

# **STATES OF JERSEY**



## **ENERGY FROM WASTE FACILITY: ESTABLISHMENT AND ACCEPTANCE OF TENDER (P.72/2008) – COMMENTS**

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**Presented to the States on 8th July 2008  
by the Environment Scrutiny Panel**

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**STATES GREFFE**

## COMMENTS

### Introduction

*“Moving to the “next cheapest” solution for managing waste is not acceptable. This merely puts off the important decisions and does little to reduce greenhouse gas emissions. It is imperative that material resources are recovered for use in other products where possible.*

*Where this is not possible for either technical or economic reasons, the energy should be recovered. Only smaller scale facilities for energy recovery should be supported. All facilities will be subjected to a carbon assessment that considers the inputs and outputs (i.e. collection logistics as well as process outputs).*

*Incineration should always be subject to the following tests:*

- *It must not crowd out waste prevention or recycling, so capacity must be made available only for non-recyclable materials;*
- *There must be efficient energy recovery of at least 65% and preferably 70% using the EU’s proposed efficiency threshold calculations.”*

So wrote Rt. Hon. John Gummer, MP in the “Blueprint for a Green Economy” produced by the Quality of Life Policy Group for the UK Conservative Party in September 2007.

### Recycling targets

A number of UK authorities have already endorsed the first bullet point, and the Labour government has set recycling targets of 40% by 2010 and 50% by 2020. The Minister for Transport and Technical Services (TTS) maintains that his recycling target of 36% by 2018 is ambitious, whilst Surrey County Council is proposing 60% by 2025. Even our sister Island of Guernsey is pledged to achieve 50% by 2010 which shows that there is no specific bar to recycling in an Island community.

The size of the proposed incinerator will do nothing to encourage waste minimisation. Like some giant hungry cuckoo maw, it will demand feeding at up to 15 tonnes per hour and crowd out recycling initiatives.

### Efficiency

Last month, the EU formally accepted the proposed efficiency calculations quoted by John Gummer, and plants commissioned after 1st January 2009 will need to meet a 65% energy efficiency rating to be classified as “recovery”.

*The 2005 waste strategy explained that “once the preferred options of minimisation, recycling, and composting have been exhausted, any remaining value should be **recovered** from the residual waste as energy for heating purposes or to generate electricity. This is considered to be better in the Waste Hierarchy than disposal...”*

The incinerator proposed by TTS will have an energy efficiency of approximately 24%. Under the new rules, it will be classed as a disposal route, the least favourable option within the Waste Hierarchy. The proposed incinerator will not be considered as an Energy from Waste plant, it will be a “**Waste of Energy**” plant.

Agreeing to the incinerator will show the world that, in spite of our affluence, our idea of “Keeping Jersey Special” is to put ourselves at the bottom of the environmental league table, rather than near the top, in waste management terms.

Incineration can be made more energy efficient by using the heat generated in a district heating system. TTS have not included such a system in their proposal and the necessary infrastructure would add substantially to the cost. There would also be a consequential reduction in the electricity generation and the revenue potential would need

to be reassessed.

The recycling of materials also saves energy. Much less energy is used in the creation of paper, metal, glass and plastic products that have been recycled, compared to making these products from raw materials.

### **Capacity**

The capacity of the plant is being quoted at 105,000 tonnes per annum although the plant consists of two 7.5 tonne per hour streams which have the potential to process up to 131,400 tonnes per year. Most modern plant would require as little as 3 weeks per year maintenance in the first half of their working life. TTS have allowed 10.5 weeks per stream per year downtime for planned and unplanned maintenance. 2024 will be the first year when there is enough rubbish (based on TTS predictions) to run both streams efficiently. Until then there will always be spare capacity in one stream to provide for maintenance of the other one. The system is oversized.

