# CIRCULAR ECONOMY PROPOSALS FOR SCOTLAND'S CLIMATE CHANGE PLAN

## Revising and updating Scotland's Climate Change Plan
## Proposals from Scottish Environment LINK's circular economy project

**October 2020**

### Introduction

Scottish Environment LINK is the forum for Scotland's voluntary environment community, with 38 member bodies representing a broad spectrum of environmental interests with the common goal of contributing to a more environmentally sustainable society.

This submission comes from Scottish Environment LINK's project: A circular economy for a fairer footprint, which is overseen by LINK's Economics Group. Many LINK members are also part of Stop Climate Chaos Scotland and LINK supports the proposals made on the Climate Change Plan by SCCS.

### Circular Economy in a Just and Green recovery

A more circular economy (CE) is also a more resilient economy, often embedding shorter supply chains and the re-shoring of manufacturing[1]. The economic opportunities associated with moving to a more circular economy in Scotland have been estimated at about £3billion in annual savings[2] and an estimated 14,600 jobs could be created in areas such as remanufacturing, recycling and providing services to aid a CE[3]. Moving towards a more circular economy is key to building back better – a number of opportunities are outlined by the Ellen McArthur Foundation[4] and WRAP[5].

### Circular Economy and Climate Change

In order to meet domestic climate change emissions targets and, more generally, to 'end our contribution to climate change' we need to transition to a more circular economy, and to focus on material use – reducing our consumption of virgin materials and making the most of materials already in use. To date, efforts to tackle the climate crisis have generally focused on a transition to renewable energy, complemented by energy efficiency. An Ellen MacArthur report finds that these measures can only address 55% of emissions. The remaining 45% comes from producing the cars, clothes, food, and other products we use every day[6]. A more circular economy can contribute to completing the picture of emissions reduction by transforming the way we make and use products. Green Alliance found that potential carbon savings from resource efficiency measures are greater than those already achieved by many of the (UK) government's other climate policies[7].

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[1] https://www.ft.com/content/246251d6-5d49-11ea-b0ab-339c2307bcd4

[2] https://www.zerowastescotland.org.uk/sites/default/files/Scotland%20and%20the%20Circular%20Economy%20(a%20report%20for%20the%20Scottish%20Government).pdf

[3] https://www.zerowastescotland.org.uk/sites/default/files/Jobs_Scotland_online6.pdf

[4] https://www.ellenmacarthurfoundation.org/news/covid-19-insights-build-back-better-with-the-circular-economy

[5] https://wrap.org.uk/sites/files/wrap/How%20a%20Circular%20Economy%20can%20help%20us%20Build%20Back%20Better.pdf

[6] https://www.ellenmacarthurfoundation.org/assets/downloads/Completing_The_Picture_How_The_Circular_Economy-_Tackles_Climate_Change_V3_26_September.pdf

[7] https://www.green-alliance.org.uk/resources/Less_in_more_out.pdf

Scotland's current Climate Change Plan[8] acknowledges the importance of a more circular economy in the Waste chapter. However, although the importance of actions 'higher up the waste hierarchy' are noted, the policies themselves relate to waste.

We propose that CE measures are embedded across the Climate Change Plan and propose the below additions.

## 1. Electricity

The Climate Change Plan focuses on generation of renewable electricity but should also consider the life-cycle carbon impact of electricity generating / storing / transmitting infrastructure. This infrastructure needs to be designed and constructed in such a way that material use is optimised and the carbon and material footprints are minimised.

- A **life-cycle approach to minimising material and carbon footprints** should be a condition of licenses and contracts to construct new electricity infrastructure.
- Support the on-going development in **recyclability of wind turbine blades**.

Other asks below in the 'buildings' section, are also relevant to construction of energy infrastructure.

Incineration produces electricity of high carbon intensity**.** Incineration, also now known as Energy from Waste, results in extremely high greenhouse gas emissions, with one tonne of CO2 typically released for every tonne of waste burned, meaning energy produced from incineration has a higher carbon intensity than the conventional use of fossil fuels[9]. In Denmark, the Government has recently decided that, in order to reduce carbon emissions, they need to incinerate less[10] and will be reducing their incinerator capacity over the coming years.

- **Given the carbon intensity of energy from waste, Government should review its role in electricity production in light of net zero targets.**

## 2. Buildings

Between 30 and 70% of the life-time carbon impact of buildings is from their non-use phase – the energy used in making and transporting the components of the buildings and managing them at the end of their life. There needs to be a presumption in favour of reusing and repurposing existing buildings and supporting construction procurement and design that embodies circular principles, including planning for long-term maintenance and re-use of components. Any demolition work should include a pre-demolition audit[11]. The Ellen MacArthur Foundation highlight the potential to make construction more circular and stresses that it needs to be supported by material re-use and recycling infrastructure[12]. A new report finds that carbon reductions of up to 50% can be delivered and £35bn generated for the UK economy by using closed-loop materials throughout the design process of infrastructure projects[13].

