

Business and Regulatory Impact Assessment

Title of Proposal

Partial Business and Regulatory Impact Assessment (BRIA) Making Things Last - A Circular Economy Strategy for Scotland

Purpose and intended effect

1. Background

The Scottish Government's Zero Waste Plan (ZWP) (2010) <http://www.gov.scot/Publications/2010/06/08092645/0> set out actions and targets to achieve a zero waste society. It aims to maximise the value of the waste material resources we use in our economy, creating new business opportunities as well as savings to existing businesses and local authorities.

Safeguarding Scotland's Resources: Blueprint for a More Resource Efficient and Circular Economy (2013) <http://www.gov.scot/Resource/0043/00435308.pdf> builds on the Zero Waste Plan and focuses on waste prevention, resource efficiency, and the circularity of some product/material supply chains in the Scottish economy. The Scottish Government states in the programme:

If we keep on consuming on current trends we will need to extract 75% more raw materials in the next 25 years. Most of these are finite resources, and even those that can be renewed have limits on what can be used sustainably.

This situation and the path we are on is clearly unsustainable, not just for our environment, but for our future economic prosperity too. So the actions we are committing to in this programme are designed to safeguard our prosperity by helping Scotland use our planet's precious resources more efficiently.

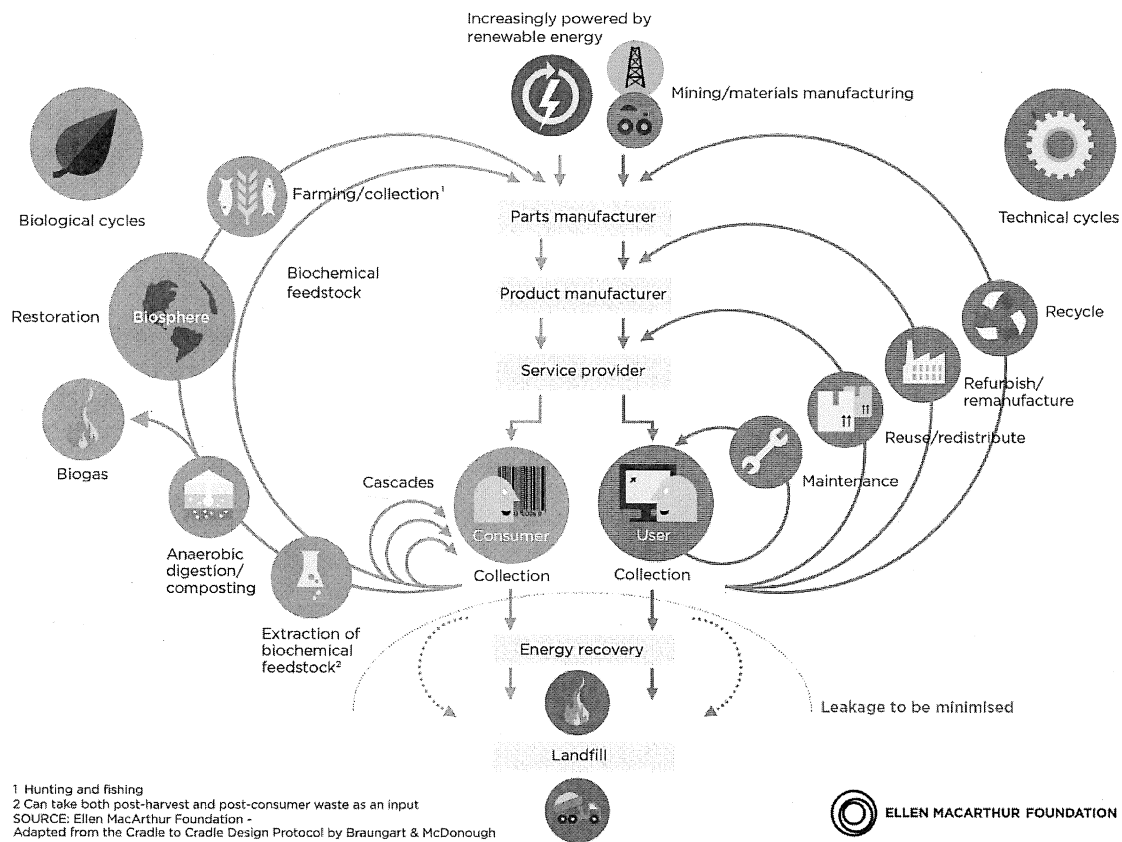
Safeguarding Scotland's Resources: Blueprint for a More Resource Efficient and Circular Economy (2013)

A circular economy keeps products and materials in use for as long as possible, through changes in design, manufacture, and the way that services are sold to consumers. At the end of their life, products, components, or materials are recovered for reuse, repair, remanufacture, or recycling.

Circular economies consist of "closed loops" where material inputs and waste outputs are minimised – a model that can be realised either on a geographical basis (e.g. within Scotland), or on a functional basis (e.g. within a specific sector or supply chain). A circular economy addresses some of the growth constraints and risks inherent in the linear model of 'take, make and dispose of'. The shift towards greater circularity can provide new growth opportunities for businesses and reduce environmental impacts.