### **Carbon emissions**

By choosing to burn the majority of our waste, we will continue to contribute to the production of carbon dioxide. Burning 105,000 tonnes, as proposed by TTS, will produce about 100,000 tonnes of carbon dioxide. Putting this in context, all the vehicles in Jersey produced 120,000 tonnes of carbon dioxide in 2005. There is a strategic aim to reduce carbon emissions into the future for Jersey to play its part in global Climate Change commitments. Increasing emissions through incineration will require reductions to be made elsewhere.

It is true that much of the rubbish is considered to be a renewable resource, as it comes from trees and plants (paper and food) that have grown in the recent past. Even when this is taken into account, producing electricity through an incinerator still creates more carbon dioxide than a gas-fired power station. As electricity which is currently purchased from France is based on nuclear power, replacing French electricity with locally produced electricity will increase our carbon dioxide emissions.

### **Recycling costs**

In the briefing pack to States members, TTS wrote that *“the average cost for kerbside collection was found to be over £200 per tonne, but co-mingled systems using Materials Recycling Facilities averaged over £570 per tonne and some of the collections were much higher – up to £1000 per tonne in one case”*. The implication of these figures is that co-mingled collections to be recycled in an MRF would be prohibitively expensive. What TTS failed to mention in presenting these figures out of context is that the figures came with a serious health warning.

*“It should be noted here that the data used in this study provides a picture of the performance of local authorities from April 2005 to March 2006. In addition, this is the first occasion that local authorities in Wales have been requested to provide their income and expenditure figures for kerbside collection services to the Welsh Assembly Government. As a result, some authorities encountered difficulties in separating out certain costs, for example the labour cost of garden waste and recycling collections and disposal of residual waste from materials sorting facilities. In some cases these inaccuracies have had a skewing effect on the data and RPS has therefore presented the mean and median and range of each set of costs.”*

The actual range of costs for kerbside collections ranged from £36 a tonne to £1,039 per tonne. This enormous range suggests that the data collection is extremely suspect and no sensible conclusions can be drawn.

A much more reliable report was recently produced by WRAP in 2008. This report set out the comparative costs of the number of kerbside collection methods with the sale proceeds of recyclable materials being used to offset the collection charges. For example, the gross collection costs for source separated materials are in the range £79 – £154, but when the sale of the recyclables is deducted the net cost ranges from £25 – £97 per tonne. The lower rate is for urban areas and the higher rate for rural areas. For Jersey the total cost of recycling should include shipping costs for exported items. At £27 per tonne this gives a total cost of £52 – £124.

This needs to be compared with the cost of black bag collection, £27 – £82 (Parish figures) and an incineration cost of £85 (TTS) giving a total cost of disposal of £112 – £167 per tonne. The £85 is perhaps underestimated,

since the TTS cost schedule shows an annual cost of £10.277 million for 105,000 tonnes, i.e. approximately £98/tonne. This would suggest a higher cost of disposal of £125 – £180 per tonne. These figures show that recycling is an economic alternative to incineration.

### **Material recycling facilities**

The TTS Department briefing note sets out several perceived disadvantages with a large materials recycling facility. The Environment Scrutiny Panel has not put forward a particular style of collection, but has stated that a source segregated collection of dry recycling and kitchen waste would be of great benefit in increasing recycling rates. The particular method chosen will need to be optimised to Jersey conditions to encourage the maximum participation of householders. This is in line with the approved Waste Strategy.

The TTS briefing note states: *“It is likely that some form of mechanical sorting facility will be required for Jersey as recycling rates increase.”* Indeed this is in line with the States decision made in 2005 to request TTS, *“to provide a recycling centre for the reception and recycling of paper, aluminium, glass, plastic and other materials before the end of 2006”*. The Waste Strategy explains that this facility will include an *“integrated bulking and baling facility to manage source-segregated materials to be exported for recycling”*. Although promised for December 2006, it now appears that such a permanent facility will not be able to be built until 2011, and it is not now known where such a facility will be situated as La Collette is out of bounds to large numbers of the public on Buncefield hazardous zoning grounds. It is certain that the provision of such a facility would enable the Island’s recycling rate to significantly increase but maybe that is the reason for the TTS lukewarm approach.