- **Align VAT rates on new-build and refurbishment**[14] (with other UK Governments)
- Ensure that **building regulations are updated** where appropriate in order to promote circular principles[15] and to consider embodied carbon.
- Create **incentives for a minimum content of renewable and natural materials** in buildings.

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[8] https://www.gov.scot/publications/scottish-governments-climate-change-plan-third-report-proposals-policies-2018-9781788516488/
[9] https://ukwin.org.uk/files/pdf/UKWIN-2018-Incineration-Climate-Change-Report.pdf
[10] https://stateofgreen.com/en/partners/state-of-green/news/new-political-agreement-to-ensure-a-green-danish-waste-sector-by-2030/
[11] Austria has introduced the Recycled Construction Materials Regulation. The regulation sets an obligation to carry out a pre-demolition audit for potentially reusable or hazardous construction components and selective demolition requirements.
[12] https://www.ellenmacarthurfoundation.org/our-work/activities/covid-19/policy-and-investment-opportunities/the-built-environment
[13] By MI-ROG https://aecom.com/content/wp-content/uploads/2020/08/MI-ROG_white-paper-4_circular-economy_2020.pdf
[14] https://www.architectsjournal.co.uk/news/vat-chance-can-tax-reforms-spur-a-retrofit-renaissance
[15] Such as modular design with easy to repair and re-useable components

- Require consideration of the **waste hierarchy**[16] in planning applications.
- Support the development and promotion of a standardised format for **material passports**[17] in Scotland and require the use of material passports in new buildings.
- Fund, support and endorse a means of **centrally collecting consistent and robust data** about construction resources and waste.
- Require **pre-demolition and pre-refurbishment audits**[18] to be applied to projects above a certain size. These should include a clear demarcation of where unused materials from the site are going, to ensure better traceability of resources
- **Public sector leadership** through the introduction of a requirement (eg a Built Environment Circularity Commitment) that publicly funded construction projects should meet the Net-Zero Carbon in Public Sector Buildings (NZCPSB) Standard and a) be assessed on total life cycle costs and carbon; b) look to retrofit solutions first and c) look to procure circular products (reused, designed for disassembly, recyclable).

## 3. Transport

There is a need to be awareness of the climate change impact of the non-use phase of vehicles - the emissions associated with manufacturing and end of life processes. Where the ratio of non-use phase emissions: use phase emissions is highest, policy should seek to reduce the quantity of vehicles; as well as making them more efficient and electric. For private cars in particular, due to the fact that they are idle for a considerable proportion of their life, this means we should aim for less cars altogether.

Reduce the need and incentive for people to own cars

- Make **active travel** more attractive:
  - Cycle lanes physically separated from traffic along arterial routes into all towns and cities
  - Safe pedestrian / cycle access into all villages
  - Integrated network of local walking and cycling routes using quiet roads in each town and city
  - Integration of walking and cycling with public transport

- Invest in and subsidise **public transport**
- Support **city car clubs**, bike and scooter schemes
- Incentives for those who **share journeys**.

## 4. Industry

As well as focusing on increasing the energy efficiency and decarbonizing industry, we need to actively support industries that contribute to a more circular economy – one that make much better use of material.

Production should use renewable or secondary materials and focus on minimising the life-cycle environmental impact of products, such that there is minimal waste and pollution associated with the production, use and after-use phases. Products need to be made to last a long time, be easy to repair and disassemble into re-useable parts and materials. We also need a suite of industries to support a circular economy, including domestic reprocessing of materials.

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[16] The waste hierarchy is commonly shown as an inverted triangle with layers of descending order of priority when considering waste: Reduce, Reuse, Repair, Recycle, Recovery, Dispose. Effort should be focussed high up the hierarchy, such that disposal is the last resort after all other 'layers' have been maximised in order of priority https://www.gov.scot/publications/guidance-applying-waste-hierarchy/

[17] for example using Building Information Modelling (BIM) https://ukbimframework.org/en/ , to improve productivity and reduce waste. BIM is a collaborative way of working underpinned by digital technology. Passports detail the materials used and how materials and components can be recovered and this information is passed on to subsequent owners / managers of buildings. Currently BIM is required of large projects, but not widely used across the industry

[18] https://www.designingbuildings.co.uk/wiki/Pre-demolition_audit Austria has introduced the Recycled Construction Materials Regulation. The regulation sets an obligation to carry out a pre-demolition audit for potentially reusable or hazardous construction components and selective demolition requirements.

