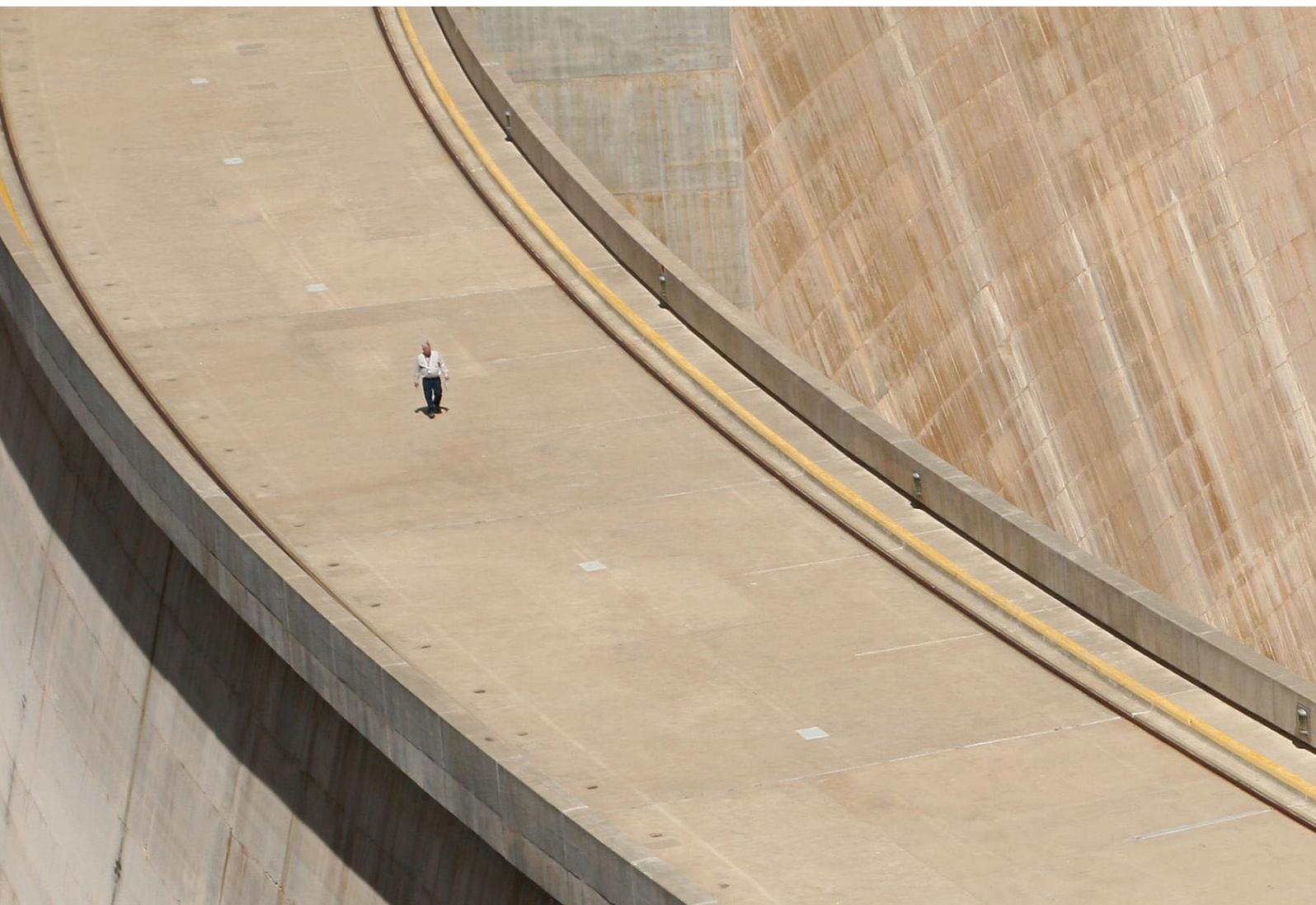


More from less — material resource efficiency in Europe
2015 overview of policies, instruments and targets in 32 countries

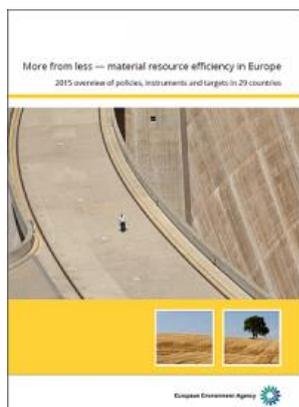


United Kingdom 

May 2016

This country profile is based on information collected by the Resource Efficiency Teams at the UK Department of Environment, Food and Rural Affairs (including from contributions from the Scottish Government, Welsh Government and the Department of the Environment, Northern Ireland). This document should not be seen as an official list of government priorities and is not necessarily an exhaustive list of all national material resource efficiency policies, objectives, targets or activities in place. The information is current as of June 2015.

This country profile was prepared as part of the 2015 EEA review of material resource efficiency policies, that aimed to collect, analyse and disseminate information about the development and implementation of material resource efficiency policies in EEA member and cooperating countries. The work resulted in the following outcomes:



32 short country profiles (this document) – self assessments prepared by countries, describing the current status of material resource efficiency policies including key strategies and action plans, policy objectives, instruments, targets and indicators, and the institutional setup. Countries were also invited to share reflections on the future direction of resource efficiency policies.

EEA report *More From Less – material resource efficiency in Europe* – prepared by the EEA and ETC/WMGE, the report analyses trends, similarities and differences in policy responses, showcases selected policy initiatives from the countries, and offers some considerations for the development of future policies.

The EEA report *More from less – material resource efficiency in Europe* and the 32 country profiles are available at: <http://www.eea.europa.eu/resource-efficiency>

For information about trends and policies on municipal waste management in the participating countries, please visit: <http://www.eea.europa.eu/publications/managing-municipal-solid-waste>

Information about EU Member States' waste prevention programmes can be found at: <http://www.eea.europa.eu/publications/waste-prevention-in-europe-2015>

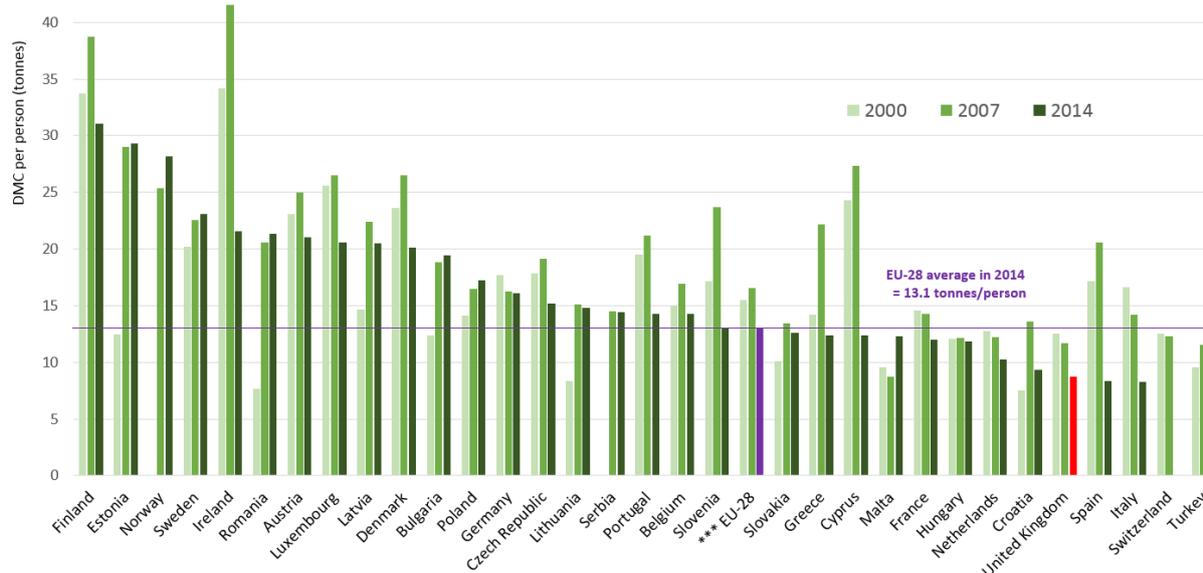
For information on climate- and energy-related policies, including those on energy efficiency, in the participating countries, please visit: <http://www.eea.europa.eu/themes/climate/ghg-country-profiles>

United Kingdom, facts and figures

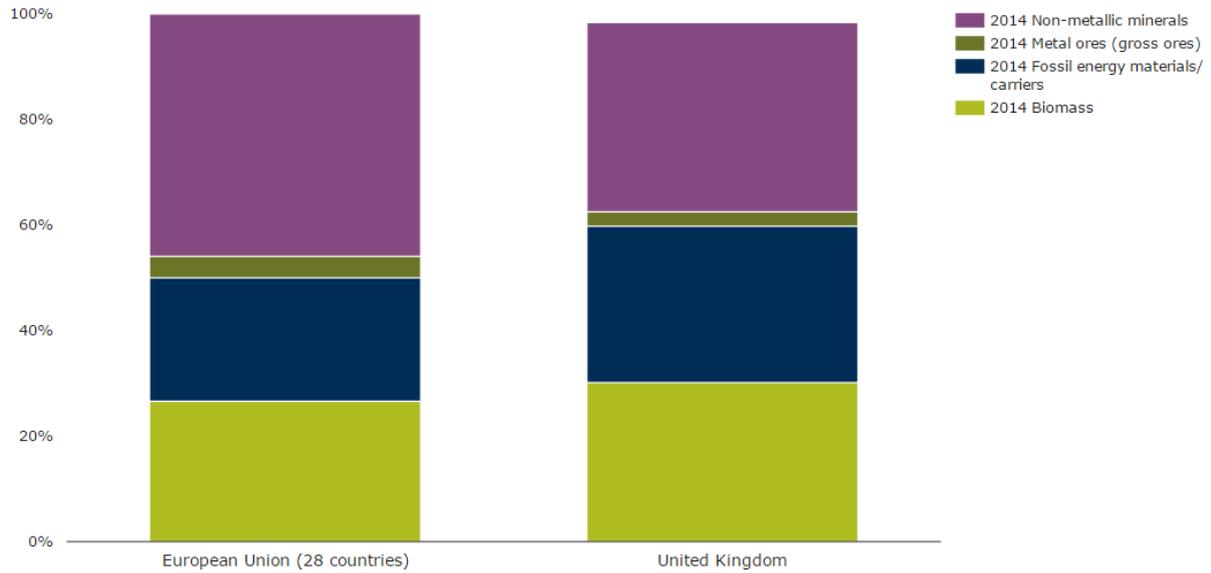
Source: Eurostat

	<p>GDP: EUR 2,254 billion (16.2 % of EU-28 total in 2014)</p>
	<p>Per person GDP: EUR 29,900 (in purchasing power standard) (109 % of EU-28 average per person in 2014)</p>
	<p>Use of materials:</p> <p>563 million tonnes DMC (8.5 % of EU-28 total in 2014) 8.7 tonnes DMC/person (67 % of EU-28 average per person in 2014) Resource productivity 3.49 EUR/kg (176 % of EU-28 average in 2014)</p>
	<p>Structure of the economy:</p> <p>agriculture: 0.6 % industry: 20.6 % services: 78.8 % (2014 est.)</p>
	<p>Surface area: 248,500 square kilometres (5.6 % of EU-28 total)</p>
<p>Population: 64.6 million (12.7 % of EU-28 total)</p>	

