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Zero Waste in the UK

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Resource and Consumption campaign

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The climate challenge

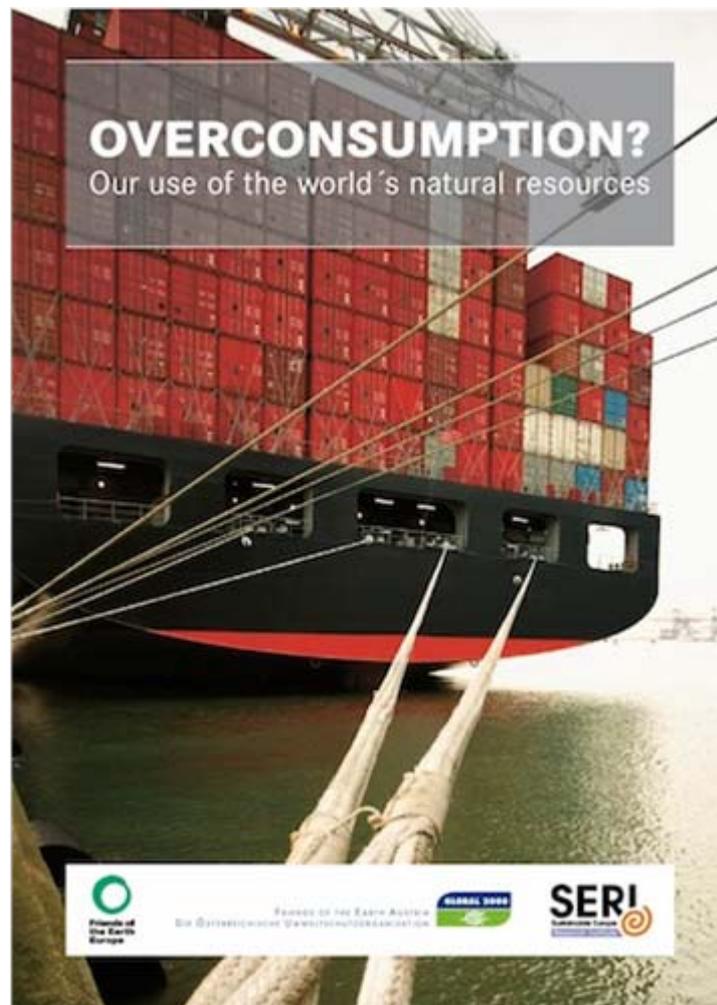
- We all agree that emissions must be cut, and the UK's targets are now written into Climate Change Act 2008
 - Friends of the Earth led the campaign for this Act.
- The key challenges on climate:
 - We need to cut emissions by more than 80% of 1990 levels by 2050
 - We must adopt the best approaches, not just those that are slightly better
 - We need to move fast – Friends of the Earth are proposing a cut of 40% in European emissions by 2020
 - How can we have the fastest impact?



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The resources challenge

- We are using ever-increasing quantities of the world's resources
- Europe is particularly dependant on imported resources – see our 'Overconsumption?' report [1]
- There is an urgent need for more policies to boost eco-efficiency
- The resources agenda will get more important in future years, as consumption in large countries – e.g. China and India – continues to increase.
- Business pressure is increasing
 - E.g. Raw Materials Initiative





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UK “Resource Efficiency”?

>£650 million worth
of materials

Dumped in landfill or incinerators every year...

– See our *‘Gone to Waste’* report [2]



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Creating Green Jobs

- More than **70,000** jobs would be created...
- If the UK chose to recycle 70% of MSW and C&I waste – rather than the 50% MSW in the Waste Framework Directive.
 - See our new *“More jobs, Less waste”* report [3]



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Towards *Zero waste*

- What is Zero waste?
 - 1) Making sure that you keep materials within the economic system
 - Using less/preventing, re-using, recycling, composting
 - 2) Avoiding – phasing out – residual waste
 - The material that isn't reused, recycled, composted (that isn't kept 'in the loop')
 - Residual waste is a problem whether incinerated or landfilled
 - 3) Reducing our use of natural resources overall