Asks:

- **Fiscal incentives**[19] and use of Section 82[20] to encourage the uptake of secondary materials and make them economical to produce.
- **Product policy** – implement European CE Action Plan (2020) and eco-design directives and use new powers forthcoming under the UK Environment Bill to set product standards on resource efficiency and labelling.
- **Extended producer responsibility** – make producers responsible for the full life-cycle costs and end of life management of their products. Scottish Government will have powers to introduce new EPR schemes under powers in the UK Environment Bill.
- Require **material disclosure** on all products.
- Require **industry to publicly report** on their material and carbon footprints.
- Require industry to publicly report on their waste.

## 5. Waste

The Climate Change Plan states the *Waste sector covers the use of resources, including maximising the reuse, recycling and recovery of resources where products and materials are kept in high value use for as long as possible*; and rightly notes the importance of a CE to reducing waste and emissions. However, it is thin on concrete policy proposals which are mainly focused on recycling, food waste and landfilling related targets.

It is worth noting that, although figures show GHG emissions reduction of 75% in the waste sector between 1990 and 2015, this is in part due to the fact that emissions from Energy from Waste are attributed to the 'energy' sector rather than 'waste'[21].

In order to reduce waste and all the emissions embodied in materials, additional policy actions, higher up the waste hierarchy, are needed:

- **Introduce the Circular Economy Bill, with headline targets on reducing our overall consumption of raw materials (as in the Netherlands[22]) and our carbon footprint; and a duty to produce 'Resource Reduction Plans' which map out how to reduce our footprints[23], obligations on different sectors and how to address problematic materials.**
- Publish **annual material flow accounts**, which show the flow of different materials through our economy, including our material footprint; annually to inform policy[24].
- **Tackle problematic materials and pollution**. We need to end the unnecessary use of materials that are difficult to recycle and harmful chemicals in products (such as bisphenol in receipts) to enable safe recycling. Government should commit to comply with EU REACH regulations[25]. We need to ban the unnecessary use of harmful chemicals and ensure traceability of chemicals in products.
- **Single-use items** need to be phased out where there are practicable reusable alternatives. The adoption of re-useable alternatives should be actively supported and promoted. Ireland has recently committed to all packaging being re-useable or recyclable by 2030[26]. Scotland should do the same.
- Introduce an **Extended Producer Responsibility framework** with the intention that Producer Responsibility becomes the norm with producers / retailers being responsible for the lifecycle impact of their products and

[19] Such as the UK plastic tax
[20] Section 82 in Scotland's Climate Change Act (2009) allows for minimum recycled content requirements to be set
[21] Scottish Government report GHG emissions against the following sectors: energy supply, business, industrial processes, transport, international aviation and shipping; public; residential; agriculture; land use, land-use change and forestry (LULUCF); and waste. https://www.gov.scot/publications/scottish-greenhouse-gas-emissions-2018/pages/1/#:~:text=In%202018%2C%20Scottish%20source%20emissions,0.6%20MtCO2e%20increase.
[22] https://www.government.nl/topics/circular-economy/circular-dutch-economy-by-2050
[23] This will also inform the Environment Strategy Outcomes Pathway on international footprints
[24] Recommended in a recent report for ZWS https://www.zerowastescotland.org.uk/metrics
[25] https://ec.europa.eu/environment/chemicals/reach/reach_en.htm
[26] https://www.gov.ie/en/publication/4221c-waste-action-plan-for-a-circular-economy/

incentivised to minimise this. In the first instance, it should be applied to additional identified product groups, such as carpets[27] and furniture[28].

- Introduce **resource efficiency standards and labelling requirements** for products[29]. For example, a standard test for microfibre loss from garments by the end of 2022, and information on the repairability of products and full material disclosure[30] to facilitate increased re-use and recycling.
- Investment in **Repair and Reuse Hubs**, in partnership with social enterprises, to create jobs[31], reduce waste and reduce our environmental footprints[32]. In parallel with improved recycling services[33], Local authorities (or another public agency) should be tasked with ensuring that households have access to sharing, repairing and re-use services. A re-use target should be introduced in line with EU recommendations and all recycling centres should have re-use facilities.
- **Invest in recycling facilities** to meet our recycling target of 70% by 2025. Although the £70 million announced in the Programme for Government is welcome, more is needed. Wales has invested over £1 billion since 2000[34]. Scottish Government should match this.
- Insist on **circular public procurement**. Public authorities are major consumers - by using their purchasing power to choose environmentally friendly goods, services and works, they can make an important contribution to sustainable consumption and production. Procurement decisions need to be screened against environmental impacts, including footprints[35]. Procuring departments should follow the EU Green Public Procurement Guidelines; report on 'circular spending' (service hire or product sharing, repairing of existing products, re-use, or purchasing second-hand); and demonstrate a year on year reduction in footprints per £ spent.
- **Fiscal instruments** to incentivise circularity. Scottish Government should introduce charges on environmentally harmful items[36] to drive behaviour change, consider whether the bands for Landfill tax are appropriate[37]. In collaboration with other UK Governments, Scottish Government should consider: a carbon tax, reduced VAT on repair, refurbishment and re-use, an incineration tax.
- Fully implement the **EU Single-Use-Plastics Directive.**
- Put the **food waste reduction target** of 33% (from 2013) by 2025 on a statutory footing, increasing to 50% by 2030 to be in line with the SDGs.
- **Remove the rural exemption** for food waste collection.

