

APSE Conference 16th July 2009

Waste to Energy Schemes; Are they Deliverable?

CLLr Neil Swannick
Chair of Greater Manchester
Waste Disposal Authority

GMWDA

9 Collection Authorities

2.2m Population



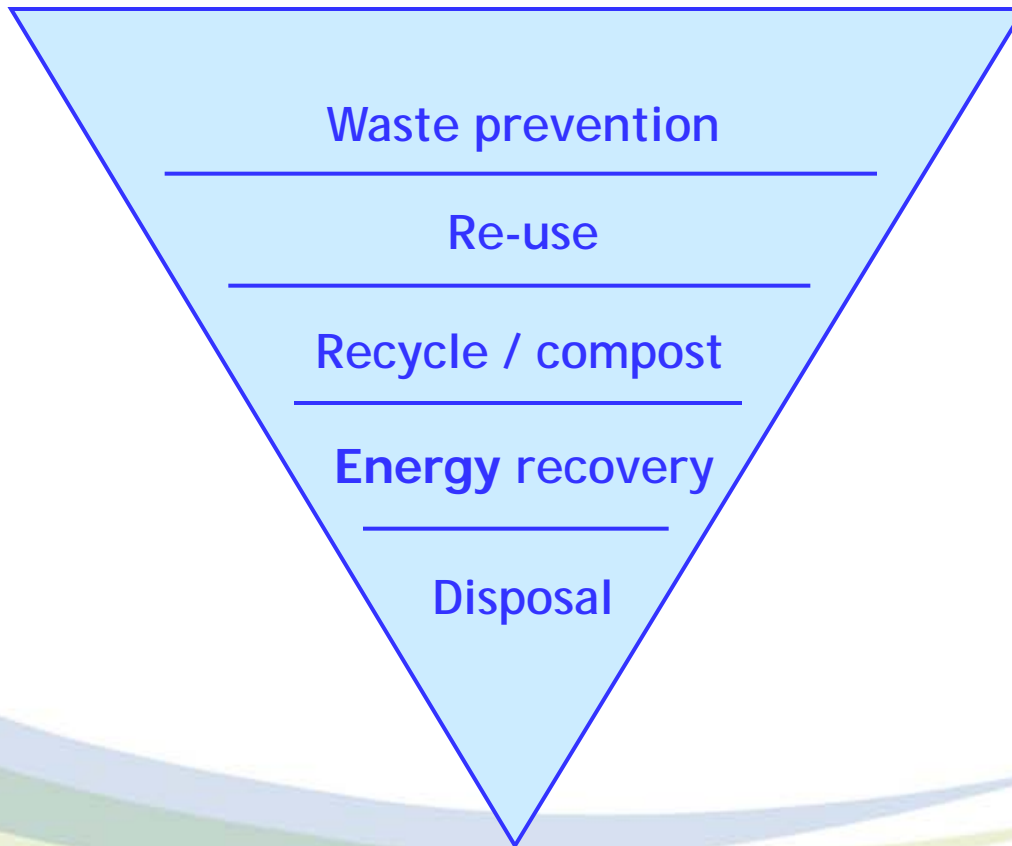
958k Households

1.4m Tonnes Waste per
(5% of the UK's
municipal waste)

