

Strategic re-appraisal: Residual Waste Project

GCC response to issues raised outside of the scope of engagement

January 2011

1. Executive summary

- 1.1 As part of the strategic re-appraisal the council asked for the views of a number of interest groups and individuals regarding the treatment of residual waste based on four questions. In addition to responding to these questions, many stakeholders commented on a number of additional issues that were related to waste management but outside of the scope of the residual waste project strategic re-appraisal. The county council's response to these comments and its recommendations for further action is below.
- 1.2 As part of the strategic re-appraisal the council asked for the views of interest groups regarding the treatment of residual waste. In addition, the invitation to engage in this process was published on our Recycle for Gloucestershire website. A summary of the responses received is available at www.recycleforgloucestershire.com/real_rubbish
- 1.3 A number of the concerns that were raised are already being addressed or are included within Gloucestershire's Joint Municipal Waste Management Strategy.
- 1.4 The Waste Core Strategy estimates that landfill has a capacity of at least 10 to 13 years based on current throughputs, however many stakeholders recognised that landfill was neither environmentally nor financially sustainable.
- 1.5 A number of stakeholders called for the council to increase recycling. Gloucestershire has increased its recycling from 24% in 2004/5 to 49% in the year to date. This represents a tremendous achievement by the people of Gloucestershire and the staff and contractors responsible for collection services and household recycling centres. The current recycling target is 60% by 2020. Gloucestershire County Council's aspiration is to achieve 70% recycling by 2030. We believe that this represents one of the highest targets aspired to by any council in England.
- 1.6 Whilst some stakeholders quoted high recycling rates in other countries, unfortunately, most of these were based on a different methodology than that used in the UK. The top five highest performing European countries are averaging 60% recycling and composting when measured on a like for like basis with the UK. The council acknowledges the need for all councils to work towards the highest

levels of recycling possible whilst ensuring that a quality service is provided to customers. The delivery of these services also needs to recognise the financial constraints that the public sector has to work under.

- 1.7 Concerns were also expressed about the varied collection systems across the county. These are run by local district councils. The county council, and some of the district councils, are working together to form a joint waste committee, which will allow the councils to look at efficiency savings including assets and, ultimately, collection systems. This could include reviewing the co-mingled collection of recyclables that would require segregation within a Materials Recycling Facility and joint collection contracts, all with the aim of improving customer service, increasing recycling rates and reducing costs.
- 1.8 Some stakeholders called for the county council to take advantage of emerging technologies. A review has been carried out to ascertain if there are any new technologies which had not previously been considered. Regrettably no evidence of this was found. This conclusion is supported by the fact that 95% of the waste treatment facilities planned or under construction in the UK are either Mechanical and Biological Treatment (MBT) or Energy from Waste (EfW). It should also be noted that in advertising this contract the council was technology neutral and bidders were free to propose any viable solutions.
- 1.9 A number of responses called for the use of Anaerobic Digestion (AD), a technology that manages organic waste and recovers energy. This can only be used for the organic fraction of the waste, and preferably when it is collected separately. By April 2011 the council will be making incentive payments to four district councils to collect organic waste. Currently this waste is treated using In Vessel Composting in Gloucestershire. The council is due to renew its current organic waste contract in 2013 and is intending to work with the university sector to evaluate the potential of AD. Options being evaluated include both dispersed solutions and the potential use of biogas as a fuel.
- 1.10 There was also a call for the use of MBT using AD technology with landfill. This leaves a residue of up to 75% of the original tonnage being sent to landfill. Some stakeholders correctly recognised that this was financially unsustainable because the amount landfilled is taxed at the full landfill tax rate. Only a few stakeholders favoured an out of county solution. There is no existing available capacity in neighbouring counties and the only significant planned capacity has been the subject of a bid under the current procurement
- 1.11 Health was recognised as a potential issue and the county council has appointed Professor Roy Harrison as an independent adviser to provide advice on the health issues of any type of waste treatment.
- 1.12 The council's overall objective is to push waste as far as possible up the waste management hierarchy of Reduce, Reuse, Recycle and Recover (the 4 Rs). The council has invested, and will continue to invest, in all of these areas. Whilst 'recycling' often gets the highest attention the council also recognises that the 'reduce' needs to be addressed and we welcome such initiatives as 'lightweighting' whereby the weight of containers is reduced and other initiatives to reduce packaging. The council notes that the top five European countries have an average

of 60% recycling but recover energy from 37% of their waste through thermal treatment¹. Like them we accept that there is a percentage of MSW, eventually around 30%, that cannot be dealt with through 'reduction, reuse and recycling' and that the most environmentally and financially responsible way of dealing with this is to recover energy with landfill only being used as a last resort.

