoE that there will be no further consultation on this project prior to submitting the bid to Defra nor any further opportunity for elected Members to consider the proposals prior to submission. It will be a Cabinet and WoE partnership decision only.