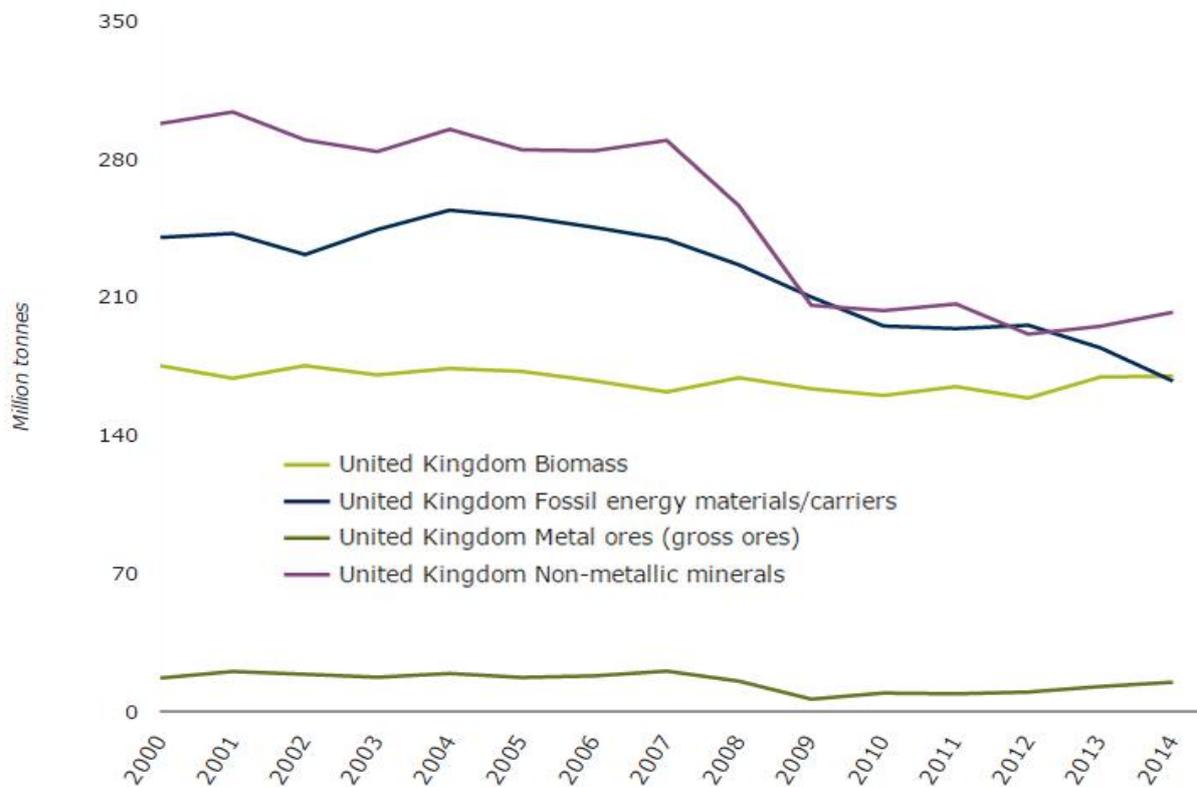
Use of materials (DMC) per person, participating countries and EU-28
(2000, 2007 and 2014)



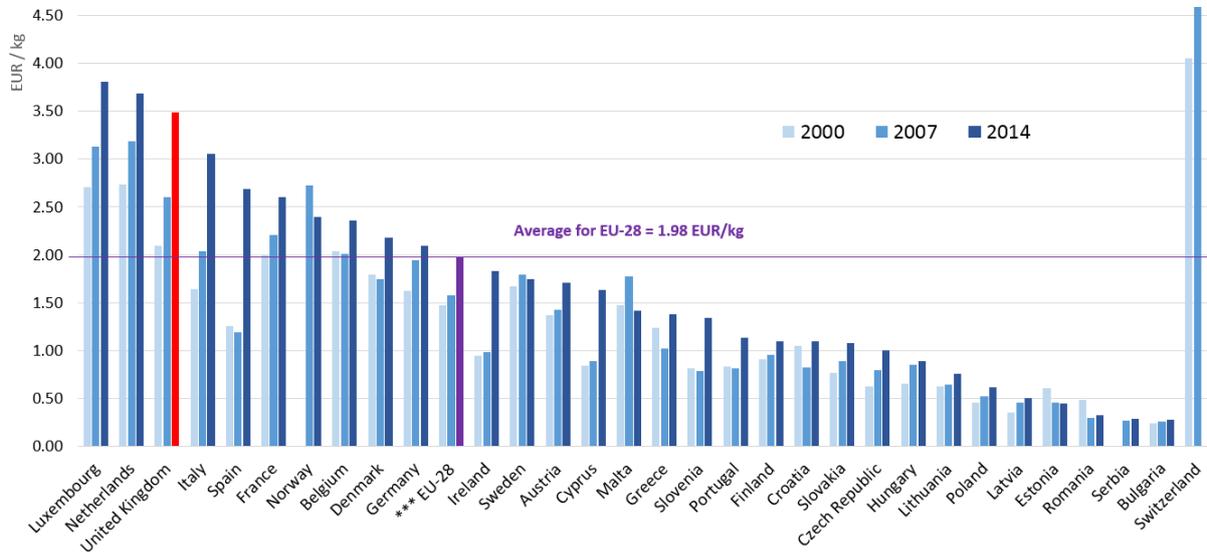
Domestic material consumption by category, EU-28 average and United Kingdom (2014)



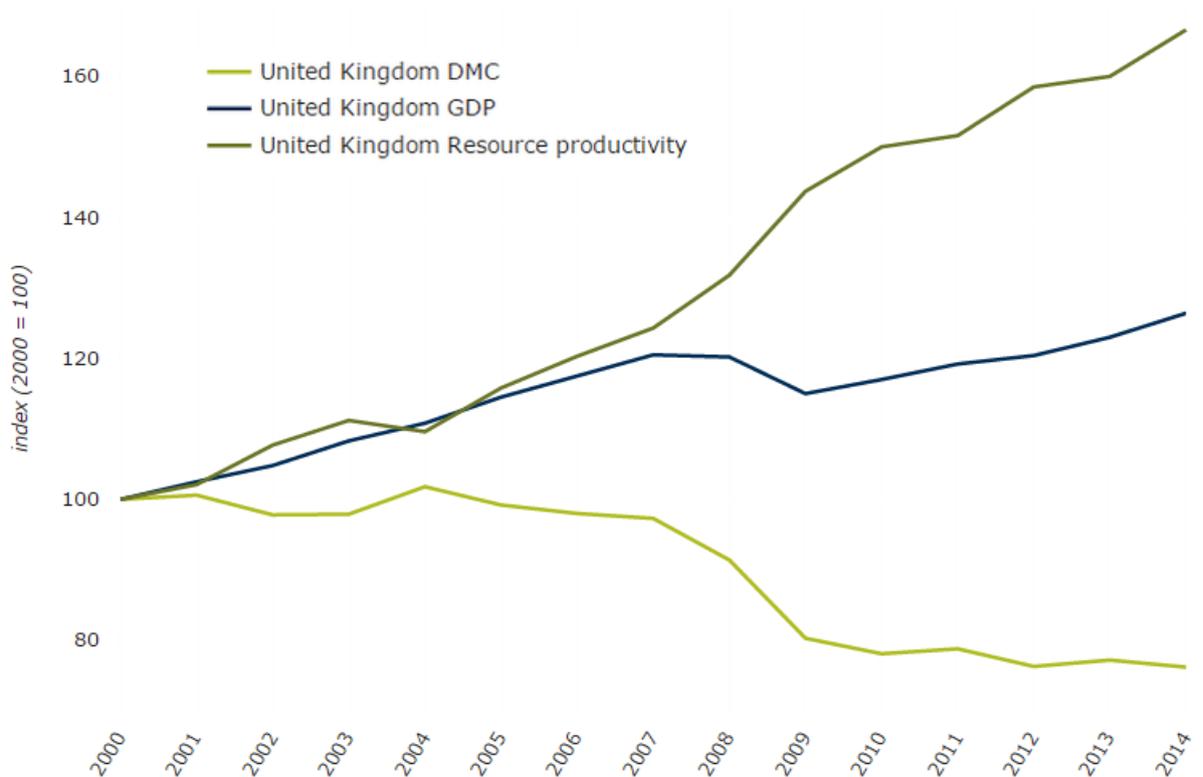
Trends in material consumption, United Kingdom by category (2000–2014)



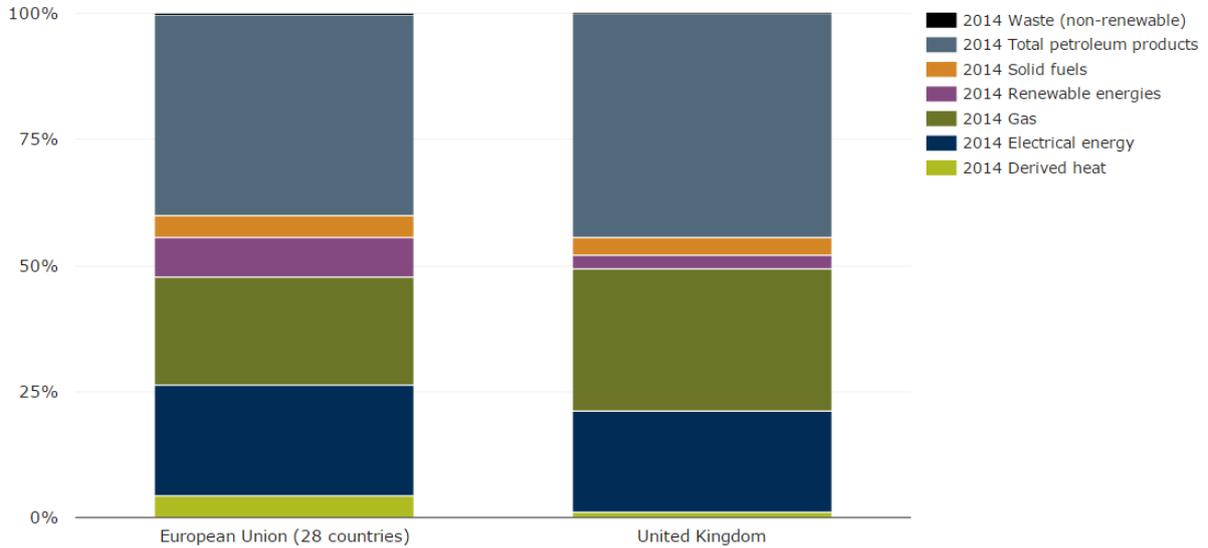
**Resource productivity (GDP/DMC), participating countries and EU-28
 (2000, 2007 and 2014)**



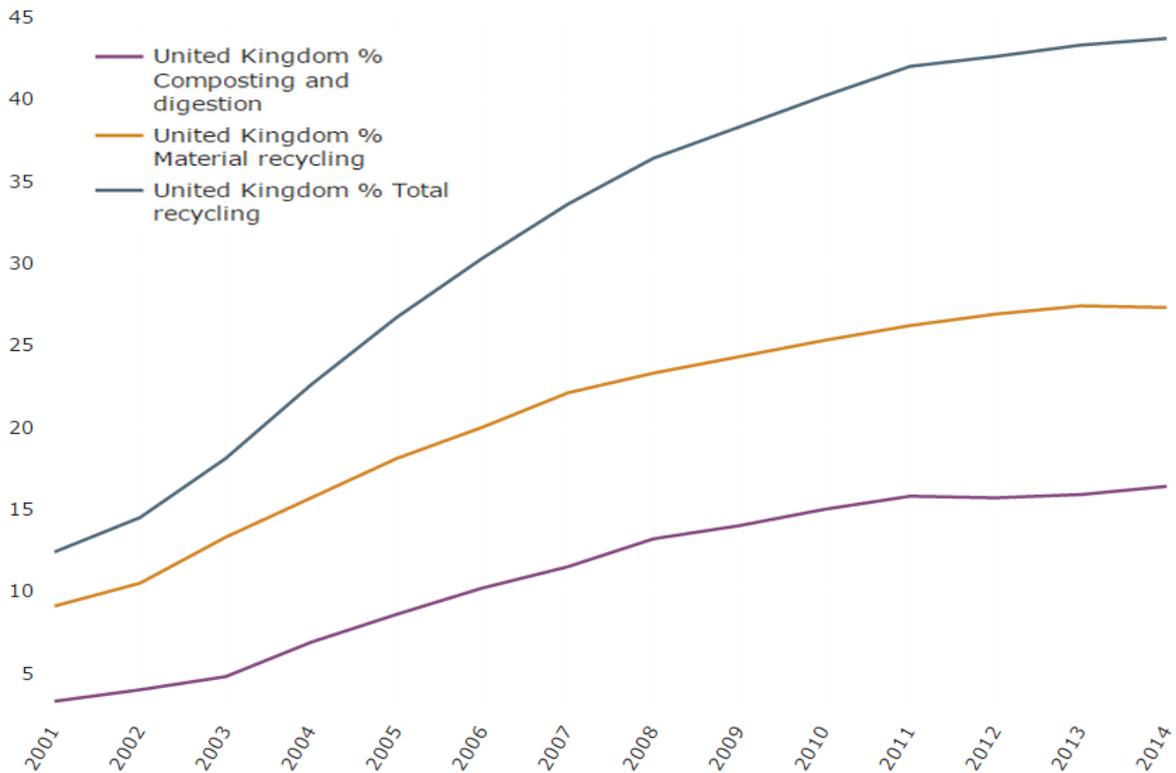
GDP, DMC and resource productivity trends, United Kingdom (2000–2014)



Share of final energy consumption by fuel type, EU-28 and United Kingdom (2014)



Recycling of municipal waste, United Kingdom (2001–2014)



Introduction

NOTE: In the UK environment policy, including on resource efficiency is devolved. This means that there can be, and are, different policies for resource efficiency, waste management and a more circular economy in the different administrations. In this response we differentiate between the policies on resource efficiency by using sub-headings by UK region (England, Wales, Scotland and Northern Ireland) as appropriate. Where policies are the same or responses to the questions are the same then we use the “UK” heading.

England

To date England has not had a dedicated resource efficiency strategy. There is however a Waste Prevention Programme for England which was published in December 2013.

Northern Ireland

To date Northern Ireland has not had a dedicated resource efficiency strategy.

Scotland

The Scottish Government’s 2013 strategy, “Safeguarding Scotland’s Resources” sets out Scotland’s approach to resource efficiency, as per its subtitle – “Blueprint For A More Resource Efficient And Circular Economy”: <http://www.gov.scot/Publications/2013/10/6262>

Its headline action is the Resource Efficient Scotland programme, established in 2013 to provide, practical, on-the-ground support to help businesses eliminate unnecessary waste (water, energy and materials), save money and retain a competitive edge:

<http://www.resourceefficientscotland.com/content/about-us>

The Scottish Government has consulted in 2015 on a new circular economy strategy, due to publish in 2016.

Wales

Wales does have a dedicated resource efficiency strategy. ‘Towards Zero Waste’ is the overarching waste strategy for Wales.

Scope of material resource efficiency

England

We define resource efficiency as:

“using the Earth’s limited resources in a sustainable manner while minimising negative impacts on the environment.”

However, we recognise that improving resource efficiency in a broader sense – through the better management of energy, materials and water and reducing waste – is key to delivering the benefits of a sustainable and growing economy.

Scotland

In “Safeguarding Scotland’s Resources”, Resource Efficiency is defined as “wider than just materials, and also covers efficient use of water and energy. The concept is about using the least amount of resources (energy, water and materials) to maximum effect - cutting overheads and improving productivity by creating more with less”.

Scotland’s forthcoming circular economy strategy will cover all “loops” of the Circular Economy from design to reuse/repair to recycling; and also how best to manage “leakage” via energy from waste and landfill. The strategy will encompass biological and technical materials and products.

Wales

We define resource efficiency as: “Managing raw materials, energy and water in order to minimise waste and thereby reduce cost.”

The strategy document explains our role in the Government’s commitment to see Wales using only its fair share of the earth’s resources within the lifetime of a generation and how we will reduce our impact on climate change. It also shows how we will make the most of the opportunities there are in resource efficiency and waste management to contribute towards a sustainable future for Wales. Our sector-specific plans set out resource efficiency objectives for our delivery bodies to carry out in their work.

Driving forces of material resource efficiency

The key factors driving material resource efficiency in the United Kingdom are:

- Productivity/competitiveness
- Material security
- Climate change

These are the same across the UK. Further details can be found in a number of documents, including “Prevention is better than Cure: The role of waste prevention in moving to a more resource efficient economy”

(https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/265022/pb14091-waste-prevention-20131211.pdf)

Priority material resources, sectors, and consumption categories

Priority materials

United Kingdom

Critical raw materials/resource security - The Resource Security Action Plan (RSAP) published in 2012 outlines the UK policy position and a number of actions. The Action Plan covers a broad range of renewable and non-renewable resources not covered by government policies on energy and food. While in practice much of the focus of the short-term actions is on metals and minerals which have been identified as critical by many UK businesses, the analysis and statement of policy are relevant to a wider range of resources that are important to the UK economy. The majority of the actions have now been completed, but the Department for Business, Innovation and Skills (BIS) has now taken responsibility for the policy, while Defra has agreed a watching brief. This Action Plan can be viewed at: <https://www.gov.uk/government/publications/resource-security-action-plan-making-the-most-of-valuable-materials>

Linked to this a **Pilot Resources Dashboard** was developed by the **Knowledge Transfer Network** (KTN) and launched in July 2013. This is designed to help business understand the risk and issues around the availability of resources, and what they can do in response. The KTN have recently focused on methodologies for assessing supply chain risks for the Dashboard and are considering, next steps, exploring future funding opportunities.

The Dashboard can be viewed at this link: <https://connect.innovateuk.org/web/the-resource-dashboard>

Scotland

Our existing and proposed strategies include different measures targeting particular waste streams and materials including household waste, commercial waste, dry recyclables, food waste, commercial bio-wastes and plastic bags. Linked to that, our forthcoming circular economy strategy is examining particular activities and industries with greatest potential for more circular use of products and materials including the food production sector, packaging, energy, biotechnology, chemical industries, remanufacturing and reuse.

Wales

Yes, we have identified 'Priority Waste Streams' in our waste strategy. They are:

Waste Prevention - Reducing our waste arisings overall is very important. However, there are some materials which, if waste prevention action is focussed on them, will reduce our ecological footprint sooner. For household waste, these are Food waste, Plastic, Paper, WEEE (waste electronic and electrical equipment), batteries, oil, clinical waste, hazardous items, textiles, shoes, wood, nappies, carpet, furniture also have a combined high impact on our ecological footprint.

Commercial and Industrial Waste - Reducing our waste arisings overall is very important. However, there are some materials which, if waste prevention action is focussed on them, will reduce our ecological footprint sooner. For commercial and industrial waste these are:

- **Food** - food waste generates over 30% of the total ecological footprint impact of commercial and industrial waste in Wales. Working with food producers, food retailers (such as supermarkets and restaurants) and food industries such as hospital catering facilities to reduce food waste will result in the largest reduction in ecological footprint from this sector.
- **Paper and card** - paper and card also has a large ecological footprint impact in terms of commercial and industrial waste (15% of the total).

Chemicals - Chemical waste represents 12% of the total ecological footprint impact but only 4% of the total tonnage of waste.

Construction and Demolition Waste - Reducing our waste arisings overall is very important. The construction and demolition sector plan will focus on reducing our waste arisings, with specific emphasis on the priority materials which will reduce our ecological footprint the most.

For construction and demolition the priority wastes are: **Wood, Plastic, Metal, Insulation and gypsum, Hazardous waste.**

Our evidence base for selecting the priority waste streams stems from our Ecological Footprint research. Link as follows:

http://wales.gov.uk/topics/environmentcountryside/epg/waste_recycling/zerowaste/zerowastebackground/evidence/;jsessionid=239329B8190C136C6C8645B6CE433BBF?lang=en

Priority industries and economic sectors

United Kingdom

Construction - The Built Environment Commitment was launched on 2 July 2014 at the government Construction Summit. Developed in consultation with industry, this Commitment is a strategic priority of Construction 2025 – the industrial strategy for construction. It is focused on a simple statement of intent – each signatory (currently 36) commits to take action that contributes to a more low carbon, resource efficient built environment, and is underpinned by government funded tools and resources.

Wales

Separate sector-specific plans been published: Municipal sector plan, Construction and Demolition sector plan, Commercial and Industrial sector plan, Food, manufacture, service and retail sector plan. The Collections infrastructure and Markets Sector Plan and the Waste Prevention Plan are cross-sectoral. The sector plans can be found here:

http://gov.wales/topics/environmentcountryside/epq/waste_recycling/publication/?lang=en

Work by the Welsh Government and Natural Resources Wales in 2014 has established that a small number of permitted industries in Wales operating across five sectors (manufacture of food and drink, manufacture of ferrous and non-ferrous metals, manufacture of chemicals, manufacture of paper and card and power generation) are responsible for roughly three quarters of all waste from the sector. Of the 93 regulated industry facilities considered, the 'top 10' are responsible for around 90% of this waste. The Welsh Government is therefore considering options to work with these identified facilities to further consider these waste streams, as to date, industrial support provided on resource efficiency has largely concentrated on SME's.

Priority consumption categories

United Kingdom

- Food and drink sector including hospitality and food service sector
- Public and local government sector
- Construction/Built Environment
- Textiles
- Electricals
- Vehicles

There are some good examples of voluntary agreements operating in the UK for clothing, food and packaging and electrical and electronic products. These are set out in the section on voluntary agreements on pages 28-29.

Policy framework

National strategies or action plans for material resource efficiency

England

To date the UK has not had a dedicated resource efficiency strategy. However, there is a Waste Prevention Programme for England which was published in December 2013 and which responds to a requirement of the EU Waste Stream Work Directive. These programmes are run separately in each of the Devolved Administrations.

The **Waste Prevention Programme for England** sets out the government's view of the key roles and actions which should be taken to move towards a more resource efficient economy. As well as describing the actions the government is taking to support this move, it also highlights actions businesses, the wider public sector, the civil society and consumers can take to benefit from making more efficient use of resources and preventing waste, including by addressing topics such as the need for building waste reduction into design, offering alternative business models and delivering new and improved products and services.

The Waste Prevention Programme for England and other related documents can be viewed at: <https://www.gov.uk/government/publications/waste-prevention-programme-for-england>

A newsletter providing a summary of progress on some of the main actions highlighted for government in the Waste Prevention Programme for England was published in December 2014 and can be viewed at:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/385049/wppe-1yearon-newsletter201412.pdf

The UK also published a **Resource Security Action Plan (RSAP)** in 2012, which outlines the UK policy position and a number of actions on critical raw materials and resource security. Most of the actions in it have now been completed. The Department for Business, Innovation and Skills (BIS) now holds responsibility for the policy, while Defra has a watching brief. This RSAP can be viewed at:

<https://www.gov.uk/government/publications/resource-security-action-plan-making-the-most-of-valuable-materials>.

Northern Ireland

To date Northern Ireland has not had a dedicated resource efficiency strategy. However:

The Northern Ireland **Waste Management Strategy** "Delivering Resource Efficiency", published in October 2013, sets the policy framework for the management of waste in Northern Ireland, and contains actions and targets to meet EU Directive requirements and the Department's Programme for Government commitments. Link: http://www.doeni.gov.uk/wms_2013.pdf

The **Northern Ireland Waste Prevention Programme** “The Road to Zero Waste”, published in September 2014, sets out to decouple economic growth from the environmental impacts associated with waste generation; encourage people to use resources efficiently and generate less waste; and establishes improved resource efficiency and waste prevention as an integral part of business management and project planning. Link:

http://www.doeni.gov.uk/waste_prevention_programme_for_ni_2014-2.pdf

Scotland

The Scottish Government’s 2013 strategy, “Safeguarding Scotland’s Resources” sets out Scotland’s approach to resource efficiency, as per its subtitle – “Blueprint For A More Resource Efficient And Circular Economy”: <http://www.gov.scot/Publications/2013/10/6262>

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<http://www.resourceefficientscotland.com/content/about-us>

Scotland’s forthcoming circular economy strategy will cover all “loops” of the Circular Economy from design to reuse/repair to recycling; and also how best to manage “leakage” via energy from waste and landfill. The strategy will encompass biological and technical materials and products.

Wales

Wales does have a dedicated resource efficiency strategy. ‘Towards Zero Waste’ is the overarching waste strategy for Wales. Please see link:

http://gov.wales/topics/environmentcountryside/epq/waste_recycling/zerowaste/?lang=en

The **Waste Prevention Programme** is one of a suite of documents which underpin the waste strategy. Other supporting documents include **sector specific plans** (the Industrial and Commercial Sector Plan, the Construction and Demolition Sector Plan, the Food, Manufacturing and Retail Sector Plan and the Municipal Sector Plan), a **general infrastructure plan** (the Collections, Infrastructure and Markets Sector Plan) and a developing **Position Statement** (the Agricultural Sector Position Statement) which together constitute a waste management strategy which incorporates resource efficiency actions.

The strategy sets out a long term framework for resource efficiency and waste management between now and 2050. It identifies the outcomes we wish to achieve, sets high level targets and lays out our general approach to delivering these targets and other key actions.

Furthermore:

England

We recognise the importance of a sustainable economy. A key priority for the UK Government is to boost growth in the economy while continuing to improve the environment.

Working with business to deliver a sustainable, resource efficient economy is embedded across government. Defra works closely with other Departments in delivering these aims. For example the Government has set up the **Green Investment Bank** to lever in private sector funding, with priority sectors including waste infrastructure, offshore wind; the **Green Deal** to help business and home owners to employ more green technologies in their properties without having to pay costs up-front and where - unlike a conventional loan - the bill stays with the property and not with the bill payer if the owner vacates the property); and non-domestic energy efficiency.

The Government (BIS) also funds **Innovate UK**, an organisation that funds, supports and connects innovative businesses to accelerate sustainable economic growth. It has a strong resource efficiency and circular economy element in its work.

Defra is also funding, and working with, WRAP to deliver a wide range of resource efficiency activities. More information on **WRAP's work on material resource efficiency** can be found here: <http://www.wrap.org.uk/category/subject/resource-efficiency-0>

Northern Ireland

Northern Ireland has other relevant strategies and plans that relate to material resource efficiency, including the Northern Ireland **Sustainable Development Strategy** "Everyone's Involved", which was adopted by the Northern Ireland Executive in May 2010. It sets out principles and strategic objectives to ensure socially responsible economic development while protecting the resource base and the environment for future generations. Link: http://www.ofmdfmi.gov.uk/sustainable-development-strategy-lowres__2_.pdf

Scotland

The Scottish Government's overarching "**Scotland's Economic Strategy**" includes a commitment to resource efficiency and working towards a more circular economy: <http://www.gov.scot/Publications/2015/03/5984>

Zero Waste Plan:

<http://www.gov.scot/Publications/2010/06/08092645/0>

National Litter Strategy - Towards a Litter-Free Scotland:

<http://www.gov.scot/nationallitterstrategy>

Low Carbon Scotland - Meeting our Emissions Reduction Targets 2013-2027

<http://www.gov.scot/Publications/2013/06/6387>

Wales

Wales has other national policies and strategies which address material resource efficiency in the actions and policies. They are:

One Wales: One Planet

<http://gov.wales/docs/desh/publications/090521susdev1wales1planeten.pdf>

Food for Wales, Food from Wales 2010-2010 – Food strategy for Wales

(<http://gov.wales/topics/environmentcountryside/foodanddrink/foodandmarketdevelopmentpubs/foodstratdoc/?lang=en>)

Climate Change Strategy

(<http://gov.wales/topics/environmentcountryside/climatechange/publications/strategy/%3Bjsessionid=Yb6vTd1hbpJbTfdvT75jSLZB0p6DQw6x4LILR22h2Tpv1vJ7wXJ!-630957411?lang=en>)

Water Strategy

(<http://gov.wales/topics/environmentcountryside/epq/waterflooding/publications/water-strategy/?lang=en>)

Fly-tipping Strategy

<http://gov.wales/topics/environmentcountryside/epq/waterflooding/publications/water-strategy/?lang=en>

Innovation strategy

(<http://gov.wales/topics/businessandconomy/innovation/innovation-strategy-wales/?lang=en>)

ERDF Operational Programme

[https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/342297/ERDF Operational Programme.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/342297/ERDF_Operational_Programme.pdf) and

<http://wefo.gov.wales/programmes/europeanstructuralfunds/westwalesop?lang=en>

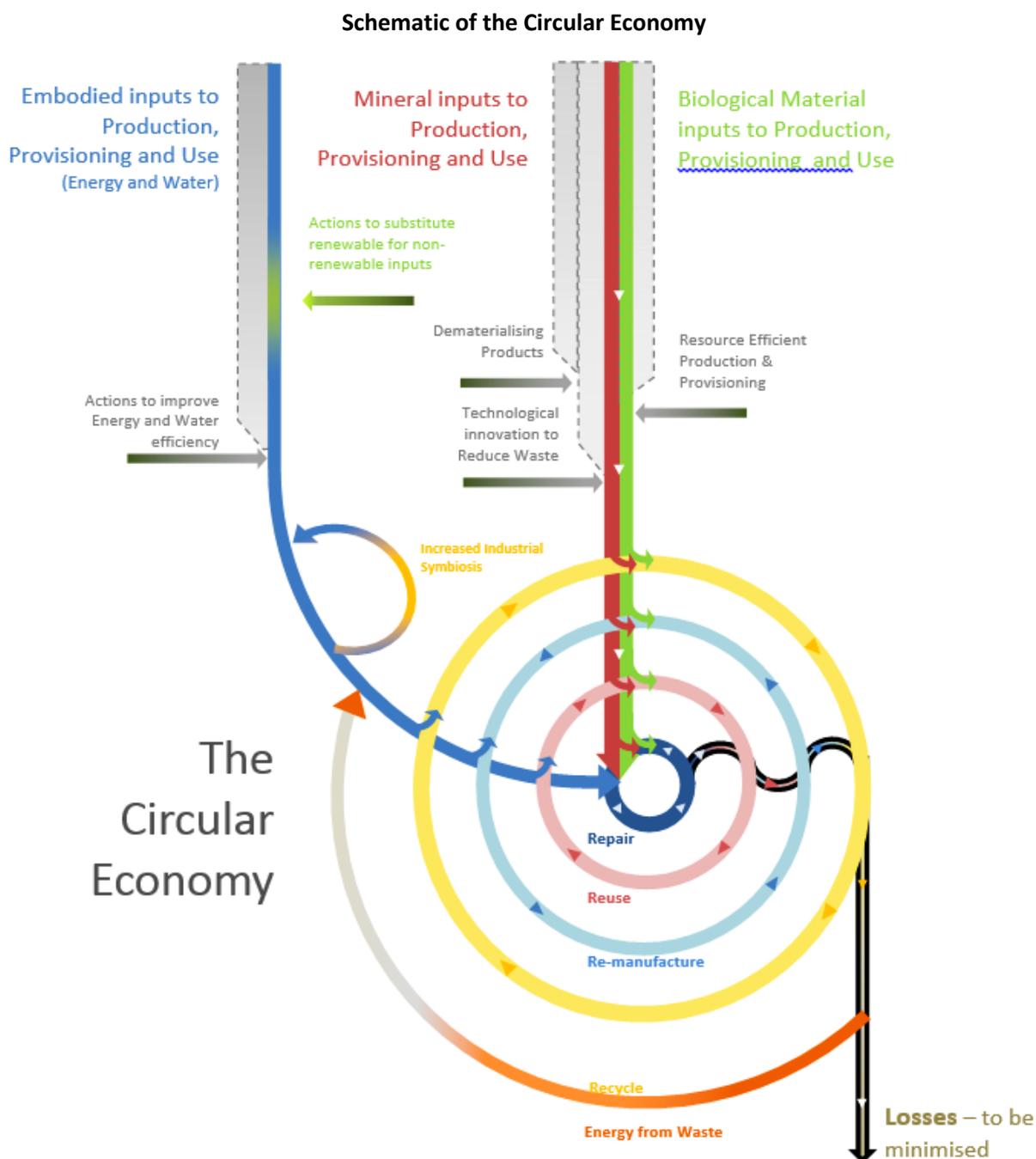
The circular economy and closing material loops

United Kingdom

Becoming increasingly mainstreamed in the UK economy, the circular economy model recognises the importance of improving resource productivity, where resources are kept in circulation and valued to their full extent. While not a new concept, we have already begun to move towards a circular system; such as by reducing the amount of material going into a product (e.g. light-weighting of glass bottles) or by increasing product durability. We have defined the circular economy as:

“...moving away from our current linear economy (make – use – dispose) towards one where our products, and the materials they contain, are valued differently; creating a more robust economy in the process.”

This concept sets out preferential loops where repair and reuse is the ‘tightest’ of resource loops, followed by re-manufacturing and recycling – as shown in the diagram below. It is aligned with the aim of moving waste up the hierarchy, whether preventing waste from arising through improved design, repair or reuse of products, or away from landfill to more environmental beneficial and higher value uses. It also recognises that this provides the greatest mitigation of resource security risks and is likely to capture the most value from the materials embedded within a product.



Key drivers for a more circular economy

Over the coming decades, effective waste and resource management will continue to increase in importance. Key drivers include:

- Reducing the environmental impacts of material extraction and disposal through the greater reuse, recycling and recovery of materials;
- Rising energy and water prices, which will mean that the relative benefits of reusing products or recycling materials will increase;
- Increasing economic resilience to volatile and, over the longer term, increasing resource prices; and
- Promoting the security and diversity of supply of priority materials.

GOVERNMENT INTERVENTION:

England

The way in which waste is managed has changed dramatically over the last twenty years in the UK. We have seen a major decrease in waste being disposed of in landfill and an increase in recycling. This has largely been driven by regulation, where the waste management and secondary materials market is governed by and, in many respects, created by regulation, essential to protect the environment and human health from the adverse impacts of waste. There are a number of EU Directives which provide a framework for legislation and have been transposed into UK law. Businesses and industry (and local authorities) which produce or handle waste, including importing, producing, carrying, transferring, keeping, treating or creating energy and products from waste, must comply with this legislation.

There is a case for Government intervention to facilitate the transition towards a more circular economy, where the market alone does not produce the optimal situation. This includes encouraging collaborative and partnership working and promoting technological innovation and infrastructure that is needed to underpin and push the boundaries to deliver real change. This will in turn provide certainty for investment and a level playing field that support legitimate businesses. A good example of this is the landfill tax escalator, which created a strong incentive and provided long term certainty that drove industry action and diverted waste from landfill towards much greater reuse, recycling and recovery of waste materials. Current actions that we are taking to support this transition include:

- funding and supporting Action Based Research projects to explore issues such as: innovative ways to encourage SMEs to be more resource efficient; product longevity for high impact products; reuse and repair systems for household appliances; and the benefits of new business models where the consumer purchases the use of a product rather than the materials.
- working with Environment Agency in the performance of its regulatory duties on waste activities and in tackling waste crime and poor compliance.
- working with and funding the Waste and Resources Action Programme (WRAP) to support businesses, civil society organisations, local authorities and households become more efficient in the way that they manage and use resources. For example, working with WRAP to develop an Electrical and Electronic Equipment Sustainability Action Plan (esap) to catalyse sector action; including on extending product durability, increasing reuse and recycling, and implementing alternative business models.

Northern Ireland

The Northern Ireland Waste Management Strategy “Delivering Resource Efficiency” in October 2013 includes a coherent framework of policies, legislation and mechanisms to promote and increase resource efficiency.

In February this year, the Food Waste Regulations (Northern Ireland) 2015 came into operation and prohibited the landfill of separately collected food waste from 1 April 2015. In addition, from 1 April 2016 large producers of food waste will have to take measures to ensure the separate collection of their food waste. The Regulations will also require district councils to promote the separate

collection of food waste and to provide receptacles to householders for the separate collection of food waste by 1 April 2017. This legislation will not only increase the amount of recycled food waste collected but the separate collection will also improve the quality and hence its value for conversion to an energy source or as compost.

The Department's Rethink Waste Programme is used as a delivery mechanism for the strategy. The Programme provides a variety of incentives to help increase levels of recycling. These range from the provision of financial assistance through to technical advice and communications. Since 2010 Programme has provided over £17.5 million in funding for new, or improved, re-use and recycling infrastructure and services; communications and advertising campaigns; education; and other initiatives, in order to increase waste prevention, re-use and, recycling projects, and divert waste from landfill. Local government, the Third sector, and private sector has benefited from the funding.

Scotland

The Scottish Government is committed to facilitating the move towards a more circular economy and a consultation on a new strategy closed in October 2015. A new Strategy is expected to be launched in 2016. Key early actions include:

- A circular economy evidence programme to identify opportunities and potential actions.
- Establishing the Scottish Institute for Remanufacture, one of only four worldwide, to bring together business and academia to nurture this important sector.
- Establishing the Scottish Materials Brokerage Service to deliver contracts of sufficient scale and duration to stimulate domestic reprocessing.
- Our "Code of Practice on Sampling and Reporting at Material Recovery Facilities" designed to improve recycle quality and drive up demand for clean, consistent, high quality recycle.
- Developing a national food waste reduction target, announced in October 2015

Wales

The Welsh Government is starting to leverage some of the value of a circular economy through the focus on Sustainable Development as a core organising principle of government. This committed to a vision of, amongst other things, building a 'resilient and sustainable economy' and supporting 'healthy, biologically diverse and productive ecosystems' through serving citizens with an emphasis on the long term.

Wales's overarching waste strategy, **Towards Zero Waste**, cites 'closed-loop recycling whereby materials are re-used for their original purpose', and the 'high levels of clean, high quality, source-separated recyclates to drive the market' and supply to Welsh manufacturing.

We have a number of actions that helps drives closed loop recycling. For example,

- (i) statutory targets of 70% recycling are set for municipal waste collected by local authorities,
- (ii) anaerobic digestion facilities set to generate renewable energy and fertiliser from food waste. The sector plans also pursue and implement eco-design, green

procurement, resource efficient production and source separation processes – all of which would feed in to a wider move towards system optimisation and circular economy.

The sector plans can be found at:

http://gov.wales/topics/environmentcountryside/epg/waste_recycling/publication/?lang=en

The **Collaborative Change Programme (CCP)** provides Government support to local authorities in developing and delivering a business plan to meet the objectives of Towards Zero Waste as well as the EU Waste Framework Directive. This includes the delivery of higher quality recycling as well as the sharing of good practice, and support is provided by WRAP (Waste & Resources Action Programme) and the WLGA (Welsh Local Government Association). The Future Generations Wales Act 2015 takes this commitment further as well as proposals set out in the Environment Bill which could support a circular economy in Wales. Links:

The **Well-being of Future Generations (Wales) Act 2015** -

<http://gov.wales/legislation/programme/assemblybills/future-generations/?lang=en>

Environment Bill - <http://gov.wales/topics/environmentcountryside/consmanagement/natural-resources-management/environment-bill/?lang=en>

In addition to government policy, there are several organisations working within Wales whose remit resonates with creating value through a circular economy. WRAP Cymru is focused on preventing waste and promoting recycling and recovery (including reuse /preparation for reuse) and is working with both businesses and government to support these objectives, with the aim of reducing costs and increasing benefits to all sectors of society.

The aim is to develop a ‘successful closed loop economy in Wales’, and WRAP Cymru supports the Welsh Government in implementing the target of 70% recycling set in Towards Zero Waste and helps to inform the various sector plans.

Constructing Excellence Wales are focussed on reducing waste in the construction, excavation and demolition industries, through reduction at source, reuse of construction materials, and recycling (i.e. through the production of recycled aggregates). It works with both business and government to support these objectives.

General policy objectives for material resource efficiency

England

A key priority for the Government is to boost growth in the economy whilst continuing to improve the environment. Whilst the economy is turning a corner, the recovery is in its early days and many risks remain. Moving towards a more resource efficient, circular economy offers scope for innovation, sustainable growth and saving money, as well as reducing the impact on the environment. Further detail on this can be found in the Government's 2013 Waste Prevention Programme "**Prevention is better than Cure: The role of waste prevention in moving to a more resource efficient economy**" (available to download at:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/265022/pb14091-waste-prevention-20131211.pdf).

Waste prevention includes many different types of activity, each contributing to making better use of resources. Action to reduce waste arisings and increase resource efficiency should therefore be a priority for all sectors of the economy.

The **Waste Prevention Programme** for England articulates the actions for government, the wider public sector, business, civil society and consumers which together will move us towards reducing waste. The aim of the Programme is to improve the environment and protect human health by supporting a resource efficient economy, reducing the quantity and impact of waste produced whilst promoting sustainable economic growth.

We want to encourage businesses to contribute to a more sustainable economy by building waste reduction into design, offering alternative business models and delivering new and improved products and services.

Northern Ireland

The Northern Ireland **Waste Management Strategy** "Delivering Resource Efficiency" aims:

- To set a direction towards using waste as a resource more efficiently, and make it a key element in developing and promoting a low carbon, circular economy
- To prioritise waste prevention, including re-use to reduce our reliance on finite resources through introduction of a carrier bag levy
- To increase social acceptance of re-used goods through development of a voluntary quality assurance scheme
- To increase material's resource efficiency through promoting recycling of waste based on a life cycle approach. This includes introduction of separate collections of certain wastes and increasing 'closed loop' recycling through better quality recycle
- To promote and support the development of sustainable markets for recyclable materials

- To promote efficient energy recovery from residual waste in accordance with the Waste Hierarchy to deliver environmental benefits, reduce carbon impacts and provide economic opportunities
- To accelerate the reduction of biodegradable municipal waste sent to landfill through the introduction of a ban on the landfill restrictions (e.g. ban on landfilling separately collected food waste)
- To adopt the principles of Better Regulation and a risk based approach to the regulation of waste activities

Scotland

“Safeguarding Scotland’s Resources” identifies an overall aim of “Preventing waste, increasing resource efficiency and enabling a shift towards a more circular economy” to be delivered by a set of actions:

- helping businesses use resources more efficiently
- stimulating innovation and business opportunities in the reuse, refurbishment and remanufacturing sectors
- promoting sustainable product design
- improving Producer Responsibility and reducing the impacts of packaging
- improving access to information on materials and their significance to our economy or to businesses
- stimulating a culture of resource efficiency, influencing behaviour through awareness raising, education and skills development

Wales

‘Towards Zero Waste’, is a long term framework which describes the social, economic and environmental outcomes that we will aim to achieve and our contribution towards a sustainable future. It also details our high level policies, targets and principles for ‘One Wales: One Planet’.

To achieve our desired outcomes, we are working towards two key milestones:

2025: Towards Zero Waste. 2025 is an intermediate step on the way towards ‘zero waste’ which we define as an aspirational end point where all waste that is produced is reused or recycled as a resource, without the need for any landfill or energy recovery. By 2025, we will have significantly reduced waste (by 27% against a 2007 baseline) through actions on sustainable consumption and production and will manage any waste that is produced in a way that makes the most of our valuable resources.

This will mean that we will maximize recycling (at least 70%) and minimize the amount of residual waste produced (<30%), and eliminate landfill as far as possible (<5%).

2050: Achieving Zero Waste. By 2050 we will produce approximately 65% less waste than we produced in 2007, aiming to phase out residual waste through actions on waste prevention and sustainable consumption and production so that all waste (i.e. 100%) that is produced is reused or recycled as a resource (thus meeting the aspirations of the ‘zero waste’ philosophy).

Towards Zero Waste is supported by an evidence base, and is implemented through cross-sectoral and sector-specific sector plans. These are the implementation plans for the strategy. They describe the role of the sector, the Welsh Government and others in delivering the outcomes, targets and policies in Towards Zero Waste. They have been developed with sector representatives.

Sector-specific plans have been published: Municipal sector plan, Construction and Demolition sector plan, Commercial and Industrial sector plan, Food, Manufacture, Service and Retail sector plan and the draft Public Sector Waste and Resource Efficiency sector plan. The Collections infrastructure and Markets Sector Plan and the Waste Prevention Plan are cross-sectoral.

Welsh Government are working with WRAP on a programme of work to increase the amount of re-use in Wales by strengthening, enhancing and co-ordinating the existing Welsh re-use infrastructure to increase the supply of and demand for re-usable and re-used goods across all sectors. The outcome of this work shall be reported in Summer 2015.

Welsh Government are also working with Constructing Excellence Wales on a programme of work to reduce the production of waste from the construction sector and to improve reuse and recycling by the sector. This programme is ongoing.

Institutional setup and stakeholder involvement

Institutional set up for material resource efficiency policies

England

The **Resource Programme Steering Group** (England only) was established as a Defra-led cross-Whitehall group to ensure that across interested and key Government Departments, there is a mutual understanding of resource use and management policy and the contribution it makes to Government objectives.

The Resource Programme Steering Group meet on a quarterly basis and aims to:

- provide a steer on any resource decisions that need to be taken and what impact a course of action will have on Government and other external stakeholders;
- update relevant parties on recent developments within the resource programme, how sustainable resource policy contributes to Government priorities, in particular looking at growth, public perception (how the public view the way Resource issues are addressed and dealt with, what are their key concerns) and importantly protecting public health; and
- provide a forum for discussion about resource policy and any issues relating to the area.

In addition we work with Environment Agency, in the performance of its regulatory duties on waste activities and in tackling waste crime and poor compliance, and with WRAP to support businesses, civil society organisations, local authorities and households become more efficient in the way that they manage and use resources.

There is also considerable contact on a day-to-day basis between Defra policy officials and their counterparts in other Government Departments, particularly the Department for Business, Innovation and Skills (BIS) and Defra also regularly consults with the Department for Energy and Climate Change (DECC) and the Department for Communities and Local Government (DCLG). There is also regular engagement with counterparts in Scotland, Wales and Northern Ireland.

Northern Ireland

Within Northern Ireland the Department of the Environment leads on waste policy and the Department of Enterprise, Trade and Investment leads on energy and minerals policy. The Office of the First Minister and Deputy First Minister leads on sustainable development policy.

Scotland

The Scottish Government is working in partnership on this agenda with the Scottish Environment Protection Agency, Zero Waste Scotland and Scotland's Enterprise Agencies.

The Scottish Government has also been working collaboratively with Local Government and the Convention of Scottish Local Authorities on developing proposals for more consistent household recycling collections.

Wales

We have a dedicated Waste and Resource Efficiency Division in Welsh Government which we work closely with other divisions such as water, energy and economy. We are all based in one directorate where we work with each other and liaise closely.

We work closely with Natural Resources Wales in the performance of regulatory duties and with WRAP, Constructing Excellence in Wales. Please see their links:

Natural Resources Wales: <https://naturalresources.wales/>

WRAP Cymru: www.wrapcymru.org.uk/

Constructing Excellence in Wales: www.cewales.org.uk/waste/

Process to ensure stakeholder participation

England

Sustainable Resource Management Forum: This is a bi-annual Defra led meeting with external stakeholders, made up of Resource sector industry, trade bodies and other related organisations. The meeting is chaired at Director level. The membership of the group is aimed at senior level and hosted by Defra in London. Its purpose is to enable regular communications between the sector and government. Examples of topics that have been discussed at recent meetings of the Forum are: growth analysis of the waste sector and discussion on improving recycling rates. The meeting is also an opportunity for updates from each side.

There is also considerable contact on a day-to-day basis between Defra policy officials and a range of business, trade and NGO stakeholders.

Northern Ireland

There is regular contact between Departments, agencies, NGOs, local councils, the waste management sector, and other organisations and businesses connected to waste prevention, resource efficiency and the circular economy. In particular:

Waste Programme Board. The Waste Programme Board was established in September 2010 and is a non-statutory advisory committee chaired by the Minister of the Environment. The Board acts as a forum for oversight and strategic overview of implementation, and provides a means of holding to account the various responsible delivery bodies. Members include the Department, local government, NGOS and business representation.

Waste Co-ordination Group. The Waste Co-ordination Group (WCG) is a non-executive advisory Group, established to support the objectives and remit of the Waste Programme Board. It provides a forum for the discussion of key operational and policy issues pertinent to the statutory responsibilities of public sector waste and resource management bodies and facilitates the co-ordinated delivery of those responsibilities. The WCG is chaired by the DOE Deputy Secretary, Environment and Marine Group, and is comprised of lead officials and officers from Central and Local Government.

Waste Prevention Forum. The forum provides an opportunity for engagement between the central government, local government, NGOS, the Third Sector, charities and business (especially reuse and repair organisations). business, trade and NGO stakeholders.

Scotland

An example of Scotland's work to ensure stakeholder participation is their Zero Waste Taskforce, whose membership includes the Convention of Scottish Local Authorities (COSLA), the Scottish Government, Zero Waste Scotland, Scottish Enterprise, the Scottish Environment Protection Agency (SEPA), the Highlands and Islands Enterprise (HIE), the Society of Local Authority Chief Executives and Senior Managers (SOLACE) and Scotland Excel. The Taskforce has proposed a household recycling charter to make it easier for people to recycle, with consistent systems. Further details are available here: <http://news.scotland.gov.uk/News/New-dawn-for-recycling-edges-closer-1a99.aspx>

Wales

There is regular contact between Departments, agencies, NGOs, local councils, the waste management sector, and other organisations and businesses connected to waste prevention, resource efficiency and the circular economy.

We have a Ministerial Programme Board which consists of local authorities' representatives, Welsh Local Government Association and internal departments within Welsh Government.

Link:

http://gov.wales/topics/environmentcountryside/epg/waste_recycling/infrastructure/programmeoffice/?lang=en

Suggestions for international support mechanisms to exchange experience

All of the following can be very useful:

- EEA related events
- Commission meetings (e.g. inter alia Commission chaired meetings on resource efficiency, eco-innovation, eco-labelling, sustainable consumption and production, Environmental Technology Verification, ad hoc bilateral meetings with Commission officials)
- EU funded initiatives such as DYNAMIX and POLFREE
- Other relevant workshops, conferences and meetings (e.g. organised by IEEA, OECD)
- Meetings linked to international agreements e.g. Basel Convention
- UNEP meetings. In particular, global meetings in NY and meetings related to 10YFP programmes. UK is a member of the Multi-Stakeholder Advisory Committee for the Consumer Information Programme. Someone from Defra's Resource Efficiency Team is the UK representative on that Committee. In addition the UK national focal point and the alternative national focal point for UNEP are both in that team.

Policy instruments

Policy instruments commonly used for material resource efficiency

United Kingdom

Economic/Financial instruments

For example, the landfill tax escalator, which created a strong incentive and provided long term certainty that drove industry action and diverted waste from landfill towards much greater reuse, recycling and recovery of waste materials.

Voluntary Agreements

There are some good examples of voluntary agreements operating in the UK, with all 4 administrations working with and funding the Waste and Resources Action Programme (WRAP) to support businesses, civil society organisations, local authorities and households become more efficient in the way that they manage and use resources. Voluntary agreements exist for clothing, food and packaging and electrical products.

The Hospitality and Food Service Agreement was launched in 2012. It is a voluntary agreement between the UK and devolved administrations and the hospitality and food service sector, which

includes restaurants, hotels, caterers and pubs. The purpose of the agreement is to support the sector in preventing food waste and recycling more. It has a waste prevention target for signatories to reduce food and packaging waste by 5% by the end of 2015. This will be against a 2012 baseline and be measured by CO₂e emissions. It has a further waste management target to increase food and packaging recycling rates (including composting and sending to anaerobic digestion) to 70% ; and

The Courtauld Commitment was set up in 2005. WRAP is working with food manufacturers and retailers to meet targets to reduce food and package waste from the grocery supply chain. Signatories reported a reduction of 7.4% in supply chain waste between 2009 and 2012, with interim results for the latest phase of Courtauld showing a further 3.2% reduction by 2014. WRAP is currently brokering a new agreement, Courtauld2025, which is expected to start in early 2016 and will build on this progress. This will be a new voluntary agreement with a wider scope than previous agreements. The focus will include helping businesses to waste less and share efficiency savings along supply chains.

Textiles/clothing - WRAP is co-ordinating the **Sustainable Clothing Action Plan (SCAP)**. At the end of November 2015 SCAP had 47 signatories representing 50% of clothes sold in the UK by sales, volume and value, and 35 supporters. The Plan aims to improve the sustainability of clothing sold in the UK. It brings together industry, government and the third sector to reduce resource use. The SCAP 2020 targets, which were launched in February 2014 aimed to reduce carbon, water and waste to landfill by 15%, and reduce waste arising by 3.5%. A progress update on these targets was issued on 5 November <http://www.wrap.org.uk/SCAPprogressupdate>. It showed signatories had reduced water impacts by 12.5% and cut carbon impacts by 3.5% reduction per tonne of clothing against the 15% reduction targets. The level of waste arising has remained stable. WRAP is working with industry to reduce waste to landfill by 15%, and progress against this target will be reported in 2016. The European Clothing Action Plan, announced in October and in which WRAP plays a leading role, aims to extend the SCAP approach to a pan-European framework.

Electricals - By November 2015 70 organisations from across the UK electricals sector had signed up to the **Electrical and Electronic Equipment Sustainability Action Plan (esap)**. Esap is a voluntary agreement which seeks to catalyse sector action, share evidence and bring together the many different stakeholders to provide tangible economic and environmental benefits. This work is being led by WRAP on behalf of UK governments and will help organisations that design, manufacture, sell, repair, re-use and recycle electrical and electronic products to work collaboratively across the product life-cycle.

Esap will take specific actions, by product category, across five themes:

- Extending product durability through design and customer information
- Minimising product returns
- Understanding and influencing consumer behaviour on product durability and reparability
- Implementing profitable, resilient and resource efficient business models
- Gaining greater value from re-use and recycling

England

Regulatory

For example the Materials Recovery Facility Regulations 2014 to improve quality of recyclate. The law requires operators of MRFs processing more than 1,000 tonnes per annum to test the composition of samples of the material they put into the sorting process, and the useable output. The regulations are intended to increase recyclate quality from MRFs to 'help stimulate the market conditions necessary to improve the quality of the material produced by MRFs so that it can be more readily recycled', as required under the European revised Waste Framework Directive.

Financial Assistance

For example, as set out in the Waste Prevention Programme for England we will improve access to finance for businesses, through improving the information available to banks, enabling them to promote the business benefits of investment in resource efficiency, particularly for small and medium-sized businesses and by continuing the £1.5 million Waste Prevention Loan Fund.

We have provided Government support for innovative waste prevention projects through the Innovation in Waste Prevention Fund, a scheme to support communities in taking forward innovative waste prevention, reuse and repair actions in their local areas working in partnership with others. In 2014 and 2015 we ran two successful funding rounds providing over £500,000 in match-funding to sixteen novel waste prevention partnership projects. Details of the projects being funded are available on the WRAP website at <http://www.wrap.org.uk/content/innovation-waste-prevention-fund-england>. **Information-based instruments**

The Waste and Resources Action Programme has published a range of material, tools and guidance to encourage increased waste prevention including a Household Waste Prevention Hub for local authorities which went live in May 2015. The local authority hub includes guidance on-line tools to help monitor and measure the results of waste prevention activities. See <http://www.wrap.org.uk/content/household-waste-prevention-hub>

For example, developing a £800,000, two-year scheme to support communities to take forward innovative waste prevention, reuse and repair actions in their local areas, working in partnership with local businesses, authorities and civil society groups. We will also continue to support local authorities and others to communicate effectively by providing guidance and communications materials which they can use to promote action in their local areas. And we will work with others to promote resource efficiency and waste prevention in schools and higher education.

Carrier Bag Charge

A new law now requires large shops in England to charge 5p for all single-use plastic carrier bags. Charging started on 5 October 2015. The scheme aims to reduce the use of single-use plastic carrier bags, and the litter associated with them, by encouraging people to re-use bags.

Research

For example, funding and supporting Action Based Research projects to explore issues such as: innovative ways to encourage SMEs to be more resource efficient; product longevity for high impact products; reuse and repair systems for household appliances; and the benefits of new business models where the consumer purchases the use of a product rather than the materials.

Through Innovate UK's investment of up to £5 million in **collaborative research and development** and their **design challenges for a circular economy competition** (£1.5 million) we are supporting innovation in design.

Improving information flow

This includes providing increased support to businesses, particularly SMEs, who do not have the capability, capacity or knowledge to respond to the opportunities presented by adopting more circular business models. In addition, improving the collection and availability of data on waste arisings and movement of waste will enable businesses to better extract value from the waste available.

Greater enforcement

For example, responding to calls from the industry for speedier and tougher enforcement action by the Environment Agency to ensure that there is a level playing field. Working together with the Environment Agency, we secured £4.2million in additional funding in the 2015 Budget to tackle waste crime. Further action is needed to not only ensure that the environment is protected but also that rogue operators do not undercut legitimate businesses.

Public Procurement

For example, by ensuring that whole life value for money is taken into account in central government procurement decisions, which will include bringing waste prevention and reuse criteria within Government Buying Standards and piloting a cross-government scheme to enable exchange and reuse of goods across departments. The wider public sector will be encouraged to do the same through central government leading by example.

Northern Ireland

Regulatory

For example, The Northern Ireland Department of the Environment has made The Food Waste Regulations (Northern Ireland) 2015 which came into operation on 14th February 2015. The regulations provide for the separate collection and subsequent treatment of food waste and requires district councils to provide receptacles for the separate collection of food waste from households, places a duty on food businesses producing in excess of 5kg of food waste per week to present food waste for separate collection and places a duty on businesses to ensure food waste is not deposited in a lateral drain or sewer. The regulations place a duty on those who transport food waste to collect and transport such waste separately from other waste to ensure that separately

collected food waste is not mixed with other waste to the extent that would hamper future recycling. The landfilling of separately collected food waste is prohibited from 1 April 2015.

Voluntary

Prosperity Agreements - The Northern Ireland Environment Agency (NIEA) has taken a new approach to help meet strategic goals on resource efficiency and environmental impact. Through its Prosperity Agreement programme, NIEA supports responsible businesses to move beyond minimum compliance and towards harnessing value from innovation, particularly in energy use and resource management. Prosperity Agreements are voluntary partnerships that seek to improve the relationship between the NI environmental regulator and key stakeholders whilst facilitating mutual gains in economic and environmental performance. Two examples are presented in the next section.

Information-based instruments

In Northern Ireland the Eco-Schools programme was developed in 1994 on the basis of the need for involving young people in finding solutions to environmental and sustainable development challenges at the local level, as identified at the UN Conference on Environment and Development of 1992. The programme was initiated by Member organisations of the Foundation for Environmental Education with the support of the European Commission. In Northern Ireland, the Eco-Schools Programme is operated by Keep Northern Ireland Beautiful, an environmental charity, and is supported by commercial sponsorship, the Department of the Environment and other organisations.

The programme aims to make environmental awareness and action an intrinsic part of the life and ethos of a school. Eco-Schools endeavours to extend learning beyond the classroom and develop responsible attitudes and commitment, both at home and in the wider community. The programme covers 10 topics: waste; litter; energy; water; transport; healthy living; biodiversity; climate change; school grounds; and global perspective.

Carrier Bag Charge

For example, in 2012 Northern Ireland shoppers used an estimated 300 million single use carrier bags. To tackle this problem the Department of the Environment introduced a 5 pence single use carrier bag levy on 8 April 2013. Following the successful introduction of the levy, the number of single use carrier bags fell by 72% to 84.5 million single use bags in 2013/14 – a saving of over 215 million carrier bags in the first year alone (http://www.doeni.gov.uk/carrier_bag_levy_-_annual_statistics_2013-14.pdf). Within 5 years of its launch the levy is expected to have reduced local carrier bag consumption by over 1 billion units. The Department extended the 5 pence levy to low cost reusable carrier bags in January 2015 – the first part of the UK to apply a levy to these types of bags – with the aim of maximising the overall benefit to the environment through increased resource efficiency. In addition to dramatically reducing the number of carrier bags used in Northern Ireland, the levy generated £3.7 million for local environmental projects in its first year of operation.

Scotland

The Waste (Scotland) Regulations 2012 are key to Scotland achieving its target of 70% recycling of all waste by 2025. Key points to note are as follows:

- The regulations require separate collection.
- All businesses are to present key recyclable materials (paper, card, metals, plastic and glass) for collection from 1 January 2014.
- Local authorities are required to provide householders with a collection service for dry recyclables, from 1 January 2014.
- A ban on material collected separately for recycling going to landfill or incineration, from 1 January 2014.
- A requirement to remove key recyclables (plastics and metals) from residual waste prior to incineration, from 1 July 2012.
- Food waste businesses producing over 50kg of food waste per week must present it for separate collection from 1 January 2014 - first UK country to introduce this.
- Food waste businesses producing over 5kg of food waste per week to present it for separate collection from 1 January 2016 - first UK country to introduce this.
- Local Authorities must start rolling out a food waste recycling service to all non-rural households from 1 January 2014, to be complete by 1 January 2016.
- A ban on the use of macerators to discharge food waste into the public sewer from 1 January 2016.
- A ban on municipal biodegradable waste going to landfill by 1 January 2021 - only UK administration to make this statutory.

Over 60% of households in Scotland now have access to a food waste service.

MRF Code of Practice

Scottish Material Reclamation Facility (MRF) Code of Practice came into force in April 2015. This applies to facilities that receive 1000 tonnes or more of dry recyclables and aims to improve the quality of materials processed through qualifying facilities by developing standardised testing processes and reporting mechanisms for all input and output materials.

Economic/Financial instruments

Scottish Landfill tax – Landfill Tax was devolved to Scotland in April 2015. The aim of the tax is to encourage waste reduction and recover more value from waste. Some funding from the tax is invested via the Scottish Landfill Communities Fund.

Carrier Bag Charge

Scottish Single Use Carrier Bag Charge – was introduced in October 2014, to encourage the re-use of bags and reduce the 800 million bags that Scottish shoppers used per year. A recent analysis of the first year impact has suggested a reduction around 80%, resulting in over 650 million less bags being distributed.

This results in less resources being consumed, less opportunity for these items to become litter and an opportunity to change public behaviour in other areas of their lives, encouraging re-use and options to prevent the need for disposal products.

Financial Assistance

Around £120 million has been invested in Zero Waste Scotland since 2011-12 to deliver on the Scottish Government's resource efficiency and circular economy priorities. This includes £25 million to support the introduction of food waste collections and a £3.8 million Scottish Recycling Fund.

Research

A package of research quantifying the business benefits of the circular economy for Scotland and specific sector information has been undertaken to uncover potential for circular economy benefits in key areas such as Biotechnology, reuse, energy sector, Food and Drink, and remanufacturing.

Improving information flow

Resource Efficient Scotland was established to provide a one stop shop on resource efficiency for business, with a primary focus on SMEs and priority sectors.

Wales

We consider the following policy instruments crucial in improving material resource efficiency:

- Packaging Regulations
- Landfill Allowance Scheme
- Landfill Tax (powers of which will be devolved to Wales in 2017-18)
- Statutory Recycling Targets.

Other policy instruments have also proved effective in increasing recycling rates and improving waste management. They are:

- Strategic Waste Management Grant - provided c£600+ million in annual ring fenced funding to our local authorities since 2002
- Provided funding to WRAP, Constructing Excellence in Wales, Eco-Design Centre, Waste Awareness Campaign, Advice & support (Resource Efficiency Wales)
- Municipal food waste treatment (AD) procurement programme
- Set up and funded the Collaborative Change Programme
- Environment Bill provisions to increase the recycling of business and public sector waste
- Published the Collections Blueprint for local authorities – recommending that they follow a kerbside sort approach

Examples of good practice

England

Action Based Research (ABR) Programme: ABR is one approach that can help us to understand these issues by providing policy-makers with opportunities to work in partnership with business, academics and civil society organisations to study real world activity and “learning by doing”.

ABR is an approach that uses a combination of research, participation and action to solve a social problem. It is an iterative process, which aims to improve a situation or practice through collaboration between researchers and practitioners through action in practical or real environments (such as in a business or a community). It requires the implementation of change and the continuous analysis and reflection of changes that have been implemented.

We are currently funding and supporting Action Based Research projects to explore issues such as: innovative ways to encourage SMEs to be more resource efficient; product longevity for high impact products; reuse and repair systems for household appliances; and the benefits of new business models where the consumer purchases the use of a product rather than the materials.

Royal Society of Arts and Manufacturing (RSA) Great Recovery Project: The current economic and environmental challenges of take, make, dispose manufacturing are becoming apparent. Increasing supply risk and rising costs of materials is putting pressure on businesses to change. We need to shift towards more circular systems and good design thinking is pivotal to this transition. The Great Recovery is building new networks to explore the issues, investigate innovation gaps and incubate new partnerships. The project is a RSA project, working in partnership with Innovate UK.

Pilot Resources Dashboard: The Dashboard was developed by the Knowledge Transfer Network (KTN) and launched in July 2013. It is designed to help business understand the risk and issues around the availability of resources, and what they can do in response. The KTN have recently focused on methodologies for assessing supply chain risks for the Dashboard and are considering, next steps, exploring future funding opportunities. The Dashboard can be viewed at this link: <https://connect.innovateuk.org/web/the-resource-dashboard>

Northern Ireland

Carrier Bag Levy:

In 2012 Northern Ireland shoppers used an estimated 300 million single use carrier bags. To tackle this problem the Department of the Environment introduced a 5 pence single use carrier bag levy on 8 April 2013. In-house ICT staff developed a bespoke IT system, enabling retailers to register online and make electronic returns and secure payments to the Department (<https://www.nicbl.doeni.gov.uk>), minimising paperwork and administration overheads for retailers

and staff. Retailers only need to take a few minutes each quarter to submit their return. A “one-stop-shop” website (www.nidirect.gov.uk/baglevy) was established and includes downloadable posters for retailers to display in store, animated information videos, guidance and legislation.

The Communication Team hosted a live Carrier Bag Levy “twitter-chat” as part of the broader communication campaign, giving citizens the opportunity to tweet questions and comments with real time responses from officials. Following the successful introduction of the levy, the number of single use carrier bags fell by 72% to 84.5 million single use bags in 2013/14 – a saving of over 215 million carrier bags in the first year alone (http://www.doeni.gov.uk/carrier_bag_levy_-_annual_statistics_2013-14.pdf).

Within 5 years of its launch the levy is expected to have reduced local carrier bag consumption by over 1 billion units. The Department extended the 5 pence levy to low cost reusable carrier bags in January 2015 – the first part of the UK to apply a levy to these types of bags – with the aim of maximising the overall benefit to the environment through increased resource efficiency. In addition to dramatically reducing the number of carrier bags used in Northern Ireland, the levy generated £3.7 million for local environmental projects in its first year of operation. Northern Ireland is the only part of the UK to collect such a levy and distribute it to environmental projects in this way. The levy has been broadly welcomed by both retailers and shoppers – with surveys indicating that 80% of retailers support the levy.

Prosperity Agreement:

To date, two Prosperity Agreements have been signed. The first, launched in August 2014, is with Linden Foods and Linergy, part of a group of progressive Agri-food companies. Linden Foods process top quality beef and lamb delivering a range of own label value added products to retailers and manufacturers. Linergy operates a state of the art rendering facility using animal by-products and fallen farm animals to produce renewable biomass fuel, tallow oil and meat and bone-meal.

Linergy and Linden Foods will continue to meet environmental standards and now also move beyond minimum standards by undertaking to:

- lower carbon emissions by 25%;
- reduce energy and water use and reduce waste;
- work to influence the supply chain to improve both on farm sustainability and finished product logistics; and
- create a local stakeholder forum where key issues can be discussed constructively.

In return for these substantial commitments, NIEA will redirect internal resources away from “red tape regulation” towards actions that support Linden Foods and Linergy improve their environmental performance in their own operations and throughout their supply-chain.

The second Prosperity Agreement was signed with Lafarge Tarmac in March 2015. Lafarge Tarmac is a mineral and aggregates producer who operate globally with several sites across Northern Ireland. The Prosperity Agreement focuses mainly on its cement factory and quarry site in Cookstown.

The agreement will facilitate the innovative use of waste derived fuels to secure jobs, create prosperity and better environmental outcomes. Commitments include:

- A reduction in carbon emissions from production by a minimum of 10%;

- Improved public access to rare geological features that are found in the Ballysudden ASSI, located in the Cookstown quarry;
- Exploring options to reduce emissions from their transportation chain;
- Development of a renewable energy strategy along with options for reducing packaging; and
- Substitution of up to 35% of coal fuel usage with alternative raw materials or waste derived fuels in accordance with a code of practice developed by the Mineral Products Association (MPA).

Scotland

Scottish Institute for Remanufacture: The Scottish Institute of Remanufacture is hosted by the University of Strathclyde and run in partnership with Heriot Watt University. The £1.3m funding is over three years, with £1m from the Scottish Funding Council and £300k from Zero Waste Scotland. Companies based in Scotland have already pledged over £800k of funding, or in-kind support, for potential research projects for the Institute.

Scottish Materials Brokerage Service: will see supply and demand for high value recycling matched up, providing certainty of supply for investors and certainty of demand for local authorities. Scotland's public sector handles almost 3 million tonnes of waste materials per year. The Brokerage Service will enable the resources collected by councils to be channelled into higher value use, while providing a good deal for the public sector and improving our recycling rates.

Resource Efficient Scotland: provides a "one stop shop" for energy, material and water efficiency for businesses and the public sector. This programme, delivered by Zero Waste Scotland, provides a range of support from financial assistance to specialist information.

Carrier Bag Charge: a minimum 5p charge on all single use carrier bags was introduced in October 2014, to encourage the re-use of bags and reduce the 800 million bags that Scottish shoppers used per year. A recent analysis of the first year impact has suggested a reduction around 80%, resulting in over 650 million less bags being distributed.

England, Scotland and Wales

Developing resource efficient business models (REBus): The REBus project is led by WRAP working with a range of partners from the UK and the Netherlands – Rijkswaterstaat, the Environmental Sustainability Knowledge Transfer Network, The University of Northampton and the Aldersgate Group.

This LIFE+ funded project will demonstrate how businesses and their supply chains can implement resource efficient business models and will focus in four key markets of electrical and electronic products, clothing, furniture and construction products, working with both large organisations and

SMEs. WRAP will match the LIFE+ funding to the resource efficient business models programme being delivered for Defra, the Scottish government and Welsh government.

The REBus project aims to:

- Develop an evidence base of existing circular economy models
- Provide innovation support to businesses
- Assess the commercial feasibility of alternate, resource efficient business models
- Deliver pilots of more resource efficient business models

One REBus project launched in 2015 is a trade in service for electronic gadgets rolled out by Argos, a major UK high street retailer.

Wales

Strategic Waste Management Grant - provided c£600+ million in annual ring fenced funding to our local authorities since 2002.

A specific initiative is **Resource Efficient Wales**. This is a Welsh Government service providing people (domestic, business, community, voluntary and the public sector) with a single point of contact for support on using resources (energy, materials and water) more efficiently.

<http://resourceefficient.gov.wales/?skip=1&lang=en>

Accelerating Reprocessing Infrastructure Development (ARID) - £14 million capital support programme which ran from 2011 until 2015 to help Wales achieve its target of recycling 70% of all waste by 2025 and address areas of market failures identified in the Welsh Government's Collections, Infrastructure and Markets Sector Plan. Link: www.wrapcymru.org.uk/ARID

Case Studies by Eco-design Centre Wales at environmental initiatives in two companies in Wales. Link: www.ecodesign-centres.org/ecodesign-centre-wales-case-studies.htm

Orange box scheme: www.ecodesigncentre.org/en/edc-share-blog-tags/orangebox

Plastic bags: We introduced plastic bag legislation in 2011. Link: http://gov.wales/topics/environmentcountryside/epg/waste_recycling/substance/carrierbags/?lang=en

Targets and indicators

Targets for material resource efficiency

England

No additional targets to those in EU Directives.

Northern Ireland

In addition to EU Directive targets, the Northern Ireland Programme for Government set a target of 45% recycling and composting by 31 March 2015 (Link: <http://www.northernireland.gov.uk/pfg-2011-2015-final-report.pdf>). The intent is to set a circular economy related target for the new Programme for Government 2016/17-2020/21. The Waste Management Strategy has aspired towards setting a 60% municipal waste recycling rate target.

Scotland

The Scottish Government's target is to reduce all waste arising by 7% by 2017 against a 2011 baseline and by 15% by 2025.

Future recycling targets are 60% by 2020 (household) and 70% (all waste) by 2025.

Wales

A **waste prevention target** has been set for household waste as follows:

- A reduction of 1.2% every year to 2050 based on 2006/7 baseline.
- The target for industrial waste is a reduction of 1.4% every year to 2050 based on 2006/7 baseline.
- The target for commercial waste is a reduction of 1.2% every year to 2050 based on 2006/7 baseline. (This applies to the public sector.)
- The waste prevention target for construction and demolition waste is a reduction of 1.4% (as absolute tonnages) every year to 2050 based on 2006/7 baseline.

Waste recycling targets have been set for:

- Municipal-70% by 2024/25 – Local authorities have statutory recycling targets set under the Waste (Wales) Measure 2010
- Industrial and Commercial – 70% target by 2024/25
- Construction and Demolition – 90% target by 2019/20

Indicators to monitor use of materials and resource efficiency:

England

The waste prevention metrics and ratios of economic performance to resource (e.g. GDP/RMC) are monitored. Defra publishes a annual digest of statistics on waste and resource into one publication. The most recent digest can be viewed at:

www.gov.uk/government/statistics/digest-of-waste-and-resource-statistics-2016-edition

Some of these statistics are for the UK as a whole and others (where indicated) are just for England.

Northern Ireland

The Northern Ireland Environment Agency publishes quarterly and annual data on municipal waste arisings. These reports also include data on individual waste streams. Link: http://www.doeni.gov.uk/niea/waste-home/municipal_data_reporting.htm

The Northern Ireland Waste Prevention Programme has set two indicators:

- the amount of household waste arisings; and
- the amount of household waste arisings per unit household expenditure to assess trends relating to decoupling economic growth and waste arisings.

Commercial & Industrial Waste and Construction & Demolition Waste arisings per unit GVA will be monitored once reliable data becomes available. These will be monitored annually and published from 2016.

Scotland

In addition to the above target (see response to Q.10), Scotland's key indicators are:

- The **total amount of waste produced by sectors** - household; commerce and industry; and construction and demolition.
- The amount of **waste produced by sectors per unit of GVA**.
- The **carbon impact of waste** - the whole-life impacts of waste including the benefits of prevention and recycling.

Wales

We have published the **Towards Zero Waste progress report** which highlights our progress in meeting the actions and targets set in the strategy. The report includes data from surveys on the

industrial and commercial and the construction and demolition waste streams and also data from our quarterly reporting of municipal waste. This can be viewed at:

http://gov.wales/topics/environmentcountryside/epq/waste_recycling/zerowaste/?lang=en

Optional questions

Which way should resource efficiency go in the future?

England

A key component of boosting growth, protecting the environment and human health is developing and delivering a sustainable, resilient and resource efficient economy. With a rising global demand for material resources, the need to address environmental impacts of resource extraction, use and disposal, and the opportunities for economic growth, it is essential that we make the best use of materials and resources. This includes key resources such as glass, paper, metal, plastic, wood, minerals, chemicals, textiles, batteries, agricultural residues and discarded equipment.

Improving resource productivity is a central aim of the circular economy model, which works to maximise the lifetime and value of our products. This recognises that the things that society throws away, such as packaging, food scraps and unwanted or broken appliances, all have a potential value. In reducing the use of virgin materials and treating waste as a valuable resource, businesses can seize economic opportunities by using energy, water and resources more efficiently and reducing their exposure to fluctuating commodity prices. Indeed, Defra's 'Resource management: a catalyst for growth and productivity' report¹ has shown that the waste and resource management sector makes significant contribution to the economy, through extracting greater value from waste, improving resource efficiency and increasing exports. The relevant sectors, including waste management, recycling, re-use, repair and leasing of household goods activities, generated in £41 billion Gross Value Added (GVA) and supported around 672,000 jobs in 2013.

The circular economy concept is becoming increasingly mainstreamed in the UK economy and growing in recognition internationally. A study undertaken for Defra (2011) estimated that were £23 billion per annum of no/low cost financial resource efficiency improvements, including use of energy, water and waste, are still available to UK businesses. We are therefore keen to support the UK's transition to a more circular economy, ensuring that the right framework is in place so that businesses have the tools and the freedom to realise the benefits. This can include a number of approaches, such as fiscal incentives, targeted and effective regulation and enforcement, and improving the quality and quantity of recyclates.

¹ Published in February 2015, <https://www.gov.uk/government/publications/resource-management-a-catalyst-for-growth-and-productivity>

Northern Ireland

Northern Ireland believes that improving resource efficiency, and the innovative re-use and recycling of materials, will help society to move towards a circular economy. This approach will be a real bonus for the economy and the environment. It will provide local opportunities to develop skills and employment resulting in wider social benefits for the community. Energy will be saved, carbon emissions reduced, and materials prevented from being dumped needlessly in landfills.

The report, “Job Creation on the Circular Economy – Increasing Resource Efficiency in Northern Ireland,”² highlights the benefit of increased employment, potentially over 13,000 jobs, that emerge from a circular economy. It shows the potential of the circular economy to deliver greater employment opportunities across a range of skills to the local economy. Importantly, it shows the potential for employment opportunities across Northern Ireland.

Therefore, future resource efficiency targets and measures need to recognise quality and other societal benefits rather than solely concentrating on quantitative recycling targets that may reduce quality and divert resources away from establishing an integrated local circular economy.

Scotland

Scotland has already taken action to move towards a Zero Waste economy including:

- Waste reduction target of 15% by 2025 as part of our waste prevention strategy, Safeguarding Scotland’s Resources.
- 70% recycling rate of all material streams by 2025 as part of our Zero Waste Plan
- Legal requirement to separate out key recyclable materials and food waste from business and domestic premises
- Introducing a ban on recyclable materials going to Energy from Waste
- Introducing a landfill ban on biodegradable material from 2021
- Creating Resource Efficient Scotland, a one stop should for energy, material and water efficiency for businesses
- Introducing a minimum 5p charge on single use carrier bags in October 2014

The next stage is to move to a more Circular Economy, keeping material circulating in higher value uses for longer. Scotland was the first nation to join the Ellen MacArthur Foundation CE100 and has already taken a number of often innovative actions, including:

- Launched the Scottish Institute for Remanufacturing, to grow this strategically important sector – the first such centre in Europe and one of only 4 in the world
- Launched the ‘Scottish Circular Economy Network’, to help achieve a more circular economy, through collaboration and business-led initiatives

² Undertaken by WRAP for the INTERREG IVB ReNEW (Resource innovation Network for European Waste (ReNEW) project - <http://www.wrap.org.uk/sites/files/wrap/ReNEW%20CE%20Employment%20Report.pdf>

- Introduced a Material Reclamation Facility (MRF) Code of Practice to standardise testing, increase transparency and promote higher quality recycling
- Launched the Scottish Materials Brokerage, offering collaborative waste contracts to deliver better value and encourage investment in domestic reprocessing

There are also a range of future actions being examined as part of a Scottish Circular Economy Strategy, to be launched in early 2016, including a national food waste reduction target (one of the first in the world) and proposals to boost areas such as circular design, re-use, repair and finding high value uses of biological materials.

We recognise the value of European leadership to complement this domestic action, for example in areas such as eco-design and common targets.

Wales

Our policies, actions and targets set in 'Towards Zero Waste', the national waste strategy in Wales are based on achieving closed loop recycling in Wales which is crucial in developing the circular economy. We are working on developing the circular economy in Wales and support the EU plan to achieve these outcomes.

What are we doing?

- Preventing waste is important to develop the circular economy and we have introduced a range of measures to help achieve this. We have:-
 - set aspirational waste prevention targets for the key waste streams in our waste management plan;
 - published a Waste Prevention Programme in December 2013; and
 - funding Waste Resources and Action Programme (WRAP) to support green procurement and develop a Wales Re-use Alliance network.
- We want to see high quality recycling in Wales and we have introduced a range of interventions to make this happen:-
 - set local authority statutory recycling targets under the Waste (Wales) Measure 2010;
 - set a 70% recycling by 2025 for other key waste streams such as commercial and industrial;
 - published a Collections Blueprint for local authorities which recommend that they follow a kerbside sort approach to deliver the quality product for recycling that we need for our markets.
- We are proposing in our Environment Bill:-
 - A requirement on all businesses and public sector bodies to keep seven key recyclable materials separate at source;
 - An additional requirement for food, cardboard and wood to be collected separately;

- A ban on recyclables wastes to Energy from Waste;
- A ban on recyclable wastes to Landfill;
- A ban on the disposal of food waste to sewer.

The Well Being of Future Generations (Wales) Act places obligations on the public sector who have a duty to set and deliver objectives to achieve the goals.

Well-being of Future Generations (Wales) Act 2015 and specifically its well-being goal 'A Prosperous Wales' which says:

"A prosperous Wales. An innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change); and which develops a skilled and well-educated population in an economy which generates wealth and provides employment opportunities, allowing people to take advantage of the wealth generated through securing decent work."

Link: www.senedd.assembly.wales/mgIssueHistoryHome.aspx?IId=10103

We have provided a new core funding to our delivery providers, i.e. WRAP, Constructing Excellence in Wales, Fareshare for an additional two and a half years.

Reflections on the country's trends in the use of materials and resource efficiency

England

Defra published a compendium of statistics on waste and resource into one publication. This can be viewed at: <https://www.gov.uk/government/statistics/digest-of-waste-and-resource-statistics-2015-edition>

Wales

We have published the Towards Zero Waste progress report which highlights our progress in meeting the actions and targets set in the strategy. This report includes data from surveys on the industrial and commercial and the construction and demolition waste streams and also data from our quarterly reporting of municipal waste. This can be viewed at:

http://gov.wales/topics/environmentcountryside/epq/waste_recycling/zerowaste/?lang=en