## 6. Land use/ land use change and forestry (LULUCF) and Agriculture

A central tenet of a CE is that it is restorative, building the natural assets on which we all rely. As such, land use needs to be regenerative and we need to assess and improve the condition of our soil which has huge potential to store carbon. A circular system also minimizes leakages, usually forms of pollution, so inputs need to be managed precisely and waste avoided. Many of the agro-chemicals used have high carbon footprints and excess fertilizers

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[27] https://changingmarkets.org/portfolio/carpet-recycling/

[28] Making Things Last https://www.gov.scot/publications/making-things-last-circular-economy-strategy-scotland/

[29] The UK Environment Bill 2020 includes powers for Scottish Ministers to do this, relating to the life-cycle impact of the product on the natural environment.

[30] Material disclosure must include chemical content to ensure that more materials can be recycled safely.

[31] repair and reuse create many more jobs than recycling, incineration or landfill http://www.rreuse.org/wp-content/uploads/Final-briefing-on-reuse-jobs-website-2.pdf

[32] https://www.scotlink.org/scotland-needs-to-embrace-reuse-as-we-seek-to-recover-from-covid-19/

[33] The 2020 PfG commits to a £70m fund to improve local authority refuse collection infrastructure and develop a new route map to reduce waste and meet our waste and recycling targets for 2025 https://www.gov.scot/publications/protecting-scotland-renewing-scotland-governments-programme-scotland-2020-2021/

[34] https://gov.wales/how-wales-became-world-leader-recycling

[35] The Italian Code for Public Contracts (Legislative Decree 50/2016, as modified by legislative decree n. 57/2017) in Article 3 4, sets mandatory environmental sustainability criteria that must be applied by public authorities in public procurement. It sets the waste prevention criteria: efficiency and savings in the use of resources, reduction in the use of hazardous substances and quantitative reduction in waste products, as public procurement minimum environmental criteria for 11 product/service categories, such as furnishing, building work, electronics, textiles, catering, energy services, building management services, etc.

[36] Such as single use cups

[37] We understand that the existing low landfill tax rate for soil makes it uneconomical to treat contaminated soil

produce nitrous oxide, a greenhouse gas[38]. We need to reduce and optimise the use of inputs (e.g. pesticides, fertilisers).

Scottish Government should:

- Ensure we make use of by-products and waste through a strategic approach to developing our bioeconomy and developing a Protein Strategy[39].
- **Nutrient budgeting** for P and C, as well as the planned work on N.
- Bring forward a **National Soils Plan** with ambitious targets to increase soil carbon, a duty on land managers to maintain and enhance soil carbon levels and to prevent soil erosion.
- Introduce a **levy** to be paid on any activity which **seals soil** (and therefore destroys its regenerative capacity).
- Engage a **National Soils Officer** in Scottish Government.
- Adopt the **targets in the EU's Farm to Fork Strategy**[40], to reduce the use of fertilisers by 20% by 2030, and the use of chemical pesticides by 50% by 2050.
- Building on the recent demand for local food, **support local food initiatives** which shorten supply chains and reduce the footprints of our food and farming system[41]. As part of this, the Local Food Strategy announced in the Programme for Government[42] should be developed and delivered.

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[38] The use of nitrogen in agriculture leads to the emissions of nitrous oxide to the atmosphere. In 2017, N2 O emissions from agriculture accounted for 43% of agriculture emissions and 3.9% of total anthropogenic emissions in the EU (EEA (2019), Annual European Union greenhouse gas inventory 1990-2017 and Inventory report 2019).

[39] https://www.zerowastescotland.org.uk/press-release/food-reform-vital-climate-goals#:~:text=%E2%80%9CA%20protein%20strategy%20for%20Scotland,from%20everything%20which%20farms%20produce .

[40] https://ec.europa.eu/food/sites/food/files/safety/docs/f2f_action-plan_2020_strategy-info_en.pdf

[41] Some examples in this blog http://www.nourishscotland.org/desire-lines-what-our-food-practice-during-covid-tells-us-about-the-food-system-we-want/

[42] Programme for Government https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2020/09/protecting-scotland-renewing-scotland-governments-programme-scotland-2020-2021/documents/protecting-scotland-renewing-scotland/protecting-scotland-renewing-scotland/govscot%3Adocument/protecting-scotland-renewing-scotland.pdf?forceDownload=true