

# ***Community R4C***

***Resource Recovery Recycling and Refining Centre***

***(community benefit plant)***



***A Peoples Project : Harnessing waste as our resource***

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# Community | Resource Recovery, Recycling and Refining Centre

Transition Gloucester November 2015



[www.communityr4c.com](http://www.communityr4c.com)

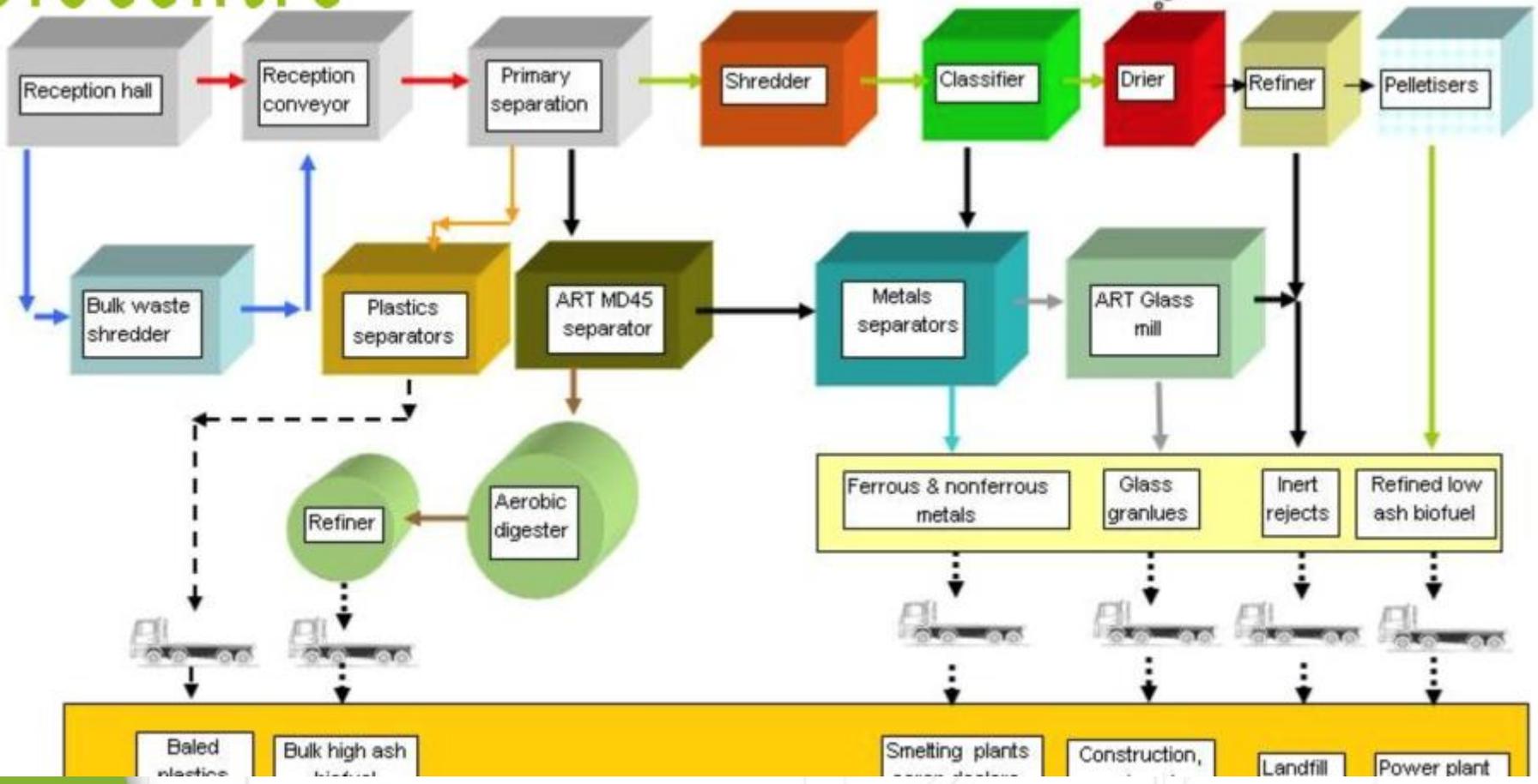
# *Introducing Community R4C*

Community R4C is the community benefit company behind the Resource Recovery, Recycling and Refining Centre to be built in Gloucestershire. Resources will be recovered from Gloucestershire's mixed waste black bin bags, leaving no more than 8% to be sent for disposal by the county.