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Moving to zero waste

- The top of the hierarchy is the priority:
 - 1) Prevention
 - 2) Reuse
 - 3) Recycling, Composting/Anaerobic Digestion
- Not covered in this talk; see briefings for Best Practice examples
 - <http://www.foe.co.uk/waste>



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Boosting sustainable waste management

- Prevention
 - E.g. food waste collections
- Product policy – more long lasting, reusable and recyclable
 - Including an extension of producer responsibility to new product groups – Toys? Furniture?
- Support Reuse
 - Welcome recent London announcement



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Recycling

- Ban on recyclable materials entering residual waste treatments
 - But a shame the Coalition 'not minded', whilst Wales is enthusiastic
- Recycling quality:
 - Kerbside separated
 - Needn't be in separate bins
 - Alternate weekly collections AWC with weekly food waste collections



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Weekly collections?



- Cost councils £530m over the next four years.
 - Councils would have to run more bin lorries and pay higher disposal costs
- England's 2008/09 rate of 37.6% would drop to as low as 32%.



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Quality recycling – not comingled

WRAP [4]:

“It is well known that the UK has become very dependent on export markets for its collected recyclates. It is less well known that in key areas e.g. paper, aluminium and certain types of glass, UK reprocessors are importing materials because sufficient material of the required quality is not available on the UK market “

“Whilst it is true that considerable success is being achieved by some newer MRFs, even they are unable to deliver the levels of quality achieved by kerbside sort systems.”



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Now the residual...

- In a true 'zero waste' world there would be no residual
 - Zero waste to landfill is not zero waste - zero residual waste is zero waste
- Residual waste is a problem to be prevented
 - Prevention of residual waste is the best climate option
 - Residual waste has economic cost, while keeping material out of the residual often has economic value.
 - Avoiding residual waste increases resource efficiency.
- Everyone claims they want to minimise residual waste
 - Yet many technologies depend on a continuous stream of it...
 - Some people even sign 25 year contracts guaranteeing it!



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Residual waste - what is it?

- How much is there?
 - As a percentage of total municipal waste, Wales is assuming a maximum of 30%, Flanders is burning around 25%
 - The Hovedstaden region of Denmark burns around 77%, recycling just 21%.
- What is in residual waste [5]?
 - 1) Material that could be reused or recycled:
 - but isn't being collected adequately (e.g. food waste, furniture)
 - but isn't being collected due to limited participation
 - but isn't being collected due to poor markets (e.g. mixed plastics)
 - 2) Materials that can't currently be recycled, some of which might become recyclable in the future due to improved design or markets
- Therefore..
 - The amount of residual waste will vary
 - Given the advantages of prevention, reuse, recycling and composting/AD...
 - Waste policy should aim at reducing residual waste



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Why not incinerate the residual?

- The incineration advocate would say...:
 - An incinerator will generate some electricity, maybe some heat (if you can really find a market)
 - They aren't as polluting as they used to be, and you can hire an architect to make them look weird
 - They are a low risk technology, if rather expensive
 - Waste arisings are increasing, and we're running out of landfill
 - “ONLY BURN WHAT CAN'T BE RECYCLED....”



