



# Insights into Statutory Obligations of Circular Economy Strategies

What this means for Scotland's  
Circular Economy Bill

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# Executive summary

This paper provides an overview of existing legislation and the duty it places on governments to publish circular economy (CE) or similar strategies in Europe and beyond. It includes an analysis of legislation on the topics of waste management and climate change, as well as circular economy legislation and strategies. It also identifies key trends in these pieces of legislation and strategy design, and accordingly provides recommendations for the potential statutory obligation placed on Scottish Ministers to publish a circular economy strategy in Scotland's Circular Economy Bill.

In total, this desktop research looked at 24 different pieces of legislation spanning circular economy, waste management, and climate change. Within the research only six discrete circular economy legislation examples were identified. The four chosen legislative examples all have a statutory obligation to create circular economy strategies – Ireland, Andorra, China, and France – and two have a statutory obligation to create waste management plans – Spain and Germany.

This suggests that some countries are currently utilising a different approach to circular economy legislation, one in which circular economy principles are embedded in waste management efforts. This could be for a number of reasons, for example they remain at an early stage in developing their CE thinking and approach and have yet to form an overarching and agreed position on a legislative approach to CE legislation. **Overall, circular economy strategies are much more common than circular economy legislation indicating that many countries have adopted a voluntary approach to circular economy strategy development.** Climate change legislation – in Scotland, the Netherlands, and Vietnam – was also looked at to provide general guidance on statutory obligations for strategies related to circular economy principles.

From the research carried out, it remains clear that CE legislation and statutory obligations remain very much in a 'learning' and early development space, both in Europe and further abroad. It is also clear that a varied number of drivers play a role in how and why a country (or region) makes decisions on their approach to the CE, including for example their existing approach to resource management and wider related policies, political priorities and pressures, their existing economy and priorities for growth, and for EU Member states - EU-wide Directives.

While there may not be a significant number of existing or well-established policy examples to draw on, the proposed CE Bill, including the proposal for a statutory CE strategy does present an opportunity for the Scottish Government to be at the forefront of implementing legislation to drive the circular economy in Scotland.

The following list contains a number of key and repeating findings across statutory obligations and strategies that have been considered as part of this research. As this remains an immature area, the following list is not definitive or final and is likely to change as countries continue to navigate the circular economy space. The following list lays out key findings identified from statutory obligations and strategies:

- **Responsibility given** to minister for environment/climate, occasionally ministry of economic affairs is combined with environment, and when appropriate, circular economy department.
- **Frequency of CE strategy or similar review** is between 3 and 6 years.
- **Sectors included** construction and demolition, food (including agriculture), retail (mainly textiles), plastics, electronic equipment, and bioeconomy.
- **Interrelation of** climate and waste action plans, national development plans, environment, biodiversity and marine strategies, bioeconomy strategies, and industrial strategies.
- **Public consultation** required in drafting of strategies.
- **Qualitative and quantitative targets** referenced in legislation with strategies providing further detail such as carbon, consumption, waste reduction, and material recovery targets.
- **Impact assessments** are required at times with environmental assessments for legislation not solely focused on circular economy and poverty impact assessment on one occasion (Ireland).
- **UN Sustainable development goals** served as guiding principles and their targets and indicators were often used for national targets and indicators.

While there are numerous criteria that can be placed in a statutory obligation for a circular economy strategy, it is **ultimately recommended that the obligation be as broad as possible**. In this way, the Scottish Government can reform strategies as data, evidence and evaluations are released or updated while also being appropriate for the social and economic contexts occurring at that time.

#### **Update – June 2023**

This paper was researched and written in 2022. Therefore, the policy and examples presented within this report may not be the most current versions or conclusive. Zero Waste Scotland is continuously developing knowledge of the circular economy (CE), through research to increase our evidence and insight to help achieve our goals to inform policy, and motivate individuals and businesses to embrace the environmental, economic, and social benefits of a circular economy.

Zero Waste Scotland supports the Scottish Government with policy and legislation development relating to the circular economy on an ongoing basis.