The Mechanical Biological Heat Treatment (MBHT) process the centre employs offers huge technical, environmental and economic advantages over incineration.

# Mechanical Biological Heat Treatment (MBHT)

BIOCHEMICAL



# *Recycling Comparison*

## *MBHT*

- Plastics and metals are recovered and sold to industry as high-grade raw materials, stimulating the local economy in the process.

## *Incineration*

- No recycling of plastics and very limited recycling of metals takes place. Most are destroyed and their value lost to the community.

# *Energy Comparison*

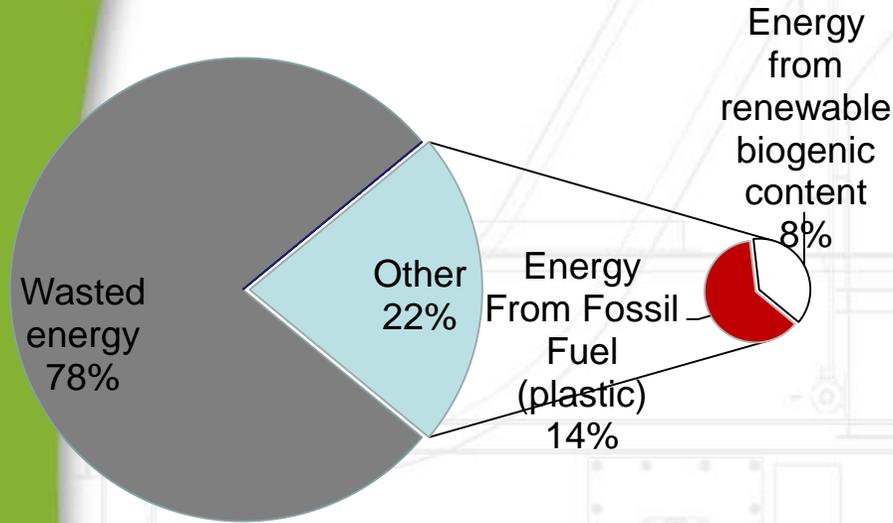
## *MBHT*

- 22 MW<sup>[2]</sup> typical electrical power output, from the combustion of clean biofuel, and another 25 MW<sup>[2]</sup> of useful heat output.

## *Incineration*

- 14.5 MW<sup>[2]</sup> electrical power output. A large proportion of the electricity generation is as a result of burning plastics. Much of this energy is wasted in drying vegetable matter.

**Poor quality incineration produces just 22% power efficiency from the material burnt.**

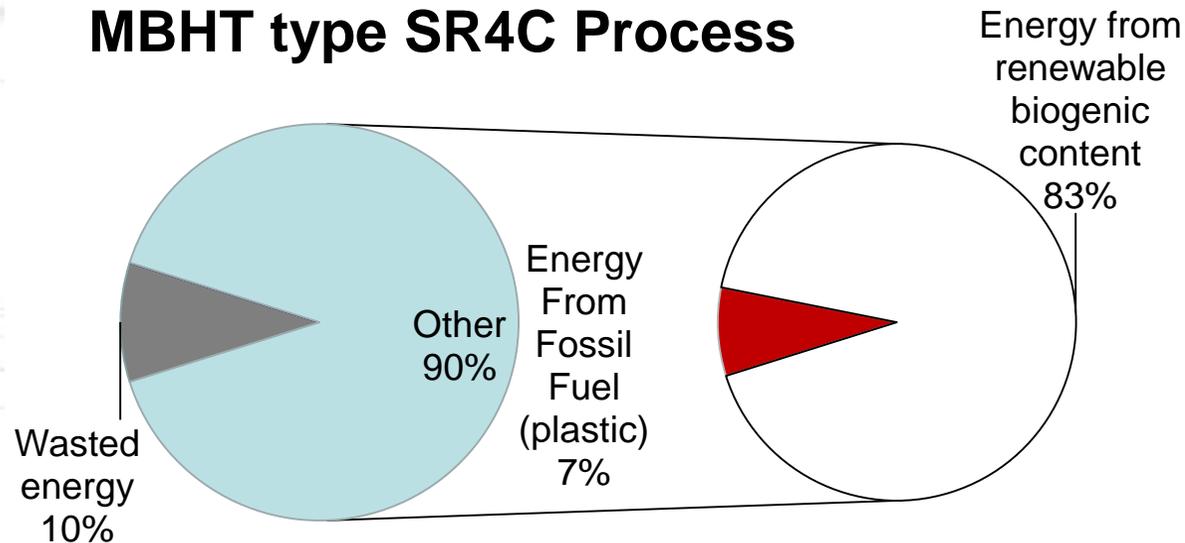


***Of the 14.5MW of electricity from the planned incinerator just 5.5MW is renewable. This is because the biogenic content (food, card etc) is wet and this requires energy to burn off***