Graphic Depiction of a Circular Economy

CIRCULAR ECONOMY - an industrial system that is restorative by design



2. Objective

- To accelerate the development of a circular economy in Scotland.
- Deliver greater circularity to the Scottish economy as set out in Scotland's Economic Strategy (March 2015).
<http://www.gov.scot/Resource/0047/00472389.pdf>
- Contribute to the Scottish Government's aims towards meeting the 2050 emission reduction targets and the requirements set out in Sections 78-90 of the Climate Change (Scotland) Act 2009.
<http://www.legislation.gov.uk/asp/2009/12/2009-08-05>
- Contribute to international action; the European Commission is currently finalising a package of circular economy measures (January 2016).
http://ec.europa.eu/environment/circular-economy/index_en.htm

We are creating conditions for a more circular economy that helps companies embrace new business models and manufacturing processes, and which transforms used products into assets that support industries like remanufacturing, reuse, product disassembly and reprocessing.

Remanufacturing is transforming how parts and products are produced. In doing so, it helps industries minimise their use of raw materials, while reducing energy and water use.

Sectors as diverse as aerospace, energy, automotive, IT and medical equipment industries are already benefiting from this transformation. We are helping to stimulate remanufacturing networks and supply chains by funding the Scottish Institute of Remanufacture – one of only four international centres of excellence for remanufacturing.

Scotland's Economic Strategy, March 2015.

Rationale for Government intervention

Accelerating the development of a circular economy in Scotland will assist the achievement of the National Purpose Framework:

<http://www.gov.scot/About/Performance/scotPerforms/purpose>

- Increase productivity, competitiveness and resource efficiency: greater circularity will keep valuable materials in the Scottish economy for longer and encourage the more efficient management of resources. Opportunities exist across the Scottish economy to reconfigure the flows of material inputs into higher value and more sustainable markets. Greater circularity could lead to increased resource productivity and competitiveness.
- Sustainability, enhance the environment and reduce emissions: the core principles of a circular economy are consistent with environmental sustainability. Circular economy activities include reuse, repair, remanufacturing and recycling and moving economic activity into tighter material loops is consistent with higher sustainability and emissions reduction through reduced requirements for material resources, energy, and water during production.

At the end of 2013, an Evidence Gathering Programme was established to better understand how a more circular economy could operate in Scotland and what the benefits might be.

Research by Ellen MacArthur Foundation

<http://www.zerowastescotland.org.uk/content/scotland-and-circular-economy-report> found that adopting the principles of circularity across 8 sub-sectors of manufacturing could make annual cost savings of £0.8-£1.5 billion.

Remanufacturing was identified as an element of the Scottish economy where new employment and value added potential exists.

<http://www.zerowastescotland.org.uk/RemanufacturingReport>

In the food and drink industry, significant new, higher value, opportunities for by-products from the whisky and fish processing industries have been quantified

<http://www.zerowastescotland.org.uk/BeerWhiskyFish>

A number of other studies contributed to further evidence on the scale of circular economy opportunities in Scotland. These together with the consultation process outlined below have informed the actions contained within the strategy.

Consultation

In the period from January to June 2015 the Scottish Government undertook a period of engagement and debate with a broad range of internal stakeholders. The purpose of this debate was to broaden understanding and awareness of the opportunities arising from a circular economy in Scotland and the changes in behaviour and practice that may be involved.

During the debate period further evidence and information was gathered and potential policy approaches which support action towards a circular economy were identified. The debate also provided a focal point for innovation and new ideas and ultimately laid the foundations to develop the proposals in this consultation.

Within Government

Many aspects of the proposals have been discussed across the Scottish Government and with a variety of public bodies and agencies including Education Scotland, Highlands and Islands Enterprise, Scottish Environment Protection Agency (SEPA), Scottish Enterprise, Scottish Funding Council, Zero Waste Scotland, Skills Development Scotland.

Public Consultation

The debate period engaged a range of external stakeholders with the purpose of broadening the awareness and understanding of greater circularity in the Scottish economy and providing a focal point for consensus on potential new innovations and measures.

The stakeholders involved in the process included:

Aerospace Defence Security & Space (ADS UK), Chartered Institution Wastes Management (CIWM), Convention of Scottish Local Authorities (COSLA), Ellen MacArthur Foundation Circular Economy 100 members, Community Resources Network Scotland (CRNS), Decom North Sea, European Chemical Regions Network, Green Alliance, Industrial Biotechnology Innovation Centre (IBioIC), Institute of Brewing & Distilling, MRO Network (aerospace), NFU Scotland, Oil & Gas UK, various Industry Leadership Groups, Scottish Whisky Association, Scotland Food & Drink, Seafish Scotland, Seafood Scotland, UK Centre for Remanufacturing & Reuse.

Formal Consultation

A formal consultation followed the debate period detailed above and this ran for a period of 10 weeks during August to October 2015.

Business

As part of the formal consultation, we asked what impact the Circular Economy Proposals contained in the formal consultation might have on businesses. Scottish SME's and large businesses from a cross section of activities and locations were consulted.