 **recycle**
for Greater Manchester


GMWDA

Waste Hierarchy



Finding The Right Balance

Value / Cost / Carbon emissions

Resource recovery

Metals

Glass

Paper

Plastics

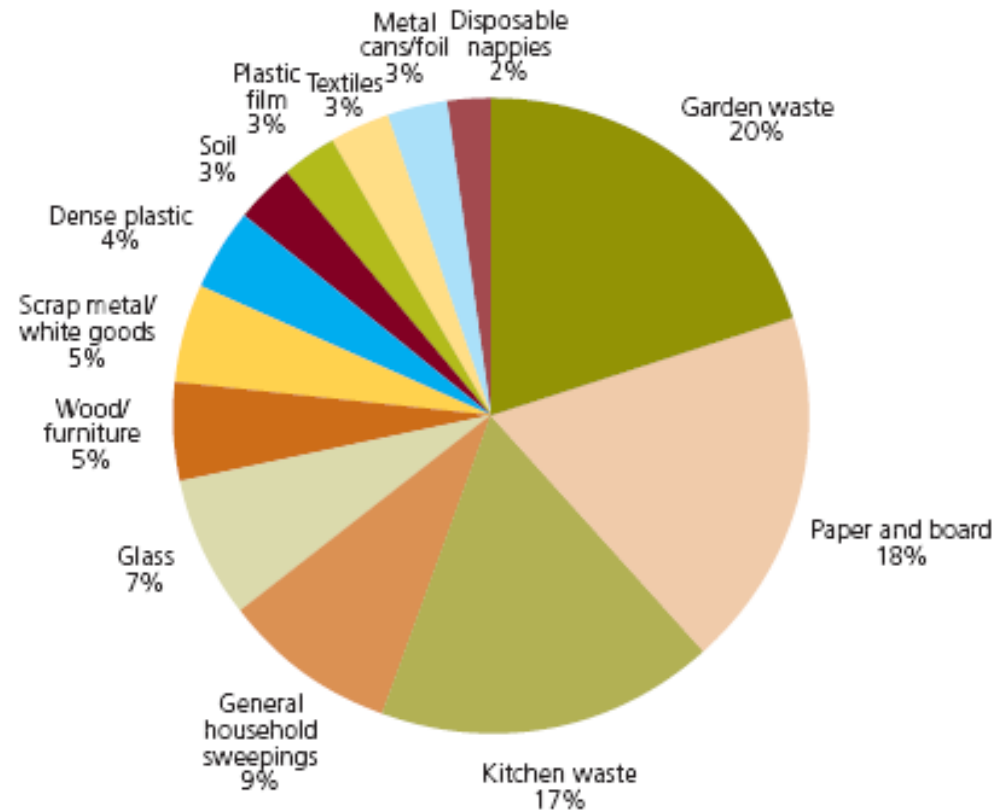
Energy recovery

Electricity

Steam

Municipal Waste

Chart 5.1: Household waste composition, England (2000/01)

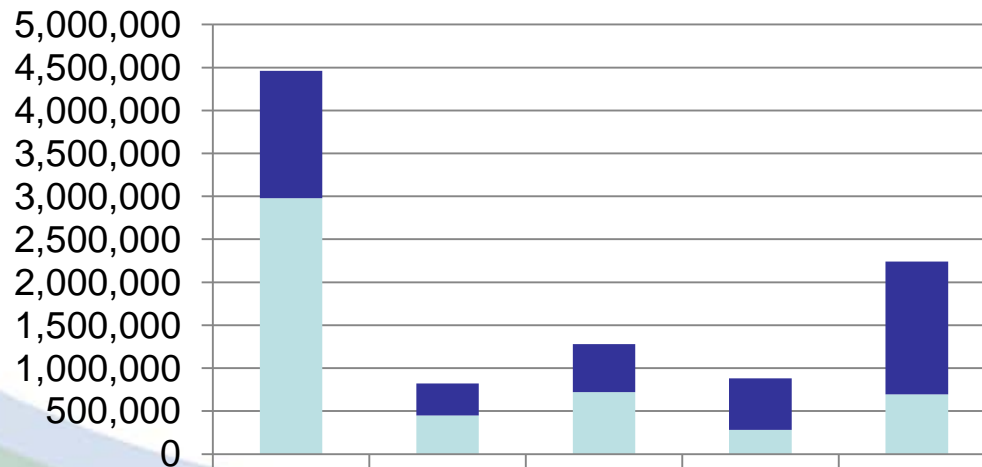


Source: Dr Julian Parfitt, WRAP

The CO2 Case To Recycle More

Actual and potential CO2 equivalent savings from recycling (CO2eq tonnes)