See detailed report summarised below, or on request

***Using an MBHT type process and using the fuel at a user of heat and power (eg Dairy Crest, Slough Heat and Power) 83% of the available biogenic (renewable) power will be used. 19MW***

### **MBHT type SR4C Process**



# ***Carbon Emissions Comparison***

## ***MBHT***

- Reduces the amount of CO<sub>2</sub> in the atmosphere by 106,000 tonnes per year<sup>[4]</sup>, reducing the harmful effects of climate change.

## ***Incineration***

- Increases the amount of CO<sub>2</sub> in the atmosphere by 26,000 tonnes per year<sup>[6]</sup>, increasing the harmful effects of climate change.

# *Construction Comparison*

## *MBHT*

- Building costs of £15 million with an 18 month construction period.
- Buildings less than 15 m in height with no gases or particles released into the air.

## *Incineration*

- Estimated building costs of £150 million with a 3 year construction period.
- Buildings 48 m in height with a 70 m chimney stack, required to disperse gases and particles into the air.

# *Running Cost Comparison*

## *MBHT*

- A gate price of £20 per tonne to district councils
- An annual cost of £10 M to the county
- Saving the county £10 M per year
- Saving the county £300 M over the lifetime of the project

## *Incineration*

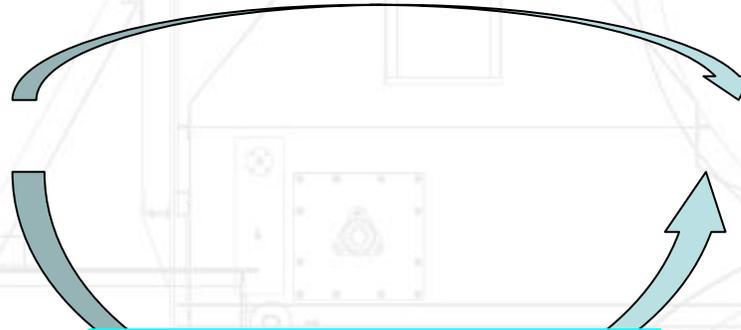
- A gate price of £100 per tonne to district councils
- An annual cost of £20 M to the county

# A Sustainability Vision For Our Waste



**Mixed, Unsorted Waste is NOT Residual Waste**

**CR4C – Fully Automatic**  
47% to refined recyclates  
47% to refined biomass fuel



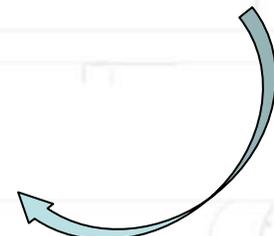
**Recyclates: c 50% source segregated + 23% auto-sorted at CR4C**



**Manufactured high grade biomass fuel. Replaces virgin and fossil fuel**



**Low Cost Resources Stimulate Local Economy**



# *What's Been Achieved Already?*

- Community R4C is the community benefit company
- Support from Glosvain, Green Party, 38 Degrees
- Independent report from SLR – how it can be done and funded
- Free community operating licence for top performing MBHT process from Biocentre
- Partner discussions in progress – local businesses involved in waste, recycling, property, renewables investment

# *What Next?*

## Community R4C CIC

- Principles and community return
- Public Engagement
- Political engagement
- Public pressure – people power, bin power

## R4C Ltd

- Business plan
- Secure property
- Lead waste contracts
- District Council buy in – including resource cycle
- Launch Funding (November)
- Offtake partners, fuel and recyclates

## *Community R4C*

### *How it works for the community:*

- Will stop the incinerator by undermining the financial case and providing a real alternative
- Long lasting planet and local environmental benefits
- 130,000 tpa of waste-to-resource capacity available for just £20 per tonne – 80% saving to the County, more than £10M per year to spend on other services
- High quality low cost fuel – with great CO<sub>2</sub> footprint – available to support local business, eg Dairy Crest (note Muller merger). Fuel is available for £0 pt if we want, equivalent from wood costs £200 pt
- All able to invest at 6% pa
- 25% of all profits back to CR4C for local projects
- Fuel and recyclates available to the community
- Recycling up to >70% without extra effort or collection

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