Based on the partial BRIA, issued alongside the formal consultation, the results of the consultation processes were used to develop this "updated" partial BRIA, to evaluate the business benefits of the proposed actions, as well as the potential cost implications.

Some of the priorities contained within the strategy will require their own separate more detailed individual BRIA's to be developed. For this reason it is not possible to complete a full BRIA for the entire strategy. Where a separate BRIA is likely to be required for a priority within the strategy this has been indicated.

In some cases there is insufficient information to assess the full impact of the strategy's priorities and here we have indicated the key factors in terms of impact and costs/benefits.

Options

1. Do Nothing/Business As Usual.

Currently there are existing policies and measures in place through the Zero Waste Plan and Safeguarding Scotland's Resources Programme. These have helped create the foundation for a move to a more circular economy and also address any EU or legal requirements to manage or prevent waste in our economy. Many of the policies, measures and targets contained within these plans are on-going and remain relevant, such as the recycling targets, provision of the Resource Efficient Scotland services to businesses, and the development of the Scottish Institute of Remanufacture to grow remanufacturing capacity. We can therefore expect further progress to be made under this option.

However, with new research and rapid developments in the understanding of the opportunities presented by a more circular economy, there is a risk that without an updated strategy to transition towards a circular economy the outcome for Scotland will be ad hoc and partial; and one where the economic, environmental and social benefits are not fully realised.

2. Making Things Last - Circular Economy Strategy for Scotland.

The strategy presents a package of new policies and measures based on an evidence gathering programme of work, a six month period of engagement with key stakeholders and a formal consultation process. The intention is that this strategy, and the actions that will flow from it, will in due course supersede the Zero Waste Plan (2010) and Safeguarding Scotland's Resources (2013).

The strategy aims to strengthen the circular "loops" in our economy including design, reuse, repair, remanufacture and recycling all of which cut across the private, public and third sectors.

Supply chains are highly interconnected, are often cross-sector and can be local and international. This complexity needs to be reflected in a strategic and coordinated approach to a range of new supporting regulatory and non-regulatory interventions.

This approach will identify activities and sectors in the Scottish economy where the most potential exists to benefit from circularity. A new strategy provides the opportunity to update actions and interventions that are required to maximise the benefits of greater circularity.

This is the preferred option.

Sectors and groups affected

Options 1 and 2 will affect the Private, Public and Third sectors.

Benefits

Option 1. Do Nothing/Business As Usual.

The adoption of circular economy activities in Scotland continues at existing rates. Benefits are felt across the Scottish economy and include; improved rates of reuse, repair and remanufacturing. The trend for greater resource efficiency is maintained and recycling rates continue to rise in line with Scotland's Zero Waste Plan.

Option 2. Making Things Last – Circular Economy Strategy for Scotland.

The adoption of circular economy activities in Scotland is accelerated. Uptake of reuse, repair and remanufacture increases significantly and materials are held in tighter, higher value loops for longer. Resource efficiency measures and recycling rates also accelerate. New design and supply chain opportunities emerge, giving rise to innovative solutions and unlocking additional public and private investment.

Costs

Option 1. Do Nothing/Business As Usual.

No new additional costs are associated with delivering the existing circular economy trajectory.

Option 2. Making Things Last - Circular Economy Strategy for Scotland.

The strategy identifies wide ranging actions and interventions that are to be taken forward as priorities. These priorities were shaped by the formal consultation process and as part of the wider engagement process with business and other stakeholders. While the intention is to reprioritise existing budgets to deliver the strategy, the costs associated with specific actions and interventions have been individually assessed, where possible, in this updated partial BRIA.

(a) Design and Procurement

A range of support measures on innovation and design will be provided to businesses through Scottish Enterprise, Highland and Islands Enterprise and Zero Waste Scotland, in consultation with Business Gateway. These services will be free to access, and funded through existing budgets, supplemented by EU funding.

The new action in relation to public procurement could lead to future regulation changes. At this stage these are unknown and so the impact of any potential changes will be the subject of a separate assessment exercise, as and when proposals are further developed. (See also Remanufacturing section below.)

(b) Reuse

The priorities here include a range of measures to increase and expand existing services to support reuse. A focus on energy infrastructure is likely.

For the case of Oil & Gas infrastructure reuse various studies have indicated that reuse of offshore infrastructure achieves between a 3-5 times higher return than recycling and so there is a potential net positive benefit of higher levels of reuse. Guidance produced by Decom North Sea and Zero Waste Scotland is designed to help optimise these benefits. In practice companies will not take action to reuse materials where there is not a net cost benefit and so we can expect there to be a positive impact from greater levels of reuse.

There is also the potential for regulation to support greater levels of reuse. Any potential regulations will be impact assessed as and when proposals are developed.

(c) Repair

Opportunities to increase the repair skills of the third sector and householders through training and self-repair workshops and infrastructure will continue to be provided. These actions will continue to be funded from existing budgets.