■ Carbon Saved in 2007
■ Potential Carbon Savings



Source DEFRA

Paper

Glass

Aluminium

Steel

Plastic

Municipal Waste Management Strategy

- Agreed by GMWDA and all 9 WCAs 2003
- Objectives:
 - To meet LATS allowances for BMW
 - 33% recycling/composting by 2010
 - 50% recycling/composting by 2020
 - Reduce growth in waste arising to 1% by 2010 and 0% by 2020
- To develop partnership working between the WDA and WCA's

The Greater Manchester 4 Stream Model

1. Paper and card - pulpables
2. Plastic bottles, glass containers and cans - MRF separation
3. Green and food waste - INV
4. Residual Waste - pre treatment through MBT (AD) and then thermal treatment to recover energy

Anticipated Tonnage (x 1,000) Including Growth

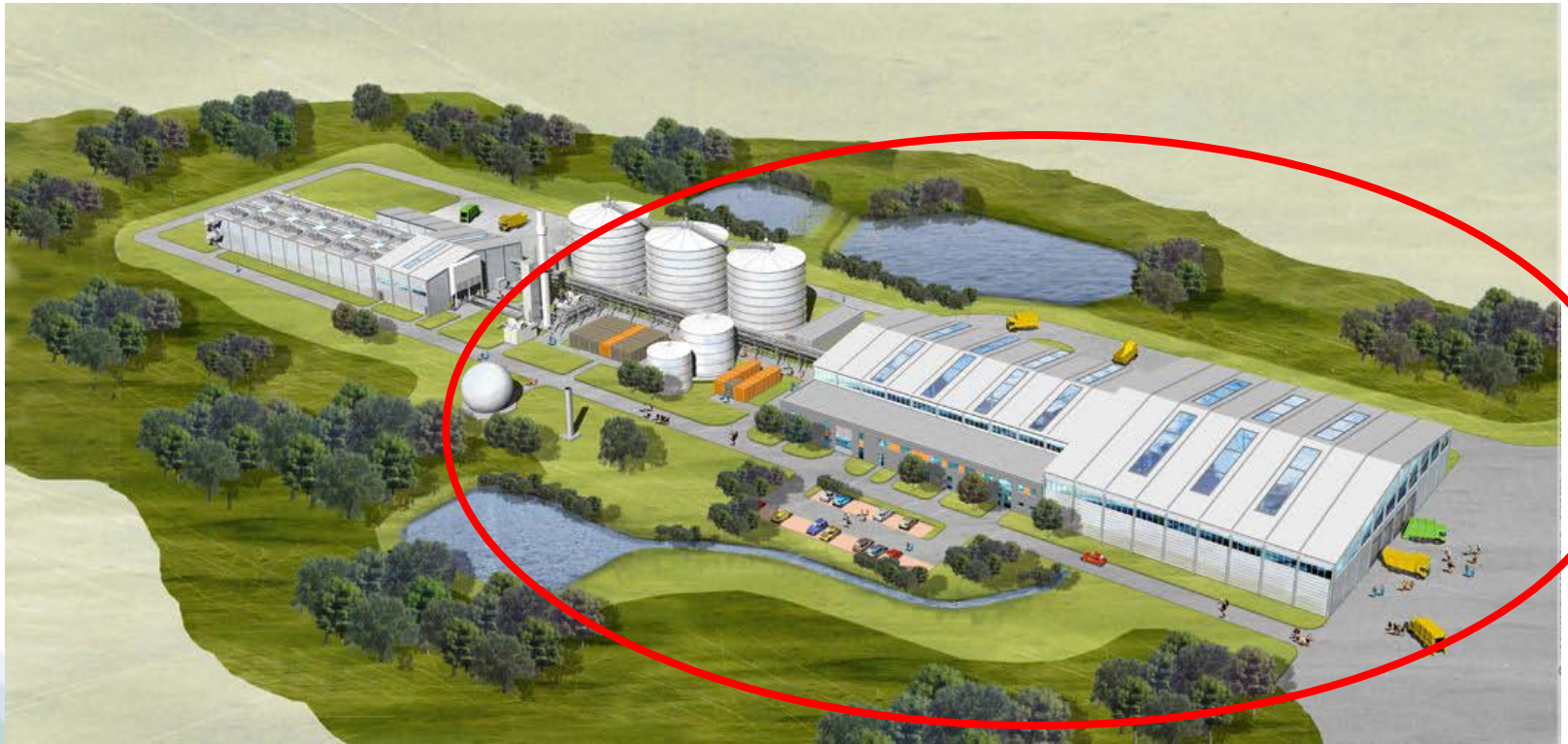
	2008/09 unverified	2009/10	2012/13	2019/20
Gross Arisings	1185	1337	1370	1399
Recycling & Composting	421	641	683	722
Bolton incinerator	110	110	110	110
Runcorn -RDF	Nil	Nil	270	270
Landfill	708	710	414	274