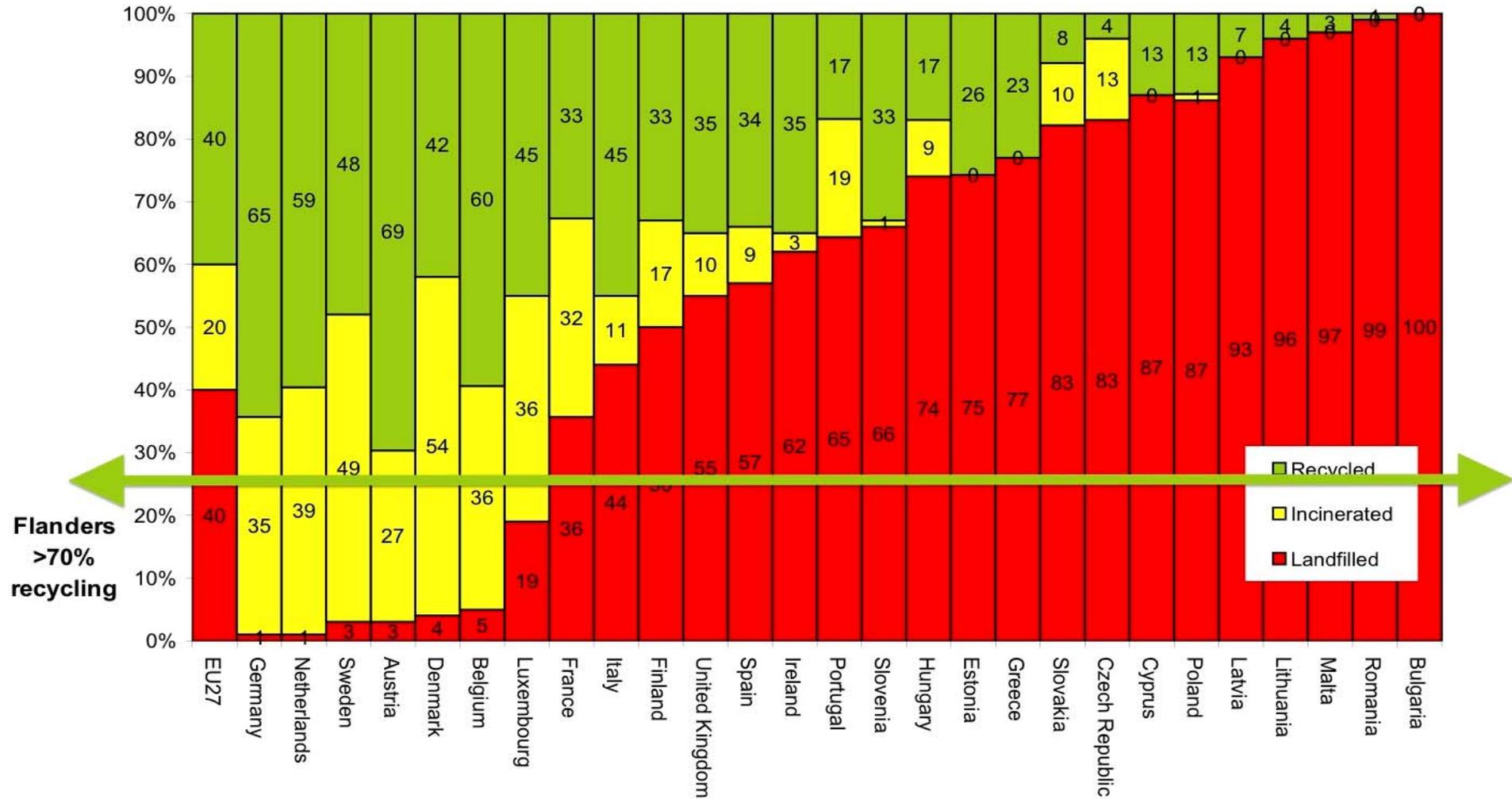
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Why not incinerate the residual?

- But...
 - The electricity is created at a cost in terms of climate emissions, as the technology (even if heat is used) is inherently inefficient [6].
 - Incinerators will burn recyclable materials, unlike other residual waste technologies that will separate out e.g. plastics
 - And it's better for the climate to landfill plastic, not incinerate it, if you can't recycle it [7]
 - Cost more than recycling, and bind councils into >25 yr contracts
 - Incinerators are large, expensive and inflexible, and must be fed with a constant stream of waste, thus removing flexibility (bad in recessions!)