1.13 Conclusion and recommendations

- 1.13.1 Formal consultation was not a requirement of the strategic re-appraisal; however the stakeholder engagement conducted provided an opportunity for interest groups and individuals to contribute. Responses were received from most interest groups known to the authority.
- 1.13.2 Based on the responses, officers have taken forward the following themes for further investigation:
- a. Current waste strategy and vision — to raise awareness of the current waste management strategy, vision and current plans for increasing recycling.
 - b. Joint working and improvement in collection systems — to continue to work in partnership with district councils to review opportunities to increase waste reduction and recycling rates.
 - c. Anaerobic Digestion — to explore the potential for Anaerobic Digestion being used as a treatment technology for food waste.
 - d. Case studies — to review all community based schemes and incentive schemes highlighted by stakeholders to understand if these can be replicated in Gloucestershire e.g. Cwm Harry, Presteigne.
 - e. Resource Recovery Park — to explore the opportunity of developing a resource recovery park, and the potential to work with universities/other organisations to establish the feasibility of such a park.

¹ Eurostat 2008

2. Key issues

2.1 Level of awareness

Many of the initiatives proposed by stakeholders are either already being carried out or a similar initiative exists.

In 2007, the six waste collection authorities and the waste disposal authority (Gloucestershire County Council (GCC)), collectively known as the Gloucestershire Waste Partnership (GWP) adopted a strategy which delivered a route map for the management and disposal of Gloucestershire's municipal waste (the Joint Municipal Waste Management Strategy or JMWMS). It sets out a vision where waste is seen as a resource and we achieve a recycling and compost target of 60% by 2020. The JMWMS and the Recycle for Gloucestershire website outline the many ways which the GWP promote and implement the 3Rs – these are accessible at www.recycleforgloucestershire.com

2.1.1 Zero waste and the Waste Hierarchy

When considering alternatives to landfilling residual waste, many responses stated that this authority and its district partners should be delivering a zero waste strategy. In addition, many set out the steps of the waste hierarchy, pointing out that the authority should adopt this approach.

The JMWMS is based on the waste hierarchy. Waste should be minimised but when produced it should be seen as a resource. Landfill is the last resort. Government has stated that its main aim moving forward will be to ensure that we are taking the right steps towards creating a zero waste economy, where resources are fully valued, and nothing of value gets thrown away. This includes the use of recovery processes including energy from waste technologies to achieve this aim.

2.1.2 Recycling Rates

As stated, our current strategy is to increase recycling and composting to a minimum of 60% by 2020 and to reduce residual waste to 478 kg/hh in the same timescale. GCC also has a further aspiration to increase recycling to 70% by 2030. Some responses viewed the 60% recycling target as un-ambitious and the demise of PFI funding as now an opportunity to revise this to as high as 85%. One stakeholder believed the target figure of 60% recycling by 2020 is ambitious.

Very often examples of high recycling levels were provided which on further investigation were revealed to be unfounded. Often the definition of waste varied and diversion from landfill was confused with recycling levels. For example, San Francisco is quoted as reaching 75% recycling within a 10-year period. The 75% figure is the figure for commercial and residual waste plus demolition waste. The comparable recycling figure is actually 55%.

Currently any recycling rate above 60% represents a significant achievement.

2.1.3 Reduction

Gloucestershire encourages residents to reduce the amount of waste produced through the implementation of local waste minimisation schemes and through working in conjunction with regional and national initiatives (e.g. real nappies and love food, hate waste campaigns) to assist the successful decoupling of waste growth from the economy. However, it must be recognised that population growth and the requirement for new housing within the county, together with increases in other waste streams will have an impact on total MSW arisings.

GCC continues to lobby and promote reduction of packaging via the routes available to a local authority. GCC also continues to work with supermarkets to promote recycling and waste reduction.

2.2 Government Review of National Waste Strategy

We are aware of the government's review of the National Waste Strategy. The Authority has responded to the recent consultation. We remain in close contact with Defra and whilst the details of recent discussions held with Defra are confidential, we are aware of nothing that would substantially change the current thrust of the JMWMS and the requirement to divert waste from landfill.

2.3 Waste volumes and forecasting

The authority's waste forecasting is challenged by some respondents; the main conclusion is that the county's waste will reduce year on year. Some stakeholders felt there will be no need for an alternative to landfill to treat residual waste to manage as all waste will be recycled, composted and the remaining inert material can be landfilled safely.

