

Briefing

Changing the way we do business

The impacts of our resource consumption and how we can move to a 'circular economy'

We have a problem with 'stuff': our economies **extract** too much, **consume** too much and **waste** too much.

The Earth's ability to sustain humanity's increasing rate of consumption is being pushed to the limit. We're using ever more of the world's finite resources and making ever-higher demands on the planet, such as changing the climate and destroying habitats and ecosystems. And the UK and EU's economies are using far more than our fair share of the world's natural resources – a major economic risk.

Climate change

According to experts, carbon emissions could be cut by almost 70 per cent if policy measures on renewable energy, energy efficiency and material efficiency were adopted.¹

Greenhouse gases (GHGs) are emitted at each stage of a product's lifecycle:

- **Extracting** virgin materials and turning them into products uses a huge amount of energy. Recycling aluminum requires 95 per cent less energy, and produces 95 per cent fewer GHGs, than manufacturing primary aluminium.²
- **At the end of a product's life**, disposal of waste to landfill or incineration also releases significant GHGs. Waste emissions account for 4 per cent of the UK's total.³
- Emissions from large power stations, refineries, waste plants and **factories** are significant. Industry directly accounts for around a quarter of UK GHG emissions, as does electricity generation.⁴

Impacts on nature

A healthy natural world and the resources it provides are the foundation of our economy and our society. Without them neither could function. But the demand that our economies place on these global resources is hugely impacting on nature and biodiversity, such as:

- **pollution** from industry, extraction and dumping is damaging ecosystems and habitats.⁵
- **forests** around the world are being cleared to grow animal feed such as soya, to provide meat often for Western consumers.⁶

For more than 40 years we've seen that the wellbeing of people and planet go hand in hand – and it's been the inspiration for our campaigns. Together with thousands of people like you we've secured safer food and water, defended wildlife and natural habitats, championed the move to clean energy and acted to keep our climate stable. Be a Friend of the Earth – see things differently.

Changing the way we do business: resources and the circular economy

- Our **plastic waste ends up in the sea**, harming and killing marine-life and birds. A major global survey of coastal litter reported in 2010 that 15 per cent of animals found dead had become entangled in plastic bags. It is estimated that the stomachs of 90 per cent of all seabirds contain plastic.⁷
- And we are all familiar with **litter** strewn over streets, hedgerows, waterways and coasts. Clearing it up costs local authorities around £850 million each year.⁸



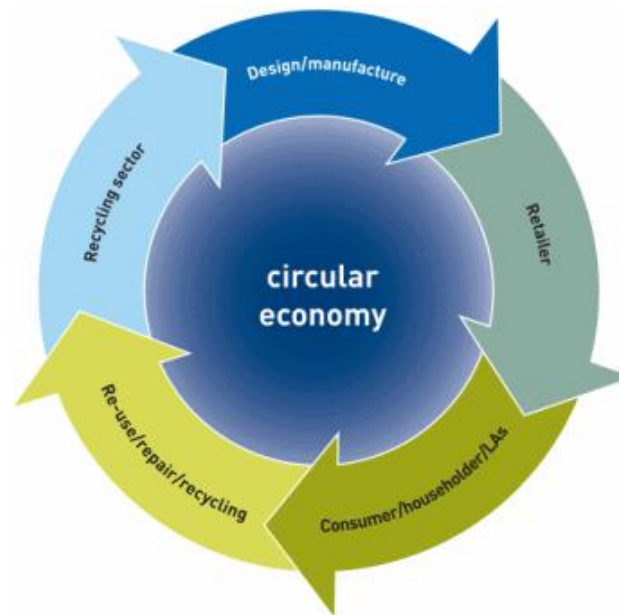
Remains of an albatross chick showing plastic ingested before death

Economy

“A more circular economy, where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimised, is an essential contribution to the EU's efforts to develop a sustainable, low carbon, resource efficient and competitive economy.” – European Commission, December 2015⁹

A ‘circular economy’ is about **changing the way we do business**: extracting far fewer virgin resources, and treating virtually nothing as ‘waste’. From products designed to last and to be disassembled and their component materials used again, to remanufacturing, repurposing and ‘sharing’, the circular economy would hugely enhance the economic value of every unit of natural resource.