An additional priority proposed for exploration is the potential for a comprehensive repair finding service, or network, to make it easy to find where items can be repaired. The costs and impacts of a repair finding service will be calculated when the proposals for this initiative are further developed.

(d) Remanufacturing

In March 2015, a study on remanufacturing in Scotland¹ found that the industry was worth £1.1 billion to the economy and provided employment for 17,000. A key finding was that by 2020 growth potential in the sector for GVA and employment could be £620 million and 5,700 respectively.

The annual spend² on public procurement in Scotland is in excess of £10 billion and scope may exist for remanufactured products to feature more prominently. Two examples are provided below to indicate the potential net benefit in this area.

In United States S.565 Federal Vehicle Repair Cost Savings Act of 2015³ illustrates the potential net benefits of publically procuring remanufactured spare parts for public vehicles. With regards to legislative costs the Congressional Budget Office estimated that the legislation would have no significant budgetary effect because it does not expect that it would significantly change existing procedures for repairing vehicles⁴.

The Senate Report found that in 2011, federal civilian agencies in the USA spent US\$975m on the repair and maintenance of its 588,000 vehicles⁵. The report also found that “remanufactured parts are, on average, 20 to 50 percent less expensive with an equivalent level of quality and competitive warranties”.

A regional police service in England reported a saving of over £100,000 in 2011/12 through the use of reused parts⁶.

Research has shown that Scottish Local Authorities spend between £7m to £10m on parts to service their vehicle fleets and that the total Scottish public sector annual spend on vehicle parts is around £30m⁷. If half of these procurement activities could source remanufactured service parts, savings of 20% to 50% over new part prices⁸ would result in annual savings of £3m to £7.5m.

**Table 1: Overview of Potential Cost Savings 2016 – 2020
(public sector procurement of remanufactured vehicle spares)**

	Low estimate	High estimate
Annual Cost Savings £million	3.0	7.5
NPV 2016-2020* £million	13.6	33.9

*Discount rate 3.5%

¹ ZWS: Circular Economy Evidence Building Programme, Remanufacturing Study

² <http://www.gov.scot/Topics/Government/Procurement>

³ <https://www.congress.gov/bill/114th-congress/senate-bill/565>

⁴ <https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/costestimate/s5650.pdf>

⁵ <https://www.congress.gov/congressional-report/114th-congress/senate-report/59/1>

⁶ West Yorkshire Police - <http://www.westyorkshire.police.uk/news/national-agreement-secured-disposaland-recycling-police-vehicles>

⁷ Remanufacture, Refurbishment, Reuse and Recycling of Vehicles. Optimat for Scottish Government (November 2013)

⁸ Remanufacture, Refurbishment, Reuse and Recycling of Vehicles. Optimat for Scottish Government (November 2013)

Medical Technologies

Refurbishment/remanufacture of medical equipment is a strong market in USA and a growing market in Europe. Global sales are worth US\$525 million⁹ and three quarters of total sales are made in USA. The industry for reprocessing single use devices (SUDs) is estimated to be worth US\$200 - US\$800 million and is growing at a rate of 20-25% per annum¹⁰.

Reprocessing of SUDs and refurbishment/remanufacture of medical equipment are two areas where new opportunities for Scotland could exist. Current evidence suggests there is no reprocessing of SUDs in Scotland but that a small number of firms are undertaking refurbishment, leasing and resale of medical devices¹¹.

For the medical imaging equipment segment, it was estimated that if NHS Scotland purchased half of its replacement imaging equipment from either OEM or third party refurbishers/remanufacturers, the annual cost savings would be £1–1.9 million meaning that the NPV of savings over the period 2016-2020 amounts to £4.8–8.6 million.

For SUDs, the emergence of a third party reprocessing sector in Scotland was modelled and it was estimated that net revenue, net profits, net employment and net GVA were all positively impacted¹².

(e) Recycling

There are a range of new measures planned within this priority.

The planned review of the exemption from requirements for separate collection of food waste in Waste (Scotland) Regulations 2012 may lead to a decision change to those requirements, in which case a separate impact assessment would be needed.

(f) Producer Responsibility

The priority of developing this policy mechanism and a new framework is at an early stage and so it is not possible to assess the impact and benefits at this point. It is likely that this policy will require a separate BRIA when plans are at a more developed stage and the costs and benefits are able to be estimated.

(g) Biological Resources

The aim here is to, via a mapping exercise, establish the scale of the opportunity for biological resources in Scotland and to take account of future impacts on the availability of materials and the impact on other industries dependent on feedstocks.

⁹ Global Diagnostic, Healthcare IT & Radiation Therapy Trade Association (DITTA) 2012

¹⁰ Circular Economy Evidence Building Programme: Sector Study on Medical Technologies, RPA & University of Strathclyde, January 2016.

¹¹ Circular Economy Evidence Building Programme: Sector Study on Medical Technologies, RPA & University of Strathclyde, January 2016.

¹² Circular Economy Evidence Building Programme: Sector Study on Medical Technologies, RPA & University of Strathclyde, January 2016.

The scale of the potential opportunities of the biological resources for the Beer, Whisky and Fish sectors in Scotland was published in 2015¹³. The study found that biological waste and by-products from these three sectors amount to 4.6 million tonnes each year and if used in more circular ways it is estimated that the additional economic benefit would be £0.5-£0.8 billion and much higher if broader bio-economy resources are included.

This exercise will be funded via existing budgets within Zero Waste Scotland.

(h) Energy Recovery

Priorities here are focused on improving information for decision making. This is expected to improve the overall efficiency of investment in infrastructure.

Two studies¹⁴ relating to this area are being undertaken during the first half of 2016 which will help to inform future decision making.

There are not expected to be any new additional costs or impacts arising from the continuing policy action in this area.

(i) Landfill

Priorities here are focused on improving information for decision making and continuing support to improve landfill gas capture and infrastructure. This is expected to improve the overall efficiency of landfill infrastructure.

Two studies¹⁵ relating to this area are being undertaken during the first half of 2016 which will help to inform future decision making.

There are not expected to be any new additional costs arising from the continuing policy action in this area.

(j) Communications

Any communication plans to support the strategy and raise awareness of the opportunities from a circular economy will utilise existing communications budgets within Scottish Government and Zero Waste Scotland.

(k) Skills for a Circular Economy

The priorities contained within the strategy are focused on supporting development of education champions and curriculum materials and the exploring the development of a skills academy.

The work on education is expected to have significant benefits in preparing our younger generation for new skills over time. The cost of this will be accommodated

¹³ <http://www.zerowastescotland.org.uk/BeerWhiskyFish>

¹⁴ Zero Waste Scotland: Residual Waste Treatment Options for Scotland, Zero Waste Scotland: Dry Mixed Recycling Economics and Processing.

¹⁵ Zero Waste Scotland: Residual Waste Treatment Options for Scotland, Zero Waste Scotland: Dry Mixed Recycling Economics and Processing.

within existing Zero Waste Scotland and Education Scotland budgets.

The costs, benefits and impacts of a potential Skills Academy for the circular economy will be assessed via a separate detailed business case.

(I) Measuring Progress

Electronic Duty of Care

A mandatory edoc system that allows for online sharing, signing and recording of waste transfer notes (WTN) is one option for the introduction of an electronic system.

Benefits

- Reporting and administrative costs will be reduced by moving from paper to electronic format
- Compulsory use of the edoc system for non-hazardous controlled waste will make it easier and less time-consuming to check which businesses do not have valid waste transfer notes in place
- Flow analysis will reveal any instances where there is a mismatch between the amount of waste received and passed on by waste operators, helping to reveal where there may be cases of illegal dumping
- Flow analysis will also reveal any systematic attempts to misclassify active waste as inert material in order to avoid landfill tax

Costs

- Additional administrative costs associated with familiarising with the new system will arise during the transition phase.

The costs and benefits of introducing a mandatory edoc in Scotland were calculated in two parts. Firstly, the costs and benefits arising from the administrative changes required to operate the new paperless system and secondly the costs and benefits arising from impacts on business behaviour and waste crime. All costs and benefits were then monetised and compared against the business as usual baseline.

The main costs of edoc are developing a data tracking tool, bringing in supporting legislation and ongoing development costs that will decline over time. Government will meet these costs which were calculated at a maximum of £2 million rolled out over an eight year period but it should be noted that this is a maximum figure and the actual figure will likely be somewhat less.

Costs to businesses are mainly transitional and arise as a result of investing in new databases and the need to familiarise staff with the new system. These costs were calculated based on the number of Scottish waste producers and operators, the number of waste transfer notes processed and reporting activities within the waste sector.

The costs of waste crime to the Scottish economy are estimated¹⁶ to be £51.1 million. Introducing a mandatory edoc system would help reduce a number of illegal activities however the impacts will vary by activity.

Landfill tax collection is likely where edoc will have the most straightforward impact. It will be quick and easy for data analysts to identify issues for further investigation e.g. recoding of waste from non-inert to inert, enabling Revenue Scotland, assisted by SEPA, to reduce tax evasion activity.

Edoc will be critical to identify illegal sites, operations and the network of people involved. However, it will rely on resources being available within SEPA to carry out complex investigations. This may limit the number of investigations that can take place and hence the benefits that can be realised. But it may only take one or two big investigations to realise significant sums of evaded landfill tax, plus it will have a strong deterrent effect which will also realise benefits.

Flytipping is one activity that is likely to be impacted only very modestly because the parties involved are unlikely to be using edoc at all. Edoc's contribution in these cases will be to identify the lack of records rather than the presence of them.

Table 5 below illustrates the net cost benefit against the business as usual baseline that the introduction of a mandatory edoc system would have on administrative costs across the waste industry. Government bears the main costs of implementation but all other parties benefit as a result of the new system. The overall net benefit is £1.8 million calculated using a 10 year NPV, discounted at 3.5%.