EU MSW Recycling rates

EUROSTAT, MSW 2008





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Denmark

- Regional impacts of incineration:

<u>Regions of Denmark</u>	<u>Recycling</u>	<u>Incineration</u>	<u>Landfill</u>
Hovedstaden	21%	77%	2%
Nordjylland	29%	63%	8%
Sjælland	31%	59%	10%
Midtjylland	40%	53%	7%
Syddanmark	41%	52%	6%

- Denmark generates some of the highest per capita waste in the EU



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Incineration vs recycling

- Denmark produces a LOT of MSW
- And burns more than half of it

<u>EU Municipal Waste 2007 management, Eurostat 2008</u>				
	Municipal waste kg/person	Landfilled	Recycled and Composted	Incinerated
EU27	522	42	39	20
Austria	597	13	59	28
Belgium	490	4	62	34
Denmark	801	5	41	53
Finland	507	53	36	12
France	541	34	30	36
Germany	564	1	64	35
Greece	488	84	16	0
Ireland	786	64	36	0
Italy	550	46	44	11
Netherlands	630	3	60	38
Portugal	472	63	18	19
Spain	588	60	30	10
Sweden	518	4	49	47
United Kingdom	572	57	34	9



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The balance...

	Incineration	Composting & separation
Cost & contract	Very expensive, usually financed through 25-30y contract	Cheap, can be financed through 5y contract
Planning & Build time	Long, usually with local opposition, sometimes engineering problems	Short, generally less opposition, simple technology
Diversion from landfill	Diverts BMW; produces toxic fly ash and less toxic bottom ash - some or all is landfilled	Diverts BMW; produces low grade compost which may be landfilled
Climate & resource efficiency	Inefficient generation of electricity; burning of plastic worse than landfilling it [6].	Increased recycling is positive in climate and resource efficiency terms. Un-recyclable plastic can be landfilled, sequestering carbon [6]
Flexibility	Stable demand for waste for >25 years, regardless of changes in waste composition, new technologies etc.	Very flexible, adapting to changing waste volumes and composition. Able to provide feedstock for new technologies.



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An alternative....

- Don't treat residual waste as material to be burned or buried
- View it as a resource:
 - Use Material Recycling Facility (MRF) technology to separate out recyclables - including plastics, before and after...
 - Composting the residual:
 - to remove the bulk of the biological activity (in case the output is landfilled)
 - to release further recyclables
 - to create a low-grade compost output.
- Other advantages of this approach:
 - Much cheaper and faster to build than incineration, so can be built with much shorter contracts.
 - Very flexible, new 'lines' can be added or removed, MRF can be used on recyclables, composting can be used for source separated compost.
 - Climate - and resource - performance is better than incineration, even if output landfilled [5].
 - Already happening in UK, e.g. New Earth solutions, Dorset