By requiring fewer raw materials per unit of GDP, UK companies will be more likely to secure affordable resources, and their customers could be more insulated from price hikes. The comparatively labour-rich circular economy would boost employment, with even a modest level of ambition generating 200,000 UK jobs by 2030, reducing unemployment by 54,000.¹⁰



What needs to be done

1) Inputs: Understanding what we use

You can't manage what you don't measure. Carbon footprinting has developed rapidly but other major environmental footprints of our economies – how much land, water and raw materials we rely on, including from other countries – aren't yet properly understood by companies or governments.

We propose that instead of thinking just about carbon footprints, we need a more sophisticated, joined-up set of **four**:¹¹

1. **Land footprint** - the real land we are using for our food, timber and so on, wherever it comes from in the world.
2. **Water footprint** - the quantity of water used in the life cycle of a product or by a country.
3. **Material footprint** - the total tonnage of material extracted to make a product, or support a country's consumption.
4. **Carbon footprint** - the greenhouse gas emissions produced during the lifecycle of a product, or required by a country as a whole including its consumption of goods.



The first three of these are core, finite inputs to our economic system: the basic underpinnings of our economies. As land, water and material footprints increase so does pressure on ecosystems, habitats and people around the world – leading to, for example, an increased risk of 'land grabbing' as communities are forced off their land by governments and companies.¹²

Governments and companies should adopt the 'four footprints' as their way of understanding the scale of their resource use – before going on to set targets to bring all four within safe and economically resilient limits. This should include mandatory reporting requirements for companies, building on the success of carbon emissions reporting.

2) **Outputs: Waste nothing**

'Waste' is a problem – environmentally and economically. The ideal is to hugely reduce the amount of what is considered waste in the first place by designing products better, or increasing the reuse or remanufacture of products or components.

For the little genuine waste that is produced, we should aim to recycle just about all of it – permanently closing the door to landfill or incineration (see box below). We need to stop funding and building infrastructure for the burning of waste as once these investments are made and the infrastructure exists we are 'locked-in' to waste creation.

But while we do need higher ambition on domestic recycling, and **tough targets from governments to keep on increasing the proportion of our waste that we recycle**, waste is not only created at the end of a product's life.

Making poor quality products with short lifespans means using additional energy and resources, thereby generating more waste and harmful pollution. We must start designing goods in ways that make them long-lasting, and easier to disassemble for repair, reuse and ultimately, recycling.

What's wrong with incineration?

Incineration – sometimes misleadingly labelled 'energy from waste' – is bad for the climate and profoundly economically wasteful. Incinerators that produce electricity emit 33% more GHGs than gas fired power stations,¹³ as well as causing pollution from air emissions and toxic ash.¹⁴ Hugely valuable materials are destroyed forever: in 2009 our research showed that the UK landfilled and incinerated recyclable material worth £650 million every year.¹⁵ And incinerators require council to feed them for 'waste' for decades into the future, with long contracts typically requiring guaranteed inputs for 25-30 years.¹⁶

Carbon emissions and inefficiency can be reduced significantly by smarter design. In turn this will reduce the need to extract and produce new materials and products, resulting in radical energy savings in extraction and production. Processes that use secondary raw materials consume

considerably less energy than manufacturing from virgin materials. For example, remanufacturing typically uses 85 per cent less energy than manufacturing.¹⁷

We need high levels of ambition – with targets – for increasing recycling, alongside new regulations or taxes to clamp down on incineration and landfilling.

3) New business models

Perhaps the most exciting part of the 'circular economy' is in completely new ways of doing business: services instead of goods, durable goods that are repairable, reusable and upgradable, promoting shared or leased ownership, and return or reuse programmes.