The recent report by Defra (Spending Review 2010- Changes to Waste PFI Programme) proposes four waste growth scenarios for household waste to 2020. Even the most conservative (ie. most modest growth) assumes that household waste

will grow by 8.15% from 2010 to 2020 if the actual figure for household waste arisings for 2009/10 for England is subtracted from the Defra projected figure for 2020. Defra's waste projections have incorporated factors such as past events and trends, and consumption expenditure.

2.4 Joint Working

Some respondents expressed their view that joint working and further harmonisation of collection schemes would facilitate the delivery of higher recycling rates. GCC and four district partners are proactively exploring these benefits.

At present GCC, Cotswold District Council, Forest of Dean District Council, Tewkesbury Borough Council and Cheltenham Borough Council are working together to develop a joint waste committee, which would deal with the whole waste stream for these areas.

2.4.1 Collection systems/Source separation

Some responses felt that GCC should support district councils to maximise doorstep collection of food and garden waste. GCC currently supports district councils to increase collection services for residents of Gloucestershire through recycling credits which are paid based on the tonnage of recyclables collected (and recycled) and via an incentive payment. The incentive payment is available to assist the implementation of food waste collections (whether separately or mixed with garden waste). This incentive payment is made available on an annual basis and is based on the following principles:

- a commitment to achieve the agreed landfill reduction;
- annual review;
- fairness to all parties; and
- development of a legal agreement (between the parties) to facilitate payment.

There was actually a division in views over co-mingled versus source segregated in individual boxes. A number of respondents supported source segregation as they felt it would provide better quality products whereas co-mingled materials led to a greater level of contaminated waste. Other respondents felt co-mingled collection of dry recyclables worked better on a practical level – a greater range of materials using one container rather than many which require storage.

A range of examples of high performing recycling schemes have been provided. These included Cwm Harry Land Trust; New Earth Solutions; Biogen-Greenfinch; Adnams Brewery AD; South Oxfordshire District

Council; and overseas examples such as UR-3R. It is agreed that good schemes are widespread, and many of these exist in Gloucestershire. These include Cotswold District Council; Walls AD; Upton Wold AD; Printwaste; and smaller community based schemes such as Fairtide and Bisley Community Composting. It is expected that this list will continue to grow and GCC will continue to support these initiatives.

2.4.2 Community schemes

Some responses felt GCC should make good use of this voluntary effort, in line with the big society. GCC acknowledges the role that society has in taking responsibility for the waste it produces and for taking steps to reduce it. GCC has a long history of working with, and supporting, the voluntary and community sector.

- Recycling Credit payments are made to dozens of charitable reuse organisations,
- Start-up and ad-hoc maintenance grants are paid to local community composting groups on top of ongoing recycling credit payments,
- Local parish councils and supporting groups work with us to deliver awareness campaigns; and
- GCC as part of GWP continues to develop and work with networks of voluntary groups, such as the Community Composting Network, furniture recycling, community champions and master composters.

Several responses use the example of Cwm Harry Land Trust as a good practice example of a waste collection service. Cwm Harry Land Trust is a charitable organisation concerned with promoting locally grown food in Powys. Since April 2010 they have been running a 12-month trial collection of recycling, food waste and residual waste for 10,000 households in Presteigne and Newtown. Cwm Harry transports its food waste to Biogen-Greenfinch in Ludlow, Shropshire to be processed using an anaerobic digestion system. It does not provide any treatment solution for residual waste, which is disposed of in landfill. The trial is grant funded by Cylch, the community recycling network for Wales.

Whilst our experience to date is that there has been very limited interest in developing local schemes at the Parish and Town Council level, GCC is hopeful that more ideas will be forthcoming.

2.5 *Anaerobic Digestion*

Support for the waste treatment technology, anaerobic digestion (AD), was evident in many submissions. In many cases, this was anaerobic digestion incorporated as part of an MBT facility.

Anaerobic digestion is most suited for the treatment of source segregated food waste. The digestate that is produced (which is about 80% by weight of the incoming waste) can be beneficially utilised as a fertiliser on agricultural land. This is not however the case for digestate arising from MBT from mixed residual waste which is contaminated.

Gloucestershire County Council supports the use of AD for the treatment of household food waste. The council is intending to work with the university sector to evaluate the potential of AD.