In Vessel Composting (IVC) For Food And Green Waste

- Natural process
- Compliant with ABP order
- Compost produce high quality - horticultural uses



Residual Waste - Mechanical Biological Treatment/ Anaerobic Digestion



Treatment of residual waste into 2 output streams:

- Organic rich to Anaerobic Digestion > Methane > green electricity
- Refuse Derived Fuel to Runcorn CHP > steam and green electricity

Anaerobic Digestion: - the Green Energy Benefits

- Virtually no methane released to atmosphere
- Combined, the plants will generate approx 10MW (5MW goes to the grid)
- Refuse Derived Fuel goes via rail
 - Approx 20,000 fewer road transport movements
- Saves c.170,000 tonnes CO₂ when compared to landfill

Residual Waste - Existing Facilities Bolton TRF



- Bolton TRF continues to receive 115 tonnes per annum of mixed waste
- Generates c. 7.3MW net electricity, but unfortunately no steam demand

Combined Heat and Power (CHP) at Ineos Chlor, Runcorn

- RDF used to produce electricity and steam for the Ineos Chlor chemical plant at Runcorn
- Two stage (4 line) scheme
- Phase 1 (2 line) will supply
 - 20% of their energy need
 - Meet 100% of their steam requirements
- Scheme attracts green energy credits - double ROC's & LEC's

Renewables Obligation Certificates, Levy Exemption Certificates And Carbon Pricing

- ROC's and LEC's are critical parts of our green power outputs AD plants and CHP scheme at Runcorn - they provide financial support to make the scheme affordable.
- Changes being progressed to the legislative regime, on double ROC's, are crucial to the financial viability of the CHP at Runcorn
- ROC and LEC clearly seem as a major driver by Government to be able to bring on stream Green power and meet our aspirations to increase the power generated from this type of source.
- Carbon Pricing generally should make this type of scheme more competitive in the future.