These business models have an inbuilt incentive to make their product last, and make it sustainably. If a person is a product user rather than a product owner then the manufacturer has an incentive to make more durable products that, in case of malfunction, can be repaired easily and upgraded. The growing example of sharing could be replicated with other products, such as household tools.¹⁸

We need comprehensive plans from governments to change the way business is done: regulations, funding and incentives so that all companies make their products better and with a far lower impact on the environment.

Find out more - visit us at <http://www.foe.co.uk/go/resources>

¹ The Club of Rome, 2015, *The Circular Economy and Benefits for Society* www.clubofrome.org/?p=8260

² United States Environmental Protection Agency, *Source Reduction and Recycling*; <https://en.wikipedia.org/wiki/Recycling>

³ Committee on Climate Change, webpage 'UK Emissions by Sector', www.theccc.org.uk/charts-data/ukemissions-by-sector/, retrieved 16th Dec 2015

⁴ Committee on Climate Change, webpage 'UK Emissions by Sector', www.theccc.org.uk/charts-data/ukemissions-by-sector/, retrieved 16th Dec 2015

⁵ Friends of the Earth Europe, 2009, *Overconsumption - Our use of the world's natural resources* www.foeeurope.org/publications/2009/Overconsumption_Sep09.pdf; Friends of the Earth Europe, 2013, *Less is More: resource efficiency through waste collection, recycling and reuse* www.foeeurope.org/less-more-140213 (see also https://en.wikipedia.org/wiki/Environmental_impact_of_mining, <http://www.worldwildlife.org/threats/pollution>, https://en.wikipedia.org/wiki/Landfill#Social_and_environmental_impact)

⁶ See for example Friends of the Earth, 2015, 'Toast: climate change and the Right to Food' <https://www.foe.co.uk/sites/default/files/downloads/toast-climate-change-right-food-76733.pdf>

⁷ PNAS, 2015, *Threat of plastic pollution to seabirds is global, pervasive, and increasing* <http://www.pnas.org/content/112/38/11899.abstract>

⁸ Keep Britain Tidy, 2015, Written evidence submitted to Communities and Local Government Committee <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/communities-and-local-government-committee/litter/written/14236.html>

⁹ European Commission, 2015, *Closing the loop - An EU action plan for the Circular Economy* http://ec.europa.eu/priorities/jobs-growth-investment/circular-economy/docs/communication-action-plan-for-circular-economy_en.pdf

¹⁰ Green Alliance and WRAP, 2015, *Employment and the circular economy* www.green-alliance.org.uk/resources/Employment%20and%20the%20circular%20economy.pdf

¹¹ Friends of the Earth, 2015, *The Four Footprints: An FAQ for Policy-Makers* www.foe.co.uk/sites/default/files/downloads/four-footprints-technical-briefing-75801.pdf and Friends of the Earth webpage 'Four footprints' www.foe.co.uk/page/four-footprints

¹² See Friends of the Earth webpage 'Landgrabbing' www.foe.co.uk/page/land-grabbing and Friends of the Earth Europe webpage 'Land grabbing' www.foeeurope.org/node/597

¹³ Friends of the Earth, 2006, *Dirty truths: incineration and climate change* www.foe.co.uk/resource/briefings/dirty_truths.pdf

¹⁴ Friends of the Earth, 2007, *Up in Smoke* www.foe.co.uk/resource/media_briefing/up_in_smoke.pdf

¹⁵ Friends of the Earth, 2009, *Gone to waste: the valuable resources that European countries bury and burn* www.foe.co.uk/resource/reports/gone_to_waste.pdf

¹⁶ Friends of the Earth, 2009, *Long waste contracts* www.foe.co.uk/resource/briefings/long_contracts.pdf

¹⁷ KTN, 2015, *Supporting Excellence in UK Remanufacturing* www.carbontrust.com/resources/reports/advice/supporting-excellence-in-uk-remanufacturing

¹⁸ See Friends of the Earth webpage 'Why the sharing economy is better - and why cities do it best' www.foe.co.uk/what_we_do/about_us/gyeman_sharing_40709