Table 5. Mandatory Edoc. Net Impact on Administrative Costs by Sector 10 Year NPV (£ million)

Government	Local Authorities	Regulator	Waste Operators	Waste Producers	Total
- £2.66	£3.39	£0.04	£1.02	£0.01	£1.80

Table 6 below sets of the net cost-benefit of introducing a mandatory edoc in Scotland against the business as usual scenario. In addition to administrative costs, the wider impacts of reduced waste crime are shown. The net costs and benefits are expressed as 10 year net present values (NPV) discounted at 3.5%. The overall impact¹⁷ of edoc on levels of waste crime is shown for 5%, 10% and 15%. As illustrated even a relatively modest reduction in levels of waste crime brings significant benefits.

Table 6: Net Cost/Benefit of Mandatory Edoc & Impacts Due to Reduced Levels of Scottish Waste Crime (10 Year NPV)

Impacts	(millions)		
Reduction in Administrative Costs	£1.8		
5% Reduction in Waste Crime	£5.9	-	-
10% Reduction in Waste Crime	-	£12.9	-

¹⁶ http://www.esauk.org/esa_reports/ESAET_Waste_Crime_Tackling_Britains_Dirty_Secret_LIVE.pdf

¹⁷ Evaluation of impact of changes to UK legislation indicated levels of 4% to 14%. Evaluation of the Licensing Act 2003 (March 2008).

15% Reduction in Waste Crime	-	-	£19.3
Total	£7.7	£14.7	£21.1

A more detailed summary of the model is given in Appendix A.

Scottish Firms Impact Test

Nine firms of various size, location and activity were asked to complete a questionnaire and interviewed during the 10 week consultation period as part of the Scottish Firms Impact Test. The summary of responses is as follows:

Responses to Questionnaire

1. *Have you read the partial BRIA and the Circular Economy Consultation?*
 - a) Most respondents had at least read the sections of the consultation document, most relevant to their business, prior to the meetings. Where the consultation document had not been reviewed in this detail due to time pressures the relevant sections were identified and discussed at the meetings. This was also the case with the partial BRIA.
2. *Do you agree with the aspiration for greater circularity in the Scottish economy and the proposition that it can increase the resilience and competitiveness of a business?*
 - a) All respondents were positive about the aspiration for greater circularity and that it could contribute to a more competitive environment and greater resilience of businesses.
 - b) There could be 'unintended consequences' of diverting material to higher value circular uses if this material is already an important (perhaps economic lower value) input to other sectors – for example food and drink production waste which is, in some cases, an important source of animal feed to the Scottish agricultural sector. It is important to recognise the costs diverting this material away from existing uses and the potential implications of making another sector less competitive (e.g. if the agricultural sector has to increase spending on animal feed and the additional financial and carbon cost of transporting this – particularly in the case of small island economies).
3. *To what extent will the proposed actions or interventions, including a mandatory electronic duty of care mechanism, lead to particular costs or benefits for your company?*
 - a) Mandatory electronic duty of care system was viewed as potentially onerous by one respondent but contrastingly another respondent viewed this of being a benefit to the business. Overall others were neutral.
 - b) Few other comments on specific costs or benefits of proposed actions – broad view was general support to what was being proposed throughout, with additional actions proposed as detailed in response to questions 5 and 6.

4. *Are there financial, technical, informational or other barriers that are preventing your company from benefiting from adopting more circular approaches, such as offering repair services or finding ways to retain ownership of valuable products or components?*

- a) One firm stated that the fundamental constraint in developing and adopting more circular approaches is the investment risk created by recent changes in UK government fiscal instruments in the area of renewables.
- b) Previous investigations into the use of repaired/refurbished parts identified that buying new was sometimes more cost competitive.
- c) Perceptions about the quality of repaired/refurbished parts are also an issue.
- d) A recent feasibility study by one company and parts of the supply chain identified insufficient demand for a servicing/repair facility based on demand in Scotland (and this situation has been exacerbated by the recent uncertainty created by changes in UK government fiscal policy).

5. *Are there actions or interventions that you would like to see included or emphasised more in the partial BRIA and the Consultation?*

- a) The emphasis on changing consumer behaviour so that people consume less is very important but it is not easy to see how the actions/interventions in the consultation document address this at a strategic level.
- b) Needs to be more evidence developed of the circular economy working in practice rather than more policy/strategic level reports.
- c) Consumer responsibility is a necessary and complementary addition to producer responsibility. This could take the form of education, awareness and fiscal instruments to incentivize return at end of life.
- d) An additional activity to support a move to a more circular economy is to better understand and disseminate international best practice in remanufacturing of goods, parts and components relevant to the Scottish economy. This could be exploited via inward investment targeting and/or indigenous company development.
- e) In parallel to this, a study should be undertaken to understand the remanufacturing challenges (again relevant to the Scottish economy) that have yet to be solved internationally. These could then be the focus of innovation activity to develop value adding processes and technology that could be exploited from Scotland, internationally.
- f) Work should be carried out in support of a move from incineration and/or energy from waste using steam boilers to gasification. Gasification offers a more flexible model to respond to market demand for gas fuel, liquid fuel or a feedstock for chemical processes.
- g) Work is also required to understand the future provision of landfill at a regional

level to support the competitiveness of businesses that produce waste that can only be treated via landfill.