2.6 *Impacts of incineration*

Several respondents were against the use of energy from waste due to concerns about increased levels of traffic, for health reasons, and also the fact it produces hazardous waste that requires disposal at hazardous waste landfill. It has not been established if this view is repetitive of the Gloucestershire residents as a whole.

Javelin Park is positioned next to junction 12 of the M5 and a full traffic impact assessment will be carried out as part of any planning application.

Incineration is a proven technology with a successful track record in the UK and Europe, particularly in countries with the highest recycling rate such as Germany, Belgium and Switzerland. The emissions of dioxins from Energy from Waste facilities have fallen by 99.8% in the last 20 years. The European Waste Incineration Directive (WID), which became law in 2002, imposed stricter emission levels and increased the monitoring of facilities. An independent study, published by the government department Defra in 2004, found that Energy from Waste facilities are not a major contributor to air pollution. It concluded that there was no consistent or convincing evidence of a link with adverse health effects. This view is shared by the Health Protection Agency in its report *The Impacts on Health of Emissions to Air from Municipal Waste Incinerators*, February 2010.

Incineration creates bottom ash, which can be recycled as building and construction material. The council recognises peoples' concerns regarding the disposal of Air Pollution Control (APC) residues and whilst hazardous waste can be sent to be a regulated site, the council is working with bidders to minimise the production of APC residues.

The Impact on human health and the environment of any waste treatment facility is recognised as a serious issue. GCC has appointed Professor Roy Harrison (one of the

UK's leading experts on air quality) as an independent adviser on the impact on human health and the environment. Professor Harrison has produced a short paper on the health aspects of technologies which is available at www.recycleforGloucestershire.com/real_rubbish

2.7 *Stabilised waste to Landfill*

A number of respondents favoured the landfilling of biostabilised waste. This requires waste to be pre-treated using a technology such as mechanical biological treatment to reduce the biodegradable content of the waste before the waste is landfilled.

GCC does not view landfilling residual waste whether treated or untreated as a sustainable option due to cost and tax implications and would argue that “doing nothing” with the waste loses any embedded energy. Based on a mechanical biological treatment system using aerobic composting, approximately 75% (by tonnage) of waste will remain post treatment and require disposal in a landfill site.

2.8 *Landfill Capacity*

A response from one local landfill operator has questioned the volumes available, suggesting it is currently predicting in excess of 20 years of active landfill operations based on less waste being landfilled year on year.

Landfill capacity is generally considered as a finite resource that will not be available in abundance for years to come. Government policy is that landfill should only be used as a last resort. Fundamentally, GCC and its partners of GWP are moving towards reducing the amount of waste it sends to landfill aiming use landfill as the last resort. It is comforting however that the capacity in Gloucestershire may be larger than expected as this will ultimately reduce any further transport costs and environmental burden if waste that is needed to be landfilled is shipped out of county.

2.9 *Javelin Park*

Some stakeholders felt that the decision to develop an incinerator on Javelin Park as a site was made several years ago and that the GCC has not been transparent about this. GCC have always been clear that Javelin Park was purchased for waste management purposes (Cabinet Report July 2007), but that those waste companies bidding for the contract could present their solutions on other sites if they felt it appropriate. GCC has always been technology neutral as to what will sort of facility

could be situated at Javelin Park. In addition, bidders were free to propose their own sites.

2.10 Commercial waste

Some stakeholders felt that there were clearly environmental and cost benefits achievable if the collections of MSW and C&I waste were combined. Possible benefits could be explored around individual waste streams such as food waste collection. This may encourage the diversion of commercial food wastes from landfill and lead to a more cost effective disposal method which also has clear environmental benefits.

Combining the treatment/disposal of C&I waste with household waste may also see benefits, environmentally and possibly providing better value for money for the tax payer. Allowing the co-treatment of C&I and household waste provides greater flexibility for GCC for promote increased recycling and reduction in overall waste arisings. However, the current procurement is for household residual waste only. It is not our intention to extend the use of any facilities on Javelin Park to deal with Gloucestershire's entire C&I waste.

2.11 Resource Recovery Park

Some stakeholders suggested GCC should invest in a research facility to identify the materials within the residual waste stream and further opportunities to reduce, resue and recycle. GCC undertakes periodic analysis of waste composition by sampling waste from the kerbside and sorting at local waste depots. We therefore have clear information telling us what (and how much of each material) is in the waste stream. This straightforward and effective sampling approach for waste composition analysis is undertaken by waste authorities around the world.