### **Composting and anaerobic digestion**

The Composting Association has been liaising with key stakeholders regarding the sustainable use of compost in agriculture in conjunction with WRAP and it met with the British Retail Consortium in 2007. The BRC produced a statement on the safe use of compost on agricultural land including the passage on the use of Kitchen and Catering wastes quoted by TTS in their briefing pack.

The BRC was severely criticised by the Composting Association for publishing inaccurate statements that had the potential to mislead. In particular the BRC assumption that BSE prions could be present in composting feedstocks failed to acknowledge the Animal By Product Regulations which had been developed by veterinary experts in Europe and that BSE infected material is not allowed to be incorporated in a composting process.

TTS in including this out of context quote paint an erroneous picture of kitchen waste composting. The Environment Scrutiny Panel has never suggested that abattoir waste should be composted.

A new protocol on source segregated biowaste which includes kitchen waste is being developed by the UK government to process this material to ABPR standards in anaerobic digestion plants. This will allow the food waste to be used to generate biogas and other fuels as well as a digestate to be used as a fertiliser and soil improver in agriculture, soil grown horticulture, forestry and land restoration.

TTS acknowledge the BSI PAS 110 standard and agree that anaerobic digestion is an acceptable way of dealing with food waste as evidenced in the widespread plants and practices in Europe. However, they still harbour reservations over the desirability of operating such equipment in Jersey due to their unfounded assumption that there is insufficient land available on which to spread the digestate. This is surprising since their own report states as part of its conclusion that: *“from the above it can be seen that there is potentially sufficient land to apply all of the ABPR compliant composted kitchen waste arising on the island, but crucially, it can also be seen that there is no guaranteed land available for the disposal of any bio-solid wastes in Jersey”*.

The new protocol specifically generates a useful product rather than a waste to be disposed of, and major supermarkets are supporting the UK government in encouraging the use of AD and compost products on agricultural land.

TTS have included a small AD plant as one of the “alternatives” but have only included half of the available food waste and without enhanced recycling. The Environment Scrutiny Panel considers that a full-sized AD combined

with enhanced recycling would allow a much smaller capacity end treatment plant to be procured. This alternative can be achieved at a considerable cost saving to the one proposed by TTS.

### **Cost comparison**

The cost comparison produced by TTS offers scenarios that the Environment Scrutiny Panel would not have suggested. The Panel were not approached. Consequently although the department appear, through its consultant, to have done some work at a late stage, it is of limited use because none of the scenarios relate to a high recycling/low disposal option. During the 2005 waste strategy debate, the then President of Environment and Public Services made a commitment to return to the States with a high throughput/low recycling option and a low throughput/high recycling option. This commitment has been interpreted as an 80,000 tonne mass burn incinerator to which the TTS Department added a 25,000 tonne third stream to get back to the 105,000 tonne propose solution. This is inevitably an expensive route to follow if the third stream were required. The option has not been analysed in the same way as the other scenarios and members will be unable to compare an 80,000 tonne machine without the extension or the low throughput/high recycling option as promised. No analysis has been undertaken to assess the robustness of the options, either in relation to the changing regulatory frameworks or their comparative environmental impacts or of changing social habits within the next 25 years. If the public desire and willingness to recycle and act responsibly towards the environment continues to grow, TTS might well find itself with an oversize incinerator but with little to burn.

### **Ramsar**

One of the planning considerations that the Hazard Review Group had to address was the limited access to the La Collette site in the event of an emergency at the Fuel Farm. It comes as no surprise that TTS are proposing a new emergency access route. However, in suggesting a new road from the Green Street slip, it is clear that further land reclamation might need to take place across a Ramsar site. No mention has been made in relation to these costs to be funded by TTS.

The cooling water discharged from the incinerator will damage the marine environment. It will be hotter than the surrounding water and will be contaminated with chemicals added to reduce corrosion in the plant. The discharge will be into a Ramsar site, which requires a high level of environmental protection.