# 1 Introduction

It remains worth noting that the circular economy legislative landscape is still developing. Circular economy experts<sup>1</sup> suggest this is because key actors lack a foundational understanding of circular economy principles, which vastly differ from the linear economy that society is used to, preventing the wide scale implementation of circular economy policies.<sup>2</sup> On the other hand, concepts such as waste management and climate change action are more widely understood, and many countries have detailed legislation in place. As these concepts are encompassed in the circular economy, it is possible to use such legislative examples as guidelines for how a circular economy strategy could be included in Scotland's proposed Circular Economy Bill (hereafter referred to as 'the Bill').

The development of the Bill may provide an opportunity to help address a number of obstacles that have limited the adoption of the circular economy in Scotland. Examples of common obstacles identified in literature are: lack of access to information<sup>3</sup>, material efficiency in production (i.e., policies for reuse, repair and remanufacturing; green public procurement; improving secondary materials market)<sup>4</sup>, and absence of placing human wellbeing as a priority (related to sustainable development)<sup>5,6</sup>. The need to promote wellbeing is now even more essential given the rising cost-of-living crisis and the energy transition. The Bill will need to keep the health of people, the environment, and the economy as central components to ensure it contributes to Scotland meeting its national outcomes<sup>7</sup> and ambition for a wellbeing economy. It should also regard to [Scotland's Just Transition](#) ambitions, [Scotland's National Strategy for Economic Transformation](#) and other policies.

The [Ellen MacArthur Universal Policy Goals](#) could serve as a useful starting point on what could be focused on in the Bill, in particular obligations for a circular economy strategy to overcome some of the obstacles. This includes the need to: stimulate design for the circular economy, make the economics work, invest in innovation, infrastructure, and skills, and collaborate for systems change.

While a strategy alone cannot guarantee the realisation of a circular economy, it can certainly provide a boost to Scotland's journey by bringing together policies beyond legislation and give a clear indication of priority sectors and systems, and the direction of travel for businesses and wider stakeholders.

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1 Stahel. Policy for material efficiency – sustainable taxation as a departure from throwaway society (2013) - <https://doi.org/10.1098/rsta.2011.0567>

2 Stahel. Policy for material efficiency – sustainable taxation as a departure from throwaway society (2013) - <https://doi.org/10.1098/rsta.2011.0567>

3 UK parliament Designing a circular economy research briefing (2016) - <https://post.parliament.uk/research-briefings/post-pn-0536/>

4 Milios. Advancing to a circular economy three essential ingredients for a comprehensive policy mix (2017) - <https://link.springer.com/article/10.1007/s11625-017-0502-9#:~:text=The%20three%20policy%20areas%20are,for%20improving%20secondary%20materials%20markets>

5 Murray et al. The circular economy an interdisciplinary exploration (2017) - <https://doi.org/10.1007/s10551-015-2693-2>

6 Velenturf & Purnell. Principles for a sustainable circular economy (2021) - <https://doi.org/10.1016/j.spc.2021.02.018>

7 <https://nationalperformance.gov.scot/what-it>

# 2 Context

## 2.1 Principles

While the circular economy legislative and policy landscape is still relatively in its infancy, we can look to more established areas such as waste management and climate change legislation. Generally they support the core principles of a circular economy even if unintentionally, and remain relevant to, and should naturally support, the development of Scotland's Circular Economy Bill. Walter Stahel's circular economy principles serve as a reminder of what is to be achieved through a strategy and help to identify which legislative examples can assist Scotland in its legislation. Stahel's core circular economy principles are<sup>8</sup>:

- The smaller the resource circulation (activity wise and geographically) the more profitable and resource efficient it is.
- Material loops are ongoing so materials can be used in different processes and are seldom considered waste.
- The longer the materials are used the more profitable an economy is.
- Continued ownership of materials and products is cost-efficient.
- A circular economy needs functioning second hand product and materials markets.

## 2.2 The Scotland Policy Context

Scotland's legislative and policy landscape already provides a framework for which any statutory obligation to publish a circular economy strategy would need to work in:

- **The National Performance Framework (2018)**<sup>9</sup>: national outcomes of environment and economy are key part of Scotland's commitment to achieving the UN Sustainable Development Goals (SDGs), particularly Goal 12: Sustainable consumption and production patterns.
- **The National Waste Management Plan for Scotland Regulations (2007)**<sup>10</sup>: a plan that contains policies related to waste prevention, reuse, and waste management which is a translation of the European Commission Waste Directive<sup>11</sup> into the Scottish context.
- **The Waste (Scotