



**AMPLIFYING ACTION ON
RESOURCE EFFICIENCY** 
EU EDITION



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ALDRSGATE GROUP

The Aldersgate Group is an alliance of leaders from business, politics and civil society that drives action for a sustainable economy in the UK and EU.

Our members include some of the largest businesses in the UK, leading NGOs, key professional institutes and politicians of all parties. We believe that economic success, both now and in the future, depends upon a political and economic framework that delivers a healthy environment and

sustainable use of resources, good environmental performance at the organisational level, growth, jobs and competitive advantage in rapidly growing environmental sectors.

Our policy proposals are formed collaboratively and benefit from the expertise of our members who span a wide range of industry sectors and public interests. Our breadth and collegiate approach allows us to formulate progressive policy positions to benefit all organisations and individuals.

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While members support this publication and provided extensive input, individual recommendations cannot be attributed to any single member and the Aldersgate Group takes full responsibility for the views expressed.



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EXECUTIVE SUMMARY

To be resilient and competitive in the long term, European businesses need a smart regulatory regime that will help them create more with less and deliver greater value with less input.

The EU has seen its resource productivity increase by more than 35% between 2000 and 2015¹, a positive trend that has started to reduce its resource scarcity risks. However, there is still room for improvement, particularly given that the region's imports outweigh its exports threefold². Circular economy is a viable (and proven) strategy for the EU to increase its resource productivity further, boost employment and competitiveness as well as curb resource dependence and waste.

The EU Commission has confirmed its commitment to the circular economy through several initiatives. The Europe 2020 growth strategy highlights a 'resource efficient Europe' as one of its flagship initiatives through which a Roadmap has been developed to set out a framework for action. The Circular Economy Package, published in December 2015, has the potential to reduce not only the volume of natural resources consumed but also the waste and emissions produced across the EU.

However, the Package's success will very much depend on the detail to be provided for the Commission's important but high-level proposals. The Commission must now prioritise action to follow through with the detail and work with progressive businesses to make this package a success. Recent announcements have shown positive momentum. This includes the new ecodesign working plan, which will apply resource efficiency principles to product design for the first time but even here more work must be done (see Chapter 2).

This report contains a range of case studies alongside its policy recommendations to highlight the need for the Circular Economy Package to deliver change that makes a practical difference on the ground. The studies are taken from several pioneering businesses amongst the Aldersgate Group membership and those taking part in the EU LIFE+ funded REBus project, of which we are a partner. Pilots taking part in the project have already seen a total of €5.62m in financial benefit, secured 62,619 tonnes in material savings and reduced greenhouse gas emissions by 1,953 tonnes³ (see Chapter 1).

¹ ➤ Eurostat (June 2016) *Material flow accounts and resource productivity*.

² ➤ Eurostat (June 2016) *Physical imports and exports*.

³ ➤ These figures are correct as of 30th November 2016. The gains from the pilot projects continue to be monitored.



In recognition of the much-needed detail still outstanding from the Package to further increase the EU's resource productivity, the Commission, with the support of the Parliament and businesses, should:

• Use its 2016–2018 ecodesign working plan to extend the scope of its ecodesign policy and incorporate resource efficient design in product standards across a gradually increasing range of products (Chapter 2)

• Strengthen its innovation framework to ensure businesses have access to both funding and expertise (Chapter 3)

• Lead by example through its own procurement practices to boost demand for circular goods and services, and encourage Member States to do the same (Chapter 4)

• Encourage and support Member States to introduce fiscal incentives, such as variable VAT rates, so that circular products and services are promoted over their counterparts (Chapter 5)

• Finalise changes to definitions of 'waste' in a way that facilitates the re-use and transportation of secondary materials and treats disposal as a last resort (Chapter 6)

• Strengthen the availability of data needed to inform and drive opportunities in resource management (Chapter 7)

Several Aldersgate Group corporate members and the businesses involved in the REBus project have already applied circular principles to their operations, reducing their environmental impact whilst improving material savings and seeing enhanced financial returns. Despite these successes, European businesses cannot make rapid progress in isolation and require an ambitious and comprehensive Circular Economy Package that will enable the transition to happen at scale.

Nick Molho
Executive Director, Aldersgate Group

Dr Steve Wallace
Director, Aldersgate Group



ONE: THE BUSINESS CASE FOR GREATER RESOURCE EFFICIENCY IN THE EU

An ambitious Circular Economy Package is a key part of building a productive and globally competitive European economy in the 21st century.

Why pursue the circular economy?

The circular economy is a practical response to apparent resource constraints and the linear 'take-make-dispose' economic model that will eventually exhaust finite stocks. It offers developed economies a pathway to resilient and environmentally sustainable growth, a systemic answer to reducing dependency on resource markets and a means of reducing exposure to the volatility of commodity prices⁴.

The EU's resource productivity has increased by 35.4% between 2000 and 2015⁵. Yet according to McKinsey, Europe lost 95% of its material and energy value whilst recovering only 5% of original raw material value through its material recycling and waste-based energy recovery activities in 2012^{6,7}. Despite improving its resource productivity, the EU still has a way to go in reducing its resource dependency and ultimately decoupling economic growth from raw material consumption.

What is the business case for taking action?

In 2013, the Aldersgate Group partnered on the REBus project (see Box 1.1), which has been working directly with businesses across the UK and the Netherlands in a range of market sectors (including electrical and electronic products, textiles, construction and ICT) that are worth an estimated €350bn across the EU.

Across its 26 pilot projects, REBus has delivered a total of €5.62m in financial benefit, whilst reducing materials consumption by 62,619 tonnes and reducing greenhouse gas emissions by 1,953 tonnes to date⁸. The businesses running pilots will continue to reap these benefits as they implement their resource efficient business models for years to come.

⁴ World Economic Forum (2014) *Towards the Circular Economy: Accelerating the scale-up across global supply chains*.

⁵ Eurostat (June 2016) *Resource productivity statistics*.

⁶ McKinsey defines the material value-retention ratio as the estimated material and energy output of the European waste management and recycling sector divided by the output of the raw material sector.

⁷ Read more: <http://bit.ly/2j3v8jN>

⁸ These figures are correct as of 30th November 2016. The gains from the pilot projects continue to be monitored.



BOX 1.1. WHAT IS REBUS?

REBus, an EU LIFE+ funded partnership project, is pioneering and testing a methodology that enables companies to transform their strategies to be more profitable, resilient and resource efficient.



The project is led by WRAP, working in partnership with the Rijkswaterstaat (Dutch Ministry of Infrastructure & Environment), Aldersgate Group, the Knowledge Transfer Network (KTN) and the University of Northampton. REBus has secured €3.1m funding from the European Commission's LIFE+ fund, UK governments and project partners.

The project has launched pilots on supply (production and retail sale of goods and services) and demand (purchase and use of the goods and services) by providing technical expertise to businesses in developing business models and engaging with their customers and supply chains:

DEMAND SIDE

REBus partners in the Netherlands are driving the delivery of resource efficient business models (REBMs) through the public procurement process. This includes supporting both government and company procurers, developing new models before and during the tendering process.

SUPPLY SIDE

In the UK, REBus is working with businesses to build the financial case for a transition from traditional to more resource efficient business models. This includes some innovative SMEs who have entered the market with circular business models and need support in refining their proposition to customers.

With these results, lead partner WRAP examined the extent to which the business models that have been piloted through the REBus project could deliver economic and environmental benefits for the EU economy if they were adopted on a large scale⁹. Extrapolating the results from our pilot projects to the whole EU economy shows significant economic and environmental gains for the EU out to 2030. The forecasts were conducted across three separate scenarios (termed: no new initiatives¹⁰, current trajectory¹¹ and transformational change¹²).

⁹ WRAP (December 2016) *Extrapolating resource efficient business model potential across Europe*.

¹⁰ The first scenario involves no new initiatives and a very limited increase in the 'circularity' of the economy.

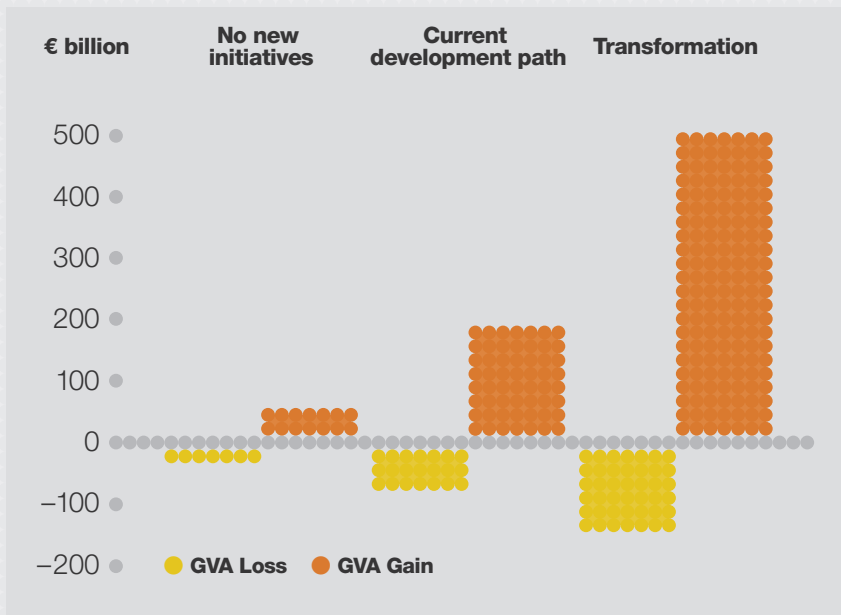
¹¹ The second scenario envisages a continuation on the current trajectory, with significant further increases in recycling and remanufacturing likely.

¹² The third scenario sees substantial progress in recycling and remanufacturing, but also major development of the reuse, servitisation and biorefining sectors.



FIGURE 1.1 GROSS VALUE ADDED

Potential GVA impacts to 2030 across Europe



With transformational change, there is the potential for a total of €324bn gross value added (GVA) created, a reduction in material demand of 184 million tonnes, an additional 172 million tonnes of material use avoided and a reduction in emissions of 154 million tonnes CO₂eq by 2030. Figure 1.1 shows that although GVA displacement (reduction in manufacturing) is highest in the transformative scenario, the gains are also the greatest and more than offset any losses. Figure 1.2 and 1.3 show that greater adoption of resource efficiency leads to greater reductions in material use and associated greenhouse gas emissions.

FIGURE 1.2 MATERIALS

Materials diverted and use avoided in Europe to 2030

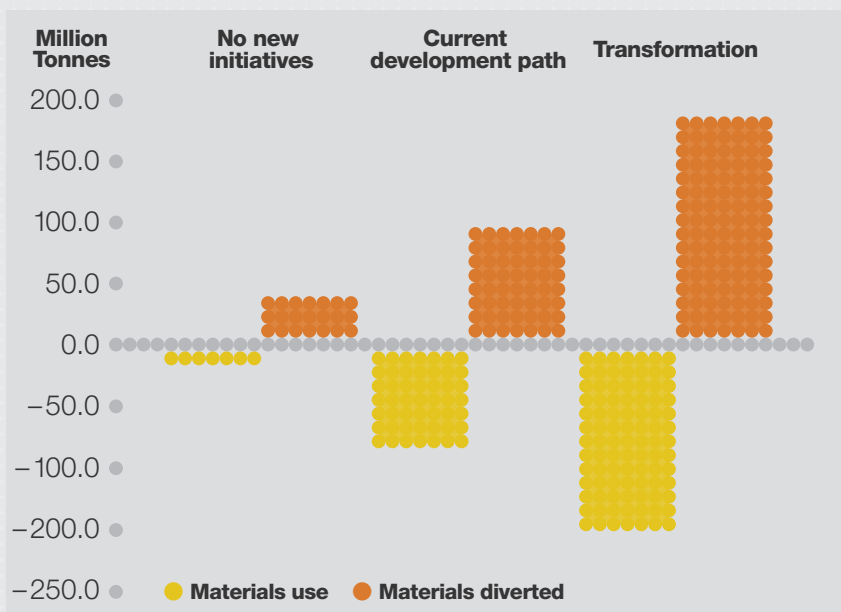




FIGURE 1.3 EMISSIONS

Potential greenhouse gas emissions reductions to 2030 from a global perspective

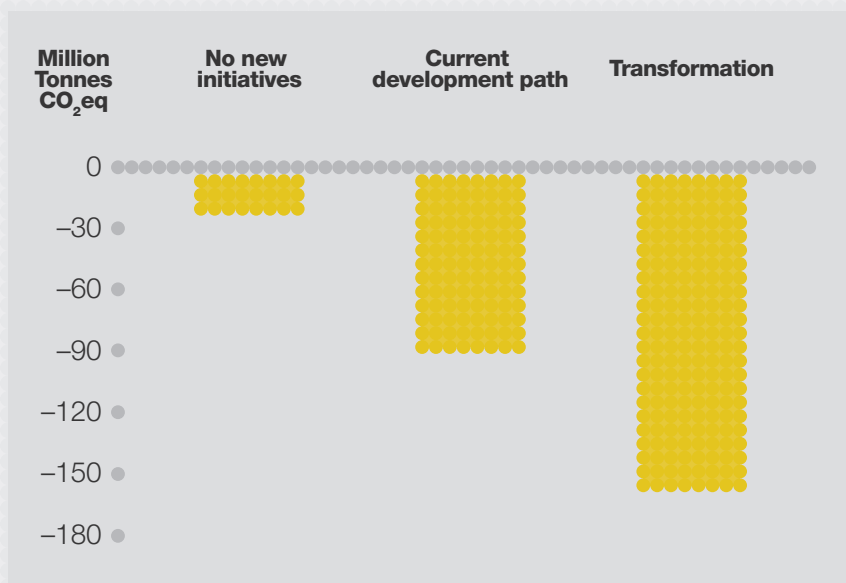


FIGURE 1.4 NATIONAL GAINS

Potential GVA gains to 2030 across Europe totals €324bn

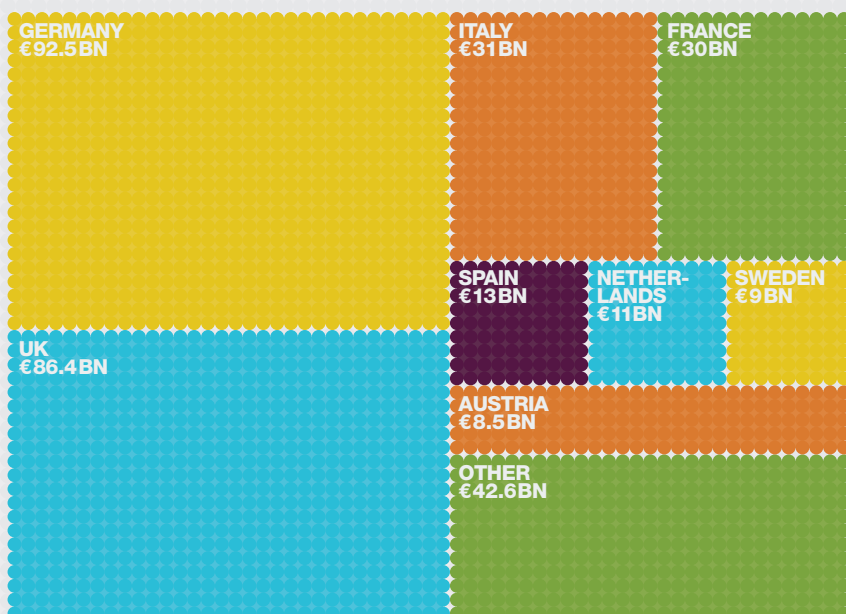


Figure 1.4 shows that the potential gains from resource efficient business models under the current development path and transformative scenarios are distributed across European economies. Opportunities exist in all EU economies to increase GVA through a move towards greater resource efficiency.

Whilst the benefits of moving towards a more circular economy are significant, the limitations of current technology and processes must be remembered to ensure that higher targets do not result in greater use of other resources, such as energy and water, to meet them. The move to circularity must be approached through the prism of system-wide efficiency.



TWO: DESIGNING OUT WASTE

The extension of the EU's ecodesign policy to include requirements for resource efficient product design across a broad range of products is key to stop resources from becoming waste in the first place.

The design stage is critical

More than 80% of a product's environmental impact is determined at the design stage¹³. This shapes a product's composition and volume as well as its durability, repairability and recyclability. Adopting an ecodesign approach places special consideration on a product's environmental impacts across its lifecycle and helps to stamp out unnecessary waste early.

Without ecodesign, it is often consumers that lose out as they are purchasing from a market where products are not lasting as long as they could. As noted in a recent report by UK think tank, Green Alliance, improving product design is not a call for new technologies but for new market rules that drive businesses to compete over the quality of their products¹⁴.

Driving product standards upwards

Mandatory standards, signalled well in advance, have played a major role in improving resource efficiency. For example, the EU's ratchet on automotive engine emissions standards has led engine manufacturers and car designers to invest billions in research and development to deliver more fuel-efficient vehicles that reduce costs to the end user and improve air quality¹⁵. Today, it would take 50 new cars to generate the same level of emissions as a single vehicle built in 1970¹⁶. The End of Life Vehicle Directive¹⁷ has also been instrumental in ensuring that most of a car is recycled.

Similar challenges must be set for the circular economy by using clear ecodesign standards across an increasing range of products as well as encouraging design and disassembly methods that facilitate the reuse and remanufacturing of valuable components. Such a strategy should clearly set medium and longer term targets, with delivery dates. These could be agreed on a sector by sector basis so that they are challenging but deliverable. Mechanisms should be put in place to ensure that the strategy is not undermined by imports that do not meet the required standards.

¹³ > Graedel, T. E & Allenby, Braden R & American Telephone and Telegraph Company (1995) *Industrial ecology*.

¹⁴ > Green Alliance (November 2016) *Better products by design: ensuring high standards for UK consumers*.

¹⁵ > Read more: <http://bit.ly/2jLDSvP>

¹⁶ > Ibid

¹⁷ > Read more: <http://bit.ly/2j7mmPf>



The EU must extend its current ecodesign policy

The EU's existing ecodesign policy has been highly successful to date, delivering over 40% of Europe's 2020 energy efficiency target. However, it only covers energy efficiency and needs to broaden to areas such as reuse, durability and secondary material use. IKEA's application of resource efficient design on just one product line has resulted in a savings of 680 tonnes of CO₂ per year, which is the equivalent of energy use in 480 European households (see Box 2.1).

The Commission deserves praise for responding to calls to prioritise resource efficiency alongside energy efficiency in ecodesign standards as noted with the publication of the Package. Whilst the Commission signalled strong intention to develop ecodesign further with the original publication of the Package, there is concern that it has fallen behind on its timetable.

BOX 2.1. CHANGING MATERIALS IN AN IKEA PLASTIC BOTTLE

TOMAT is a product currently on the IKEA shelves made of 100% virgin plastic. Working together with a supplier, IKEA found a way to use its own waste partly to replace virgin material. From February 2017, 50% of the bottle will be made of IKEA's shrink wrap waste.

By shifting only half of this bottle from virgin to IKEA's own waste, the business saves 680 tonnes of CO₂ per year, which is the equivalent of energy use in 480 European households.

This is a journey and IKEA is looking for other materials and technologies to reduce virgin materials use further. IKEA is on an innovation quest to use more sustainable materials in its products.




© IKEA Group



A new working plan on ecodesign was finally published within the Commission's 'Winter Package' on energy in December 2016, following a delay of over a year¹⁸. The new products to be considered are building automation and control systems, electric kettles, hand dryers, lifts, solar panels and inverters, refrigerated containers and high-pressure cleaners. This is an important start but the list of new products is limited; resource efficiency design requirements are needed across a range of products, not least ICT products¹⁹ (like smartphones and computers) and white goods (like washing machines, fridges and dishwashers). For instance, if washing machines lasted as long as consumers expected, Europeans would save £3.6bn and generate 900,000 fewer tonnes of e-waste annually²⁰.

More positively, the Commission has signalled that the periodic reviews of products already subject to energy efficiency ecodesign standards will incorporate resource efficiency criteria. This raises the possibility that a range of products will be considered for their resource-saving potential in addition to the recently announced products.



In 2011, we started using lifecycle assessments to inform our sustainable product thinking, because decisions made in the design phase have a huge knock on effect on every other stage of the product's life. As a result, our products design team now use our own Sustainable Design Toolkit when designing all new products.

FIONA BALL
HEAD OF RESPONSIBLE BUSINESS
SKY

18 > European Commission (November 2016) *Commission to set out new approach on Ecodesign*.

19 > Action on ICT products has been deferred pending the outcome of a new study into the issue.

20 > Green Alliance (November 2016) *Better products by design: ensuring high standards for UK consumers*.

THREE: BUILDING TRACTION IN THE MARKET FOR INNOVATION

Collaborative initiatives from EU bodies such as the EIB to help SMEs access funding and expertise are key to ensure that circular products and business models get traction in the market.

Going circular requires shifting business as usual

The shift to a more resource efficient economy requires a range of new business models as well as the development of new energy efficient, low carbon and resource efficient technologies. These business models and technologies are rapidly developing but are sometimes perceived as presenting more risk than the business-as-usual scenario, leading to a reluctance to invest and change.

A clear lesson from the REBus pilots is that a change in business model requires a long lead-time paired with technical support in the formative stages; this is particularly true for SMEs. For REBus supply side projects, the lead times from initial commitment to actually launching a new model ranged from six to 18 months. This underlines the need to develop financial and technical support mechanisms for businesses and highlights the importance of stable government policy that extends over more than one Commission presidency: wider surveys have identified policy uncertainty as a major barrier^{21, 22, 23}.



The REBus delivery team added huge value helping overcome many of the barriers that were presented, for example questions over the waste hierarchy, questions over how to decontaminate equipment etc. Most importantly, they supported us with the procurement aspect which helped us overcome a barrier that had been blocking our business from launching for nearly nine months ❖❖



MICHAEL MCLEOD
FOUNDER AND MANAGING DIRECTOR
UNIGREENSCHEME

21 ❖ POLFREE (October 2012) *Business barriers to the uptake of resource efficiency measures*.

22 ❖ Ellen MacArthur Foundation (2013) *Towards the circular economy*.

23 ❖ CIWM (2014) *The circular economy: What does it mean for the waste and resource management sector?*



Developing a viable innovation framework

Barriers to innovation exist across businesses of all sizes. All face short-term cost pressures. SMEs and start-ups in particular lack well-resourced facilities, brand recognition and established routes to market.

Moving forward, the Commission must focus on two main routes by which to boost businesses' capacity to innovate and develop new resource efficient business models: improving their access to funding and technical expertise.

Linking projects to funding

Despite the positive return on investment demonstrated by the REBus pilot projects and elsewhere, workshops held by the Aldersgate Group over the course of this project identified that many investors still consider changes to business models to be high risk strategies and price that risk into their lending terms, creating a disincentive to innovate²⁴.

EU institutions have made a good start in offering financial support to businesses developing new resource efficiency solutions. Following the publication of the Circular Economy Package, the European Investment Bank (EIB) made available €24bn of existing finance specifically to support research and innovation in circular economy projects and businesses²⁵. This complements the €650m the Commission elected to invest towards 'Industry 2020 in the Circular Economy' through Horizon 2020 and the €5.5bn from the structural funds for waste management.

The boost to innovation funding is welcome but ensuring businesses can access the available finance is key. For businesses, barriers both real and perceived include the challenge of presenting an established track record to potential lenders as well as choosing to not apply due to a risk-averse strategy or anticipating an unsuccessful application.

24 > Aldersgate Group (October 2014) *Financing the transition to circularity*. <http://bit.ly/2d3tRW5>

25 > European Investment Bank (December 2015) *EU opens up €24bn of existing finance to circular economy businesses in support of EU climate goals*.



The UK's National Audit Office reviewed how to improve SME access to finance and recommended that government departments should "take the lead in simplifying responsibility within government for addressing SME finance issues, ensuring that a more integrated approach is taken to analysing data and research and turning this insight into policy interventions"²⁶. The Commission should seek to adopt such a leadership role and ensure that this sits alongside a flexible and agile approach from the EIB to reflect the EU's shift towards circularity²⁷.

Linking projects to expertise

Most of the pilots delivered through REBus would not have happened without access to the expertise from the REBus delivery team (see Box 3.1). In particular, pilots report that guidance was helpful in terms of market research, generating internal buy-in across departments (i.e. sales, finance and marketing teams) and communication once a product or service was brought to market. This expertise would have been difficult to afford otherwise, particularly for SMEs.

If businesses do not have the competencies to adopt circular business models then incentives put forward by EU institutions will only have marginal impact. REBus has developed guides²⁸ to aid businesses in implementing new business models based on learnings from the REBus projects, including innovation, developing a business case and rolling out a new business model. Whilst the guides will form a foundation for action and raise awareness of what is required, specific, external technical support is likely to be needed by many businesses for some time yet.

²⁶ National Audit Office (November 2013) *Improving access to finance for small and medium-sized enterprises*.

²⁷ Ibid

²⁸ Read more: <http://bit.ly/2jdObVK>



BOX 3.1. IPOWERS OUTPERFORMS PROJECTED ENERGY GENERATION

Social enterprise iPower is focused on reducing energy bills and carbon emissions through BlueGEN installations (small scale fuel cells) in social housing and other properties in an effort to make clean energy affordable to all.

iPower adopted a funded model for Micro-CHP provision whereby they lease the Micro-CHP kit to clients and the supplier bears

the maintenance costs. REBus expertise was key to (a) developing a thorough risk assessment early on, which whilst time-consuming saved significant time down the line, (b) helping secure finance for capital expenditure to purchase additional units, (c) engaging clients on the viability of a Micro-CHP funded model and (d) developing a sector-specific marketing strategy.

The pilot, which became fully operational in January 2016, is exceeding its projected performance, generating 3156 kWh in its first 85 days. It is estimated that the net savings for the pilot will amount to 19.96% in Year 1, rising to 36.4% by Year 10. CO₂ mitigation is estimated as 3–4 tonnes per year.



© iPower





BOX 3.2. THE DUTCH GREEN DEAL

In 2011, the Dutch government launched a new programme to drive eco-innovation, including resource efficiency, called the Green Deal²⁹. Through the provision of expertise rather than funds, the programme helps companies, industry organisations and NGOs address barriers such as ambiguous or restrictive legislation, legal confusion or a lack of partners³⁰.

Dutch policymakers have seen much appetite for the Deals from applicants and government itself. Those taking part in the programmes have reported major benefits such as increased confidence in their business model and better lines of communication with government.

The Commission has already started to address the importance of expertise through the provision of its 'Innovation Deals'. The deals are modelled on the Dutch Green Deal (see Box 3.2) and provide guidance on how to address legislative obstacles to innovation. As with the REBus project, no direct funding is provided in the implementation of the Innovation Deals.

For its Innovation Deals, the Commission will accept five of the 32 proposals received from 14 Member States. Officials should consider extending this to more businesses: corporates taking part in REBus were comforted by the 'critical mass' of organisations prepared to experiment with business models through the project.

²⁹ > Read more: <http://bit.ly/2jyQHt6>

³⁰ > Parliamentary Office of Science and Technology (September 2016) *Designing a circular economy*.

FOUR: STIMULATING MARKET DEMAND THROUGH PUBLIC PROCUREMENT

To send a strong resource efficiency signal to the market, the Commission must build on its decision to incorporate the circular economy in its public procurement by publishing clear criteria to that effect and encouraging public authorities across the EU to follow suit.

Governments and public institutions must lead by example

Public procurement constitutes 14% of the EU's GDP, amounting to about €2tn annually³¹. This represents a significant lever with which to drive market demand for circular goods and services in addition to enabling Member States' public authorities to meet today's most pressing environmental challenges and budget constraints. New procurement guidelines could see the leasing of public building furnishings, application of good quality secondary raw materials for national infrastructure projects and purchase of products with higher recycled content.

The size – and therefore the huge potential for influence – of public sector procurement means EU institutions and public authorities should adopt a leadership role to set the direction of sustainable supply chain operations³². Such a move would also provide further reductions in the EU's greenhouse gas emissions.



One of the most important lessons we learned is to discuss your intentions with the market in advance. Engage them in early dialogue and involve your potential suppliers, giving them time to develop solutions that meet your requirements ❖



CUNO VAN GEET
SENIOR ADVISOR – RESOURCE EFFICIENCY
RIJKSWATERSTAAT

In the Netherlands alone, public sector energy consumption could be reduced by 10% and nearly three million tonnes of CO₂ emissions could be avoided if all Dutch public authorities adhered to the national Sustainable Public Procurement criteria³³. Current efforts by the Dutch Ministry of Defence are expected to generate €750,000 in additional revenue and prevent over 14,500 tonnes of CO₂ through its strategy to recover textiles (see Box 4.1).

Where the Commission can fill gaps

Current EU public contracts are guided by 'best value' or 'economically profitable tender' mandates, neither of which consider the environmental impacts (i.e. resource intensity) of a good or service. The Circular Economy Package is a step forward in that it sets out several key actions on green public procurement, which includes adopting new procurement criteria on durability and reparability as well as facilitating training on the circular economy³⁴.

³¹ Directorate-General for the Internal Market, Industry, Entrepreneurship and SMEs (April 2016) *Preventing corruption – new public procurement rules as of April 2016*: <http://bit.ly/2cGTmcn>

³² Day (2005) *Buying green: the crucial role of public authorities*.

³³ Dutch Ministry of Infrastructure and Environment (2011) *De impact van het programma duurzaam inkopen anno 2011*.

³⁴ European Commission (December 2015) *Closing the loop – An EU action plan for the circular economy*.



BOX 4.1. DUTCH MINISTRY OF DEFENCE: TEXTILE RECOVERY

The Dutch Ministry of Defence (MoD) has approximately 42,000 military personnel in active service. Soldiers receive clothing and personal equipment on loan. At the end of active service, some of the clothing and equipment has to be returned.

In an assessment of their textile recovery, it was concluded that the MoD could collect nearly one million kilograms of additional material. The returned products are now sorted by the BIGA Groep, who classify 750,000 items annually, cutting out emblems and inspecting all pockets to ensure military property cannot end up in the wrong hands.

Around 35% of the sorted clothing gets a second life in the MoD. The remainder of items are used in new products mostly untraceable to defence clothing. Approximately 33% of items are unsuitable for re-use and get fiberised to become new products such as wall insulation and car door panels, as well as blankets for refugees, bags and wall decorations. The MoD has also set up a requirement that new products purchased must have recycled content, creating a revenue model.

It is expected this will lead to additional revenue of approximately €750,000. The extra costs associated with the services provided by the

BIGA Groep are amply compensated by avoiding costs for confidential destruction and by additional revenue generated by the re-use of products and materials. It is anticipated that this revenue will increase further if the system put in place by the MoD is also taken on by other government agencies.

The re-use of materials is expected to deliver savings of over 14,500 tonnes of CO₂, 132,000 GJ of energy (equal to 4.25 million m³ of natural gas) and almost 2.9 million m³ of water. The project also contributes to the government pledge to create 125,000 additional jobs for people with occupational disabilities.



© Ministerie van Defensie



Encouragingly, the Commission has already announced its intention to lead by example by embracing circular procurement in its operations and has recently published a handbook³⁵ on green public procurement. Special emphasis will be placed on aspects relevant to the circular economy, such as durability and repairability, when setting the Commission's revised criteria. The Commission must ensure the new criteria are set early and showcase a clear timeframe for when it will be in place. The transition to more resource efficient procurement must be done in a way that gives the market time to adapt and to deliver the goods and services required.

Much of the detail is sector specific, so it is recommended that mandatory and best practice requirements are established on a sector by sector basis with a clearly signalled direction of travel that demonstrates that today's best practice will turn into tomorrow's mandatory requirement. For example, for some time, environmental regulators have had to consider Best Available Technique Reference Documents (BREF's) when issuing permits. Following a period of adaptation, these are now mandatory for new installations permitted under the Industrial Emissions Directive.

BOX 4.2. PRORAIL: PROCUREMENT OF FLOORING AND FURNITURE

The Dutch government has been working closely with rail infrastructure management company ProRail on furnishing their new traffic control centre.

The centre, officially opened in Utrecht in June 2015, was furnished with circular flooring and furniture. As part of their strategy, ProRail encouraged purchasers and suppliers alike to think about a business model based on value retention of the raw materials throughout the entire supply chain.

Rather than owning the flooring, ProRail entered a ten-year acquisition and maintenance contract with Desso for carpet tiles produced from environmentally friendly material. Desso ensures the quality of carpets for 10 years and that they are directly reused or recycled to a high enough standard that the material can be used again.

In terms of procuring office furniture, ProRail was unable to reach a long-term contract and instead purchased products through a one-off contract, opting for environmentally friendly materials and modular furniture. The company is now looking to set up a service to extend product lifetime.



© ProRail

³⁵ European Commission (April 2016) *Buying Green! – A Handbook on green public procurement.*

FIVE: USING FISCAL INCENTIVES TO BOOST RESOURCE EFFICIENCY

The Commission should encourage Member States to adopt fiscal incentives, such as reduced VAT rates, to support the use of durable, repairable and resource-saving products and services.

Fiscal policy dis-incentivises resource efficiency

The harmonisation of VAT systems across the EU has been an important feature of the Single Market. However, the system, which was developed in the 1990s, was not structured with the intention of encouraging resource efficiency. Consequently, in some cases, it can act as a deterrent to adopting more circular business models.

The transition to greater resource efficiency does not mean increasing the regulatory burden on industry. Instead, it requires modifying the current fiscal approach, so that businesses are encouraged to innovate and are rewarded for doing so, whilst consumers are incentivised to repair their goods.

What is the EU taxing?

More than half of the EU's total tax revenue is based on labour taxes, while environmental taxes are merely 6% of expected receipts³⁶.



Globechain's reuse platform encourages businesses to reuse and redistribute items within retail, commercial and construction sectors. Within the REBus project, we recognised there was positive buy-in with corporates wanting to reuse certain materials/items, however legislation and policy limited the possibilities of this, in particular VAT within the construction industry. Changes within policy to encourage corporates to reuse more, which would save them money, would be a real game changer for the industry ❖



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Such a model does not incentivise the transition to resource efficiency, which would value the reuse and recycling of resources. The transition would also require much more labour intensive business models, particularly in areas such as repair, innovation, services and product redesign.

Shifting the (dis)incentives

By increasing the proportion of taxes on natural resource use, businesses would be challenged to reduce their material consumption and would be incentivised to develop more resource efficient business models. A decrease in taxes on labour would see benefits in employment, which is especially true for low-income workers, single parents, second earners and older workers who get 'priced out' by taxes, minimum wage or a combination of the two³⁷.

³⁶ Eurostar (2014) *Taxation trends in the European Union*.

³⁷ OECD (2011) *OECD tax policy studies: Taxation and employment*.



A range of organisations have called for fiscal reforms that shift taxation from labour to natural resources including the International Monetary Fund, the OECD, Eurogroup and the International Labour Organisation. An Ex'Tax study, which included Deloitte, EY, KPMG and PwC, found that such a tax shift could be worth €33.7bn and create hundreds of thousands of jobs³⁸.

EU rules allow a certain degree of flexibility for Member States to reduce VAT rates and it is timely that the Commission is currently considering granting more freedom to Member States on setting rates via its Action Plan on VAT³⁹. Sweden, for example, is already using this flexibility in the name of resource efficiency (see Box 5.1) and introducing tax breaks on minor repairs to household goods in an effort to reduce resource consumption. When developing its proposals, the Commission must consider expanding the list of goods to which the reduced rates may be applied. In particular, this should include goods that are more durable, recyclable and repairable.

BOX 5.1. SWEDEN INTRODUCES TAX BREAKS FOR REPAIRS

The Swedish government has recently introduced a 50% reduction on VAT on the repair of items like bicycles, leather goods and white goods as part of its 'Strategy for sustainable consumption'⁴⁰.

The government is also enabling citizens to reclaim up to 50% of labour costs for fixing home appliances from their income tax. As noted by Sweden's minister for financial markets and consumer affairs, Per Bolund, "this could substantially lower the cost and so make it more rational economic behaviour to repair your goods"⁴¹. It is hoped that the tax breaks will provide a huge boost to the home repairs services industry and trigger job creation in this area.

³⁸ > Ex'tax project (November 2014) *New era. New Plan. Fiscal reforms for an inclusive circular economy.*

³⁹ > Read more: <http://bit.ly/2jyVcUB>

⁴⁰ > Read more: <http://bit.ly/2iAl6mM>

⁴¹ > Guardian (September 2016) *Waste not want not: Sweden to give tax breaks for repairs.*



SIX: ENSURING ONLY 'WASTE' IS WASTE

The Commission should complete improvements to the definitions of 'waste' in a way that ensures waste legislation incentivises, rather than hinders, the re-use of secondary materials and treats disposal as a last resort.

Waste generation in the EU

In 2012, the total waste generated across the EU amounted to 2.5 billion tonnes, slightly higher than 2010 and 2008⁴². As the amount of waste created is increasing, the composition of that waste is changing due to the arrival of more hi-tech products on the market that have an increasingly sophisticated mix of materials such as plastics, precious metals and hazardous materials which are often harder to separate and recycle.

How to define waste

Any effective waste framework would prioritise the higher levels of the waste hierarchy (e.g. further emphasising that functional recovery is a higher value proposition than recycling) and treat disposal as a last resort option. Specifically, only material that no longer has any utility should be treated as waste and sent to landfill. Targets should be developed that extend higher up the hierarchy than simply the bulk percentage of material that is recycled.

If European legislation fails to incorporate clear definitions and binding targets, it could impede progress towards the circular economy with viable material classified as waste too early. This presents restrictions for businesses regarding what they can and cannot do with material. Any action should be applied equally to imports, failing which the strategy will be undermined by low cost, less recyclable and less durable products being 'dumped' onto the market.

Challenges of definitions

The current Waste Framework Directive defines waste as "any substance or object which the holder discards or intends or is required to discard" (Waste Framework Directive 2008/98/EC). The consequences of such a definition is threefold:

-  The label of waste is often identified at a very early stage and before any secondary use/market can be applied.
-  The holder effectively becomes a waste handler/producer and is subject to corresponding regulatory requirements.
-  The regulatory burdens of holding waste means that it can become more complex and at times economically unviable to re-use materials.

⁴² Eurostat (September 2015) *Waste statistics*.



Recoverable, viable material should not be labelled as waste, as that lends itself to the problems outlined for the original waste definition and risks stifling the growth of the secondary market. The language used should be targeted at driving a cultural shift whereby much of the material currently burdened with the label of being a waste is, in the future, regarded as a feedstock for further products. In parallel, those who seek to abuse a more flexible definition by using it to inappropriately store or dispose of 'true' waste should face strict penalties.

The Commission's proposed amendments^{43,44} presented with the Package are a good improvement, in that they echo earlier definitions which referred to 'waste' as a substance or object that had fallen out of the cycle of utility. This should benefit companies like REBus pilot UniGreenScheme, which coordinates asset resale services across fifteen UK universities and has faced large barriers in ambiguity around waste definitions (see Box 6.1).

The pending amendments recommended by the European Parliament's draft Bonafé report⁴⁵ would complement the new definition of 'waste'. In particular, the Commission should adopt the recommendation for "clear rules for substances or objects to be recognised as by-products and for waste that has undergone a recovery operation to be recognised as having ceased to be waste".

43 ▷ Article 5: substance or object resulting from a production process the primary aim of which is not the production of that substance or object is considered not to be waste, but to be a by-product if the following conditions are met:

44 ▷ Article 6: Member States shall ensure that waste which has undergone a recovery operation is considered to have ceased to be waste if it complies with the following conditions:
(a) the substance or object can be used for specific purposes;

45 ▷ Committee on the Environment, Public Health and Food Safety (May 2016) *Draft report on the proposal for a directive of the European Parliament and of the Council amending Directive 2008/98/EC on waste.*



BOX 6.1. UNIGREENSCHEME BRINGS ASSET RESALE SERVICE TO HIGHER EDUCATION INSTITUTIONS

Universities across the UK are regularly disposing of a high number of useable and valuable scientific instruments and other assets each year into waste skips as part of laboratory and facilities clear-outs. Staff are frustrated at having to dispose of useable equipment, but the need to urgently recoup space often means they have no other choice. Many of these clear-outs occur as a direct result of the absence of an easy access route to resale opportunities.

UniGreenScheme collects, stores and sells surplus equipment for universities and returns to them a share of the profits. They return the profits back to the research department within the university where the equipment came from – so it could be described as an incentivised re-use service. Fifteen universities across the UK currently use the service.

The legal definition of waste presented an issue, in that it was unclear whether the collected equipment was or was not classified as waste. Clients' views ran contrary to government guidance on the legal definition of waste, which in turn lengthened the collection process.