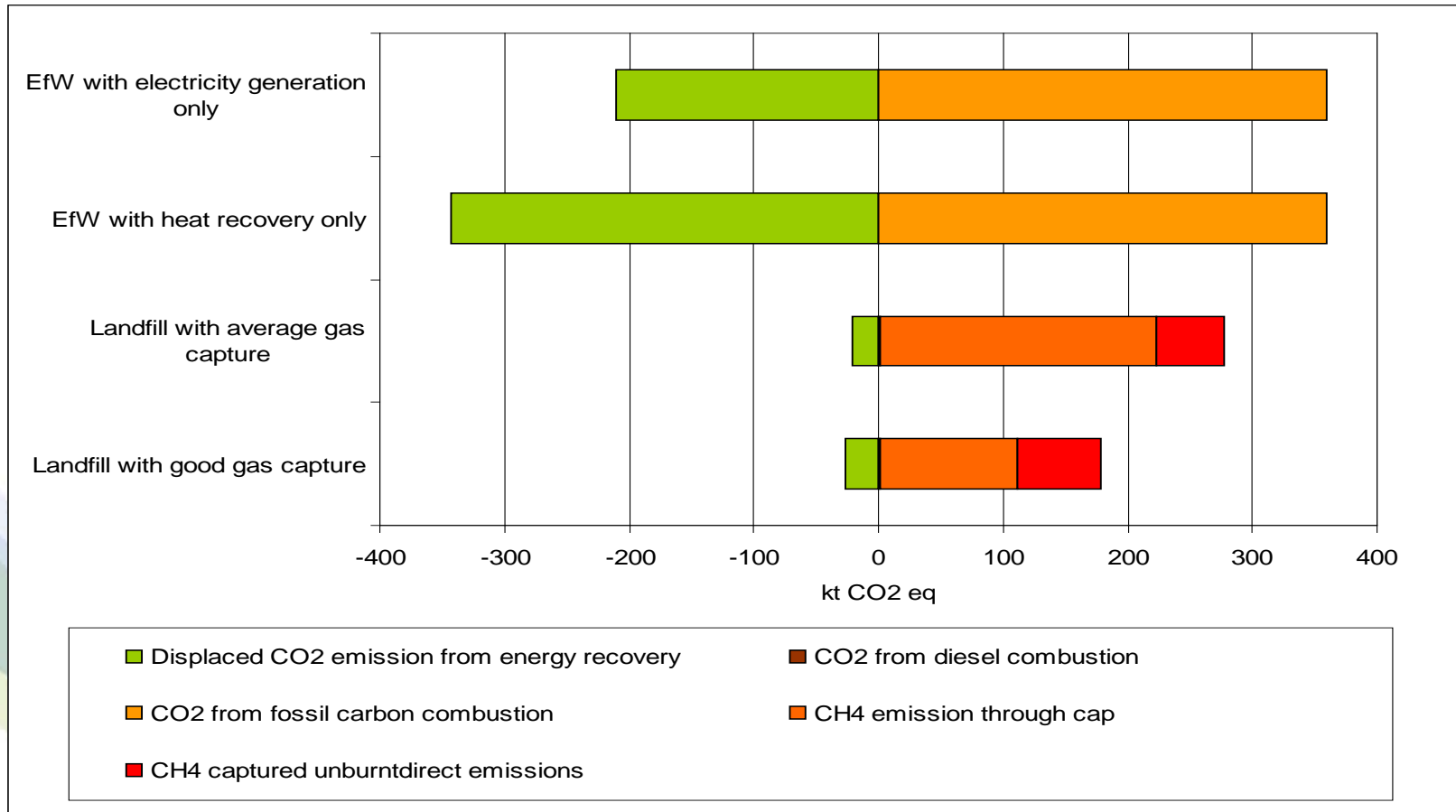
The Climate Change Benefits

- 75% diversion from landfill will reduce methane emissions (landfill responsible for 3% of UK emissions)
- Refuse Derived Fuel (and waste to landfill) mostly moved by rail and detailed road transport planning will reduce transport emissions
- Materials recovered by recycling & composting (at least 50% by 2015) will reduce emissions from processing virgin materials
- Anaerobic Digestion plants will capture methane - used to drive gas engines generating electricity and heat
- Ineos Chlor CHP plant at Runcorn will provide 20% of site energy needs (equivalent to 1 million homes) and will displace significant current fossil fuel usage
- The new contract will focus on & invest in waste prevention & education, increasing participation through children

