

STATES OF JERSEY



ENERGY FROM WASTE FACILITY: RESCINDMENT (P.8/2009) – SECOND ADDENDUM

Presented to the States on 23rd February 2009
by the Deputy of St. Mary

STATES GREFFE

SECOND ADDENDUM

The attached spreadsheet will give members a view of a possible alternative which deals with the Island's waste in the proper way, and an outline of the costs involved.

Total Waste have set out 3 suites of technologies and buildings to house them to deal with Jersey's waste stream. May I suggest that Project B is the nearest to Jersey's actual requirements. Project C should only be used more as a menu of further possibilities.

Members should note that the incinerator mode of thinking views waste as something to be disposed of, to be burnt. Of course it does not disappear; matter cannot be created nor destroyed. It turns into flue gasses and toxic fly ash and bottom ash, all of which in turn have to be carefully dealt with. Hence the very real and justified fears of the public.

Whereas the approach being presented here is fundamentally different and fundamentally better. Waste is viewed as a collection of resources, and Jersey is quite right to be proceeding down the road of waste separation at the point of collection in order to realise as much as possible of the value of those resources, and has already been successful in this as recent press reports show.

The aim is to have as little residual waste as possible and to re-use and recycle as much as possible provided there are real benefits to be gained both environmental and economic. The cost of carbon emissions to society in general and life on this planet has to be included of course in this equation and the British government now does so as policy. The current price of carbon used by them to evaluate policy alternatives is £25/t CO₂e (£25 per tonne of CO₂ equivalent).

It is now known that recycling is better for carbon emissions than incineration. WRAP, the Waste Resources and Action Programme, which is a government-funded body set up to promote and research good practise in the waste management sector, commissioned a major review of Life Cycle Analysis research from all over Europe, which was published in September 2006. The conclusion of the 253 page report was –

“The results are clear. Across the board, most studies show that recycling offers more environmental benefits and lower environmental impacts than other waste management options. Further analysis by WRAP of the research findings has provided an assessment of the relative greenhouse gas savings associated with current UK levels of recycling for paper/cardboard, glass, plastics, aluminium and steel. Again, the results are clear and positive. The UK's current recycling of those materials saves between 10-15 million tonnes of CO₂ equivalents per year compared to applying the current mix of landfill and incineration with energy recovery to the same materials.

This is equivalent to about 10% of the annual CO₂ emissions from the transport sector, and equates to taking 3.5 million cars off UK roads.”

A recent Report for the Welsh Assembly Government by the Environment Agency in Wales, entitled: “Life Cycle Analysis of Municipal Recycling Targets for Wales” confirmed the finding with original research of its own – high levels of recycling save carbon emissions.

The financial figures in the spreadsheet are done in a layman's way, and allow some comparisons to be made. I am working all the time to bring members improved information and hope to advance this before the debate, including information on the likely costs of the concrete apron.

Sending this spreadsheet to members now is being done to give members time to absorb the feel of this new way of looking at things. The work on it continues, and I may need to update members.

Here are the e-addresses for the different pieces of technology and the main shed:

<http://www.prmenergy.com/?gclid=CKXbnpLr0ZgCFVCS3wodMW7v1Q>
<http://www.prmenergy.com/?gclid=CKXbnpLr0ZgCFVCS3wodMW7v1Q>

<http://www.cofamm.it/G-Index.html>

<http://www.cofamm.it/Sorting%20Machinery.html>

<http://www.collinson.co.uk/buildings.asp?id=158>

<http://www.haase-energietechnik.de/en/Home/>

http://www.haase-energietechnik.de/en/Products_and_Services/Energy_Systems/

http://www.haase-energietechnik.de/en/Products_and_Services/Waste_Treatment/Haase_Biostabilator/

Outline Proposals for Jersey's Solid Waste Solution

Area M₂ Staff

Please consult Reading Notes Page.

Section 1. Design, Build, Install, Commission and Staff Training

Note No account has been made for site preparation, foundations, connections road laying etc. All figures subject to the outcome of waste survey.