© UniGreenScheme



Challenges of implementation

Variation in national interpretation of the Waste Framework Directive has led to situations in which the classification of material can conflict across countries or even regions. This leads to unnecessary administrative burdens and costs. The Commission should accept Bonafè's amendments suggesting that it improve and align the definitions of waste and byproducts across Member States.

For construction projects, this is particularly key given the increasing use of modular and offsite construction; legislation should allow construction companies to decommission rooms by 'unplugging' them from a building and plugging them into a new building, which may be in another country.



It's very important that those materials can be transferred across borders – it's incredibly important that if we take something to pieces in Portugal, we can reuse some of that material in Spain, or in France, or Italy, or anywhere we want to move it to, without huge amounts of additional regulation, reclassification and overlook⁴⁶



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⁴⁶ Intervention at Aldersgate Group event (February 2016): *Revving up resource efficiency in Europe: What next for the EU Circular Economy Package?*



Redirecting responsibility to the producer

Municipalities face challenges in managing a waste stream that is growing in both volume and complexity. The ‘extended producer responsibility’⁴⁷ (EPR) concept provides a clear mechanism for the efficient recovery of materials used in products and aims to shift the burden of managing certain end-of-life products from local authorities and taxpayers to producers.

There are now 400 EPR schemes around the globe. While these schemes have contributed to increasing material recovery rates from certain waste streams, the economic and environmental performance of these systems are highly disparate. They also currently only cover a limited range of goods, with packaging, electronics, cars and tyres dominating the conversation. The list of goods that fall under these schemes should be extended.



It’s now nearly 20 years since the introduction of Producer Responsibility legislation on consumer goods in the UK. We’re in a good position to evaluate the huge amount of progress that’s been made and to identify where improvements are now required. We also need to expand our horizons beyond the scope of existing legislation to facilitate new areas of improvement ❖



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Elements of good governance – such as clear delineation of roles, systematic monitoring and data collection, transparency, enforcement, stakeholder consultation and adequate resources for oversight – are critical and lacking in many EPR systems⁴⁸. It is important that these schemes are designed at least to ensure that the costs linked to the separate collection and the end-of-life treatment of products are fully covered⁴⁹. They must also be developed in a way that is compatible with schemes that already exist in different localities to ensure that there are no unnecessary overlaps and added costs to business.

The introduction of ‘fee modulation’ practices within these schemes is very much welcome as those that develop products with increased durability, reusability and recyclability would have to pay lower waste management fees. Clearing litter means high costs for local authorities annually; the ESA estimates that practicing EPR on the most intractable litter sources could save councils an estimated £300m per year⁵⁰.

⁴⁷ ❖ According to the OECD, extended producer responsibility is a “policy approach under which producers accept significant responsibility – financial and/or physical – for the treatment or disposal of post-consumer products”. OECD (March 2001) *Extended Producer Responsibility: A Guidance Manual for Governments*.

⁴⁸ ❖ OECD (September 2016) *Extended Producer Responsibility: Updated Guidance for Efficient Waste Management*.

⁴⁹ ❖ DG Environment (2014) *Development of guidance on extended producer responsibility*.

⁵⁰ ❖ ESA (October 2016) *The role of extended producer responsibility in tackling litter in the UK*.



SEVEN: PROVIDING BUSINESSES WITH THE INFORMATION THEY NEED

Better provision of information by EU bodies on resource efficient practices and tracking waste could support greater action by businesses.

An information gap

Though the business case for a more circular economy is becoming more robust, uptake is still not happening at the speed or scale required. In a survey conducted by the UK's Chartered Institution of Wastes Management (CIWM), 80% of respondents agreed or strongly agreed that resource efficiency "represents an opportunity", yet only 27% of the same respondents claimed to be doing at least a "modest level of planning" for it⁵¹. This gap is in part due to the lack of practical and reliable information available to support businesses wanting to improve their resource efficiency.

Early surveys conducted by the REBus delivery team found a lack of quantitative data on companies' resource efficiency initiatives in both the public domain and within the companies themselves. This creates a disconnect between the high level analysis of the benefits of resource efficiency at the national or international scale carried out by big consultancies such as McKinsey⁵² and the information available at the company level. The REBus project has added to this knowledge base, but more must be done to encourage others to follow.

More information, more market confidence

Whilst, for commercial confidentiality reasons, detailed company level information will remain difficult to access, the proposed drive to embed resource efficiency into public procurement could be used to provide further confidence to the market in general. Eurostat already reports on Member States' overall resource consumption. It should also start to report on resource efficient practices being rolled out in public procurement (starting with central government and Commission procurement) and the associated resource efficiency and financial benefits. This would provide a trusted means of measuring progress towards the procurement targets discussed in Chapter 4.

It is also recommended that the EU adopt an electronic duty of care (e-doc) system. e-doc is an online system to track the collection, transport, treatment and disposal of non-hazardous waste. A regulatory impact assessment conducted as part of Scotland's 'Making Things Last' circular economy strategy⁵³ concluded that making e-doc mandatory in Scotland would bring with it a 10 year net present value of £21.1m through administrative savings and reductions in waste crime alone⁵⁴. This is without even factoring in the benefits associated with better and more readily accessible information leading to greater recovery of valuable resources. Implementing such a system across the EU would be valuable in terms of monitoring trans-boundary shipment of waste and in dealing with waste crime (it is estimated that 2 million tonnes of 'WEEE' waste illegally leaves Europe every year) as well as encouraging recycling and recovery facilities to be established within the EU rather than outside of it.

⁵¹ CIWM (2014) *The circular economy: What does it mean for the waste and resource management sector?*

⁵² McKinsey (September 2015) *Growth within: A circular economy vision for a competitive Europe.*

⁵³ Scottish Government (February 2016) *Making Things Last – A Circular Economy Strategy for Scotland.*

⁵⁴ Scottish Government (February 2016) *Partial business and regulatory impact assessment (BRIA) – Making Things Last – A Circular Economy Strategy for Scotland.*



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