GCC will to explore the opportunity of developing a resource recovery park, and the potential to work with universities/other organisations to establish the feasibility of such a park.

2.12 Flexibility

Some stakeholders felt that flexibility should be considered with greater importance. Flexibility is a key consideration for the management of any waste stream. This has to be balanced against need to provide certainty for service providers to make any investment. Many respondents, as above, viewed long term contracts i.e. 25 years, as inflexible and unable to respond to changing trends and advances in technology. Flexibility to respond to changes in waste volumes, trends and composition was identified by Cabinet as a key criterion for any technology. It is recognised that any technology must be able to adapt to changes in volume and composition, and that

we promote increased levels of recycling and waste prevention in addition to providing a residual waste technology that will recover further value from waste and ensure we can divert as much waste as possible from landfill.

2.13 Contract length

Some stakeholders were concerned about their perception that the council would be locked in to a long term contract. The requirement for this procurement was for a long term sustainable solution. The costs of any capital equipment will need to be recovered over the life of an asset irrespective of the technology. Shorter term contracts increase the cost of any facility and reduce the affordability of the option to the Authority.

2.14 Cost, Value for Money and Affordability

Many respondents felt that there is no need to replace the grant of £92 million as this money was allocated to a project and that other more affordable solutions should be considered.

The viability of the current procurement strategy is currently being tested as part of this strategic review. The loss of the PFI funding is a significant factor and the impact of this loss must be assessed to understand if the project is still financially viable.

Some stakeholders felt that alternative solutions to incineration were cheaper. As part of the outline business case submitted to Defra in 2008, we carried out detailed modelling on all technology options. The results of the financial assessment undertaken in 2007 indicated that although the MBT to landfill option had the lowest capital costs, higher operating costs and requirement to landfill the remaining waste meant this option was the second most expensive. There were significant costs associated with the landfill of high volumes of treated waste incurring landfill tax and gate fee costs, while the plant operating costs are relatively low. No other solutions which were both viable and affordable have come to light in this re-appraisal.

Some stakeholders highlighted the potential benefit from Section 106 agreements. The authority welcomes the idea of section 106 agreements and will explore the possibility of utilising this planning agreement set up with developers to review if any benefits or opportunities can be found.

GCC financial reserves were suggested by some stakeholders as a potential source of funding to support collections and continued landfilling. This one-off funding is not currently available as it is allocated to purchase LATS allowances in future years to reduce our liability. The government is currently considering its position on this fiscal measure and may scrap this scheme. In this event, the Authority would no longer keep the reserve and the funding would be re-allocated centrally.

The Authority is already incentivising our District partners to improve their collection schemes. An incentive payment (on an annual basis) is offered to each District for the implementation of food waste collection schemes based on quality and performance. This is in addition to recycling credits that are paid for the diversion of recyclables.

Further funding opportunities were also suggested by some stakeholders including developing Photo Voltaic (PV) on council land and using the Feed in Tariff (FIT). The concept of developing Photovoltaics on authority owned land is already being explored. The Renewable Energy Scrutiny Task Group is currently investigating this and reviewing the feasibility of using PV on authority buildings and also developing solar farms on authority owned farmland. In addition to this, wind power and biomass are also being explored.

When developing a business case for any waste treatment process, the value of recyclables energy production are taken into account to off set the overall gatefee of the facility.

2.14.1 Prudential Borrowing and sale of Assets

Some stakeholders believed that prudential borrowing and the sale of assets could also support efforts to reduce, reuse and recycle. Prudential borrowing will be considered during the next stage of procurement. Private funding was suggested by some stakeholders. Based on the aspiration for the County to achieve a 70% recycling rate, the Authority will need to explore the best way to deliver treatment facilities to support this. This includes both Material Recycling Facilities and Anaerobic Digestion facilities to enable greater recyclables and food wastes to be recycled. As part of this the local energy/heat demand will be a consideration as will the value of recyclables and energy produced by such processes.

2.14.2 Availability of financial information

Some stakeholders felt that GCC was withholding financial information unnecessarily. GCC has commercially confidential cost information which is part of the current procurement process. The authority cannot release such information at present. The authority has however made the Outline Business Case for the residual waste project publically available which includes financial information relating to the cost of the project.

3 Conclusion and recommendations

- 3.1 Formal consultation was not a requirement of the strategic re-appraisal; however the stakeholder engagement conducted provided an opportunity for interest groups and individuals to contribute. Responses were received from most interest groups known to the authority.
- 3.2 Based on the responses, officers have taken forward the following themes for further investigation:
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