Project A Area requirements and Capital costs should be considered maximums. Final figures would be available on completion of waste survey.

| | | |
|--|--------|----|
| 1 Materials Recycling Facility (MRF). COFAAM 15 T/hr | 10 200 | 16 |
| 2 Pyrolysis Combined Heat & Power (CHP) Plant 2.5MW. PRM Energy Systems | 5000 | 2 |
| 3 Plastics Recycling System. 500 kg/hr Crushing & Washing. 300 kg/hr Pelletting. | 500 | 6 |
| 4 WEEE Recycling System 1000 kg/hr Eriz Turnkey Plant | 1000 | 4 |
| 5 Building for MRF, Waste Reception and Storage. Collinson Best Halls | 12000 | |
| 6 Building for WEEE Plant, Plastics System, Metals Section, Packing. | 2000 | |
| 7 Building for Pyrolysis System, Feedstock Storage and Preparation. | 2000 | |
| 8 Yard Space | 2000 | |

Please consult System Notes Page

| | | | | | |
|-----------|--------|-------|-----|-------|----|
| Project A | Totals | Acres | 4.4 | 18000 | 28 |
|-----------|--------|-------|-----|-------|----|

Project B

- 1 Materials Recycling Facility (MRF). COFAAM 15 T/hr
- 2 Pyrolysis Combined Heat & Power (CHP) Plant 2.5MW. PRM Energy Systems
- 3 Plastics Recycling System. 500 kg/hr Crushing & Washing. 300 kg/hr Pelletting.
- 4 WEEE Recycling System 1000 kg/hr Eriz Turnkey Plant
- 5 Building for MRF, Waste Reception and Storage. Collinson Best Halls
- 6 Building for WEEE Plant, Plastics System, Metals Section, Packing.
- 7 Building for Pyrolysis System, Feedstock Storage and Preparation.
- 8 Yard Space
- 10 Anaerobic Digestion (AD) CHP System 1 MW Haase 17 000 Tpa
- 11 Tyre Recycling System 500 kg/hr Hawkiwel
- 12 Commercial Waste MRF

| | | | | | |
|-----------|--------|-------|-----|-------|----|
| Project B | Totals | Acres | 5.2 | 21000 | 37 |
|-----------|--------|-------|-----|-------|----|

Project C

| | | | | |
|----|--|-------|-----|----|
| 1 | Materials Recycling Facility (MRF). COFAAM 15 T/hr | 10 | 200 | 16 |
| 2 | Pyrolysis Combined Heat & Power (CHP) Plant 2.5MW. PRM Energy Systems | 5000 | | 2 |
| 3 | Plastics Recycling System. 500 kg/hr Crushing & Washing. 300 kg/hr Pelletting. | 500 | | 6 |
| 4 | WEEE Recycling System 1000 kg/hr Eriz Turnkey Plant | 1000 | | 4 |
| 5 | Building for MRF, Waste Reception and Storage. Collinson Best Halls | 12000 | | |
| 6 | Building for WEEE Plant, Plastics System, Metals Section, Packing. | 2000 | | |
| 7 | Building for Pyrolysis System, Feedstock Storage and Preparation. | 2000 | | |
| 8 | Yard Space | 3000 | | |
| 9 | Gasification CHP System 2MW Green Forze | | | |
| 10 | Anaerobic Digestion (AD) CHP System 1 MW Haase 17 000 Tpa | 1000 | | 1 |
| 11 | Tyre Recycling System 500 kg/hr Hawkiwel | 500 | | 4 |
| 12 | Wood Recycling System. 3500 kg/hr total. Produces extruded bio mass log for domestic heating | 0 | | 0 |
| 13 | Waste Motor oil Recycling System. Oil Filter Recycling. Bio Fuels System | 500 | | 2 |
| 14 | Commercial Waste MRF | 1000 | | 4 |
| 15 | Gypsum Board Recycling System. | 100 | | 1 |
| 16 | Infrastructure for Kerbside collection of Food Waste, Sanitary Waste and other materials if required | 100 | | 4 |

Acres

| | | | | |
|------------------|---------------|------------|--------------|-----------|
| Project C | Totals | 5.3 | 21500 | 44 |
|------------------|---------------|------------|--------------|-----------|

Section 2. As section 1, Plus Staffing and Running the facility for 25 years at zero gate charge.