6. *Is there a specific action or intervention that would directly help your company to become more circular and improve competitiveness?*

a) The current common practice of burning or burying waste farm plastic by those producing waste agricultural plastic is restricting the potential for circular use of this material. Addressing this practice will increase the sustainability of existing recyclers of this material whilst helping to promote an expansion of those businesses in Scotland already involved in the collection and recycling of waste farm plastics.

b) A working group, including key stakeholders (such as farmers, retailers and film producers/recyclers) would be an effective way of developing a more circular approach to collection and recycling of this material. Such a working group could identify opportunities for increasing awareness amongst stakeholders leading to an increase in waste plastics collection and recycling in Scotland.

c) Innovation based challenge competitions could play an important role in addressing specific technical barriers to circular approaches.

7. *What changes to existing practices in your supply chain would help your company to become more circular and improve competitiveness?*

a) Existing regulation can act against circular approaches. For example, packaging regulation targets can lead to a preference for virgin material over recycled to achieve the same technical performance with less weight and these solutions can also result in layered composite packaging consisting of different polymer types which are difficult to recycle.

b) Contractual arrangements with OEMs may influence the scope for others in the supply chain to engage in repair/refurbishment/remanufacture so the OEMs should be included in new initiatives, where practical.

c) The behaviour of large plcs and OEMs is critical in achieving an effective circular economy. The design approach of these companies needs to change to facilitate circularity.

d) The drive to specify the very highest quality materials, often when this is not required, is reducing the potential for recycling and reuse.

e) Improved materials management and use within supply chains (especially with packaging) could have a major beneficial effect on materials consumption, reuse and recycling.

f) There is a lack of awareness, knowledge and practical implementation of circular practices in the design community and more work is required in this area.

8. *Is there anything else you wish to add?*

- a) A number of companies stated they had already been involved in circular practices for some time and had made significant investment in it
- b) Investment in infrastructure and awareness are paramount
- c) Two respondents raised the issue about lack of uniformity of collection systems being an issue to address with one questioning whether local authorities were best positioned to do this (indicating that a smaller number of co-ordinating authorities would reduce system differences and achieve economies of scale)

Competition Assessment

We will apply the Office of Fair Trading Competition Filter questions to the relevant actions as detailed in the required individual BRIA's and in the strategy.

Test run of business forms

This section will be informed by the required individual BRIA's and the strategy.

Legal Aid Impact Test

It is not envisaged that there will be any greater demand placed on the legal system since businesses and organisations will be the primary focus of the priorities. Accordingly, it is not considered that there will be any effect on individuals' right of access to justice through availability of legal aid or possible expenditure from the legal aid fund.

Enforcement, sanctions and monitoring

Where regulatory measures are proposed these will work within existing and established regulatory frameworks and programmes e.g. the Waste (Scotland) Regulations 2012 and Scottish Government Better Environment Regulation programme with SEPA. Any new regulations that may arise as a result of the strategy, which are not assessed here, will be subject to separate individual assessments.

Implementation and delivery plan

The strategy includes existing measures that are already on-going. Any proposed additional measures will formally commence implementation from the point where the proposals are finalised as a package. Timescales for the implementation of any new measures may vary from several weeks to several years and the proposals will be implemented, managed and monitored as an integrated package.

Post-implementation review

Post implementation review of the finalised proposals relating to legislation will be undertaken at points whenever other measures that may impact upon them are proposed or introduced, for example the 2016 EU Circular Economy Package.

Summary and recommendation

Option 2, Implementing Making Things Last – Circular Economy Strategy for Scotland is the preferred option.

The costs and benefits associated with the package of specific interventions selected to drive the transition to a more circular economy in Scotland, where not identified in this updated BRIA, will be developed as a series of individual BRIA's following publication of the strategy.

Declaration and publication

The Cabinet Secretary or Minister responsible for the policy (or the Chief Executive of non departmental public bodies and other agencies if appropriate) is required to sign off all BRIAs prior to publication.

Sign-off for Partial BRIAs:

I have read the Business and Regulatory Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options. I am satisfied that business impact has been assessed with the support of businesses in Scotland.

Signed:



Date:

23rd Feb 2016

Richard Lochhead MSP
Cabinet Secretary for Rural Affairs, Food and Environment

Scottish Government Contact point: Peter Stapleton, Zero Waste Team,
Environmental Quality Division

Appendix A: Model Summary Scottish Mandatory Edoc

Net Cost/Benefit of EDOC to Scotland	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Baseline Total	£ 1,508,575	£ 1,451,536	£ 1,394,496	£ 1,337,457	£ 1,280,417	£ 1,223,378	£ 1,166,338	£ 1,109,298	£ 1,052,258	£ 995,218
Scotland Only EDOC	£ 1,858,368	£ 1,676,057	£ 1,546,094	£ 1,418,402	£ 1,294,861	£ 1,172,320	£ 1,050,779	£ 929,238	£ 807,697	£ 686,156
Net Cost/Benefit (negative is cost)	£ -349,792	£ 224,521	£ 151,598	£ 280,945	£ 454,557	£ 497,517	£ 540,478	£ 633,979	£ 727,481	£ 825,861
NPV 10 Year	£1,809,494									
Net Cost/Benefit of EDOC to Waste Producers & Operators										
Baseline Total	£ 716,188	£ 659,328	£ 602,468	£ 545,608	£ 488,748	£ 431,888	£ 375,028	£ 368,550	£ 362,072	£ 355,595
Scotland Only EDOC	£ 716,188	£ 634,137	£ 504,582	£ 577,163	£ 194,073	£ 194,073	£ 194,073	£ 194,073	£ 194,073	£ 194,073
Net Cost/Benefit (negative is cost)	£ -	£ 25,191	£ 97,886	£ 31,555	£ 294,675	£ 237,815	£ 180,954	£ 174,477	£ 167,999	£ 161,521
NPV 10 Year	£1,038,375									
Cost of Waste Crime to Scotland										
Illegal Waste Sites	£ 20,200,000	£ 19,897,000	£ 19,598,545	£ 19,304,567	£ 19,014,998	£ 18,729,773	£ 18,448,827	£ 18,172,094	£ 17,899,513	£ 17,631,020
Tax Evasion	£ 14,100,000	£ 13,888,500	£ 13,680,173	£ 13,474,970	£ 13,272,845	£ 13,073,753	£ 12,877,646	£ 12,684,482	£ 12,494,214	£ 12,306,801
Fly Tipping	£ 16,800,000	£ 16,548,000	£ 16,299,780	£ 16,055,283	£ 15,814,454	£ 15,577,237	£ 15,343,579	£ 15,113,425	£ 14,886,724	£ 14,663,423
Total	£ 51,100,000	£ 50,333,500	£ 49,578,498	£ 48,834,820	£ 48,102,298	£ 47,380,763	£ 46,670,052	£ 45,970,001	£ 45,280,451	£ 44,601,244
EDOC Results in 5% Reduction in Waste Crime										
Illegal Waste Sites	£ 353,500	£ 348,198	£ 342,975	£ 337,830	£ 332,762	£ 327,771	£ 322,854	£ 318,012	£ 313,241	£ 308,543
Tax Evasion	£ 387,750	£ 381,934	£ 376,205	£ 370,562	£ 365,003	£ 359,528	£ 354,135	£ 348,823	£ 343,591	£ 338,437
Fly Tipping	£ 8,400	£ 8,274	£ 8,150	£ 8,028	£ 7,907	£ 7,789	£ 7,672	£ 7,557	£ 7,443	£ 7,332
Total	£ 749,650	£ 738,405	£ 727,329	£ 716,419	£ 705,673	£ 695,088	£ 684,662	£ 674,392	£ 664,276	£ 654,312
NPV 10 Year	£5,855,080									
EDOC Results in 10% Reduction in Waste Crime										
Illegal Waste Sites	£ 707,000	£ 696,395	£ 685,949	£ 675,660	£ 665,525	£ 655,542	£ 645,709	£ 636,023	£ 626,483	£ 617,086
Tax Evasion	£ 775,500	£ 763,868	£ 752,409	£ 741,123	£ 730,006	£ 719,056	£ 708,271	£ 697,646	£ 687,182	£ 676,874
Fly Tipping	£ 168,000	£ 165,480	£ 162,998	£ 160,553	£ 158,145	£ 155,772	£ 153,436	£ 151,134	£ 148,867	£ 146,634
Total	£ 1,650,500	£ 1,625,743	£ 1,601,356	£ 1,577,336	£ 1,553,676	£ 1,530,371	£ 1,507,415	£ 1,484,804	£ 1,462,532	£ 1,440,594
NPV 10 Year	£12,891,095									
EDOC Results in 15% Reduction in Waste Crime										
Illegal Waste Sites	£ 1,060,500	£ 1,044,593	£ 1,028,924	£ 1,013,490	£ 998,287	£ 983,313	£ 968,563	£ 954,035	£ 939,724	£ 925,629
Tax Evasion	£ 1,163,250	£ 1,145,801	£ 1,128,614	£ 1,111,685	£ 1,095,010	£ 1,078,585	£ 1,062,406	£ 1,046,470	£ 1,030,773	£ 1,015,311
Fly Tipping	£ 252,000	£ 248,220	£ 244,497	£ 240,829	£ 237,217	£ 233,659	£ 230,154	£ 226,701	£ 223,301	£ 219,951
Total	£ 2,475,750	£ 2,438,614	£ 2,402,035	£ 2,366,004	£ 2,330,514	£ 2,295,556	£ 2,261,123	£ 2,227,206	£ 2,193,798	£ 2,160,891
NPV 10 Year	£19,336,643									

10 Yr NPV Administrative Benefit Only of EDOC £1,809,494
 10 Yr NPV Plus Waste Crime Impact at 5% £7,360,579
 10 Yr NPV Plus Waste Crime Impact at 10% £14,709,539
 10 Yr NPV Plus Waste Crime Impact at 15% £21,946,156