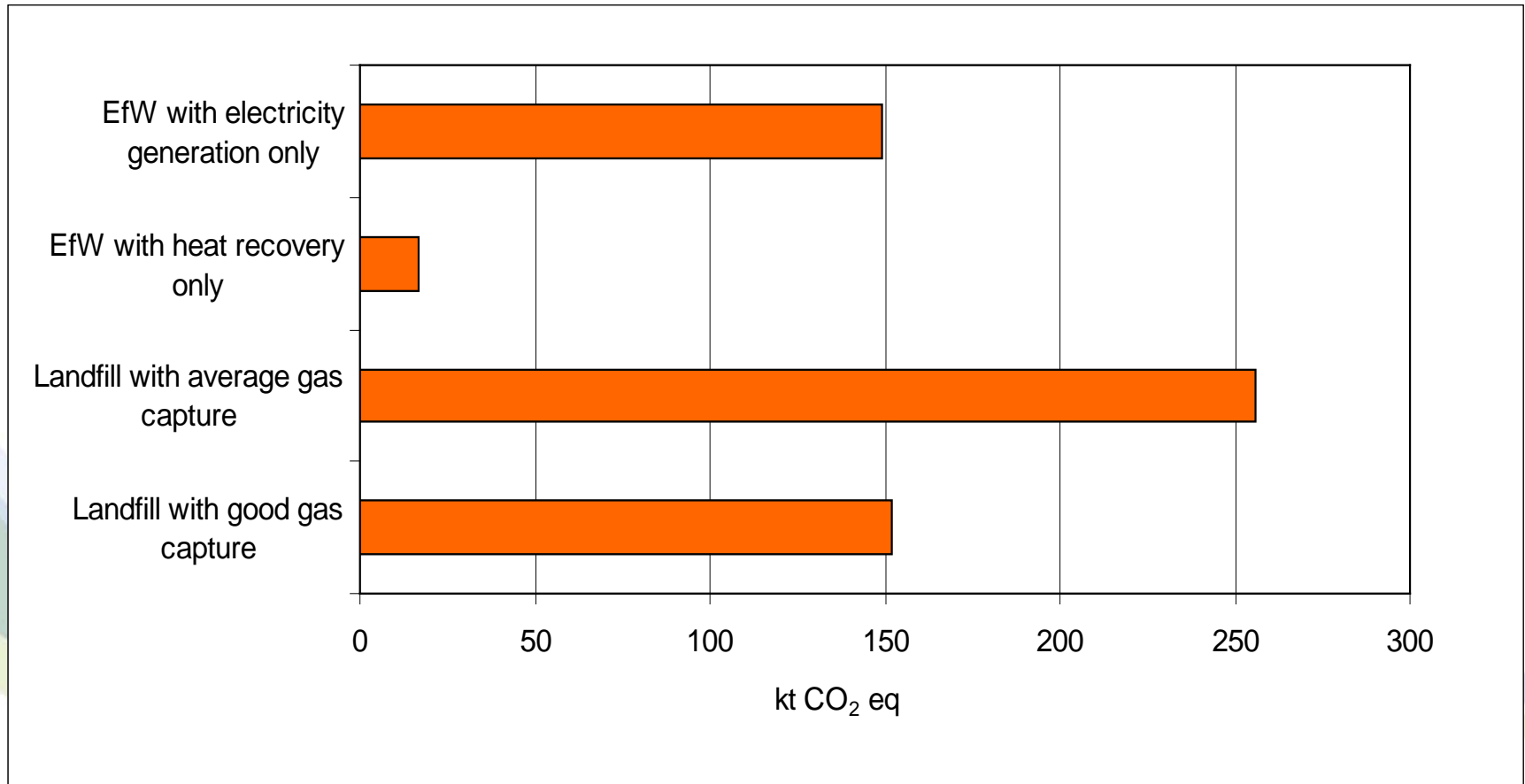
Conclusions

- Climate change is so important that our journey is not over: -
 - Continuing to look at other alternatives that deliver maximum benefits, e.g. wider plastics
 - Working with others to influence strategy - commercial and industrial waste sectors could benefit from a more sustainable approach
 - Influence national picture - such as reduction (packaging) and reuse (market development)

GHG Emissions Arising From Baseline Residual Waste Management Scenarios



Net GHG Emissions Arising From Baseline Residual Waste Management Scenarios



More Information

www.gmwda.gov.uk