Project A

Capital Cost
£26,400,000

Project B

£28,600,000

Project C

£29,800,000

Section 3 As section 1, Plus Funding the facility, running at £80 (MSW)/£12(Green) tonne gate charge. States have 10% equity holding. This section assumes all non inert waste, including food and green waste is available to us.

| | Deposit | Refund y 2 | Refund y 3 | Refund y 4 | Refund y 5 | Equ Ret pa | Ints Rate | Note |
|------------------|-------------|------------|------------|------------|------------|------------|-----------|----------------------------|
| Project A | £26,400,000 | £5,000,000 | £5,000,000 | £5,000,000 | £5,000,000 | £400,000 | 6% | Capital Cost £7,920,000 |
| Project B | £28,600,000 | £5,000,000 | £5,000,000 | £5,000,000 | £5,000,000 | £450,000 | 6% | £8,580,000 |
| Project C | £29,800,000 | £5,500,000 | £5,500,000 | £5,500,000 | £5,500,000 | £600,000 | 6% | £8,940,000 |

Note Assumes the interest earned on E77, E79, E81 on deposit over 5 years. Interest percentage is adjustable in K77, K79, K81. Plus t

Project A would deal with the following waste streams
Green Waste, Food Waste, Sewage Plant Solids, Parish Refuse, WEEE and Plastics.

Project B would deal with the above plus.
Commercial Solid Waste and Tyres

Project C would deal with A and B plus.
Wood (Including solid fuel production), Oil, Oil Filters, Veg Oil, Manure, Liquid Waste and Gypsum Board,
Kerbside collection of Food and Green Waste and the necessary infrastructure to add more fractions if required.

Deliver Mth Cost £

| | | |
|----|---|---------------|
| 12 | £ | 4,500,000.00 |
| 14 | £ | 14,000,000.00 |
| 4 | £ | 800,000.00 |
| 12 | £ | 1,600,000.00 |
| 12 | £ | 3,500,000.00 |
| 12 | £ | 1,000,000.00 |
| 12 | £ | 1,000,000.00 |

| | | |
|----|---|---------------|
| 14 | £ | 26,400,000.00 |
|----|---|---------------|

| | | |
|----|---|---------------|
| 12 | £ | 4,500,000.00 |
| 14 | £ | 14,000,000.00 |
| 4 | £ | 800,000.00 |
| 12 | £ | 1,600,000.00 |
| 12 | £ | 3,500,000.00 |
| 12 | £ | 1,000,000.00 |
| | £ | 1,000,000.00 |
| 15 | £ | 1,500,000.00 |
| 12 | £ | 100,000.00 |
| 12 | £ | 600,000.00 |

| | | |
|----|---|---------------|
| 15 | £ | 26,600,000.00 |
|----|---|---------------|

| | | |
|----|---|---------------|
| 12 | £ | 4,500,000.00 |
| 14 | £ | 14,000,000.00 |
| 4 | £ | 800,000.00 |
| 12 | £ | 1,600,000.00 |
| 12 | £ | 3,500,000.00 |
| 12 | £ | 1,000,000.00 |
| | £ | 1,000,000.00 |

| | | |
|----|---|--------------|
| 15 | £ | 1,500,000.00 |
| 12 | £ | 100,000.00 |
| 12 | | |
| 12 | £ | 400,000.00 |
| 12 | £ | 600,000.00 |
| 12 | £ | 200,000.00 |
| 6 | £ | 600,000.00 |

| | | |
|----|---|---------------|
| 15 | £ | 29,800,000.00 |
|----|---|---------------|

Note

Total 25 y cost

Running Cost £ 25 y

| | | |
|---|------------|--------------|
| £ | 75,000,000 | £101,400,000 |
|---|------------|--------------|

| | |
|-------------|--------------|
| £75,000,000 | £103,600,000 |
|-------------|--------------|

| | |
|-------------|--------------|
| £85,000,000 | £114,800,000 |
|-------------|--------------|

Note

Running Cost 25y
£25,000,000



£20,000,000



£1,000,000



Note

These are the cost involved in dealing with wastes not catered for by the chosen system. Insert the expected costs in N77,N79,N81.
the difference between the deposit and the refund.