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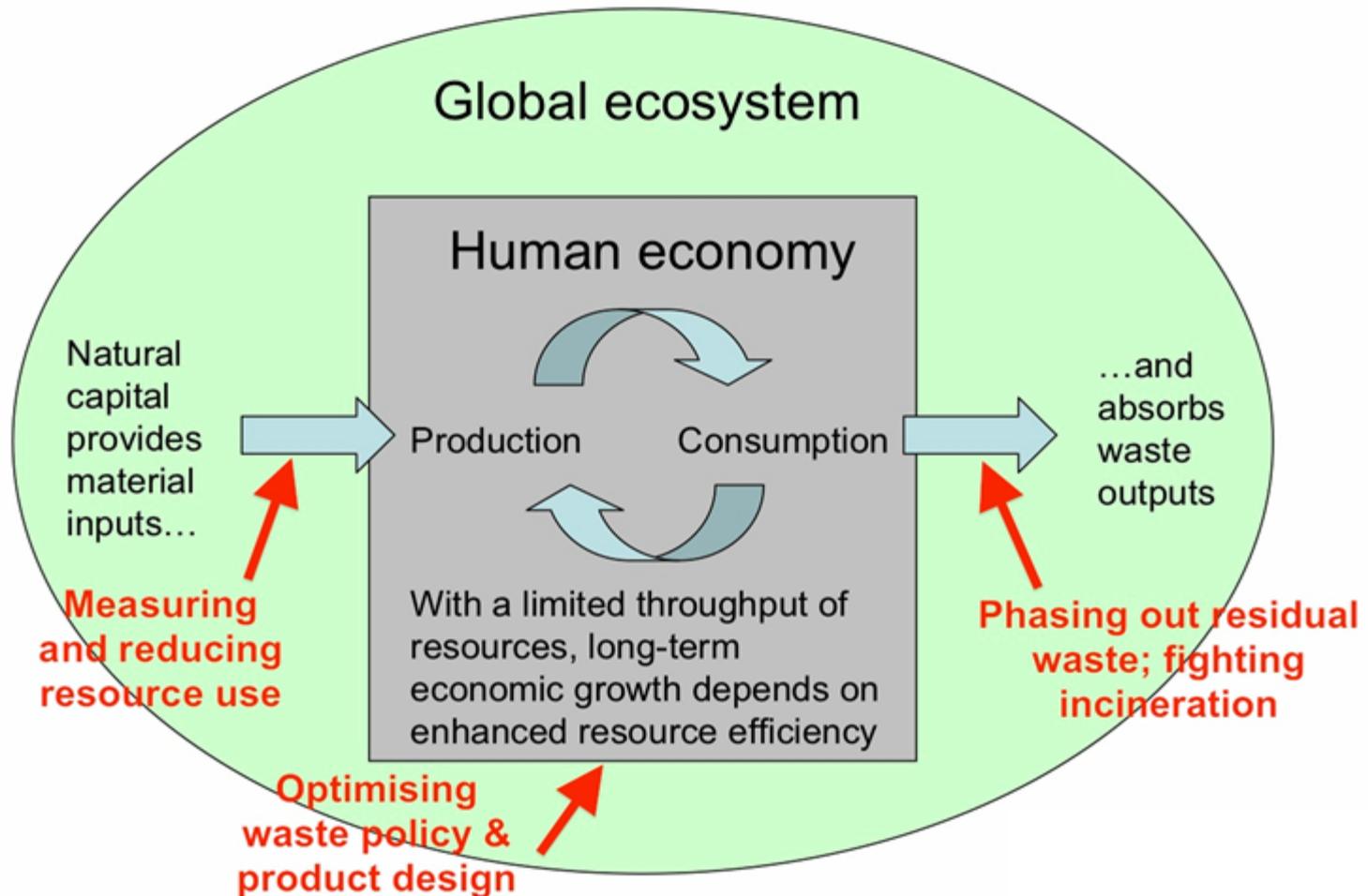
A 2020 vision for the Waste Strategy and beyond

- Product policy is making things more long lasting, more reusable and more recyclable
- Waste volumes are reducing.
- Landfill AND incineration bans and taxes
- Flexible, climate AND resource efficient residual waste processes (i.e. not incineration).
- At least 70% reuse & recycling
 - All waste streams and types are being addressed, with a focus on ensuring best practice (including quality and market development).
- The EU is measuring its resource use, and creating policies to reduce it. (see our briefing – [7])



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Zero waste in summary





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References

- [1] “*Overconsumption? Our use of the world’s natural resources*”, Friends of the Earth Europe/Sustainable Europe Research Institute, September 2009:
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- [2] “*Gone to waste: the valuable resources that European countries bury and burn*”, Friends of the Earth, October 2009: http://www.foe.co.uk/resource/reports/gone_to_waste.pdf
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- [4] “*Choosing the right recycling collection*” .WRAP (2009)
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- [5] http://www.foe.co.uk/campaigns/biodiversity/news/taking_rubbish_20031.html
and also our “*Sorting residual waste*” briefing http://www.foe.co.uk/resource/briefings/residual_waste.pdf
- [6] “*A changing climate for energy from waste?*”, Eunomia Consulting, May 2006.
http://www.foe.co.uk/resource/reports/changing_climate.pdf
- [7] Eriksson, O., & Finnveden, G. (2009). *Plastic waste as a fuel - CO2-neutral or not?* Energy & Environmental Science, 2(9), 907-914.
- [8] “*How to measure Europe’s Resource Use*”, Sustainable Europe Research Institute for Friends of the Earth Europe, July 2009: http://www.foeeurope.org/publications/2009/seri_foe_measuring_eu_resource_use_final.pdf

For more information on Friends of the Earth Europe’s work on Waste & Resources, see
http://www.foeeurope.org/activities/waste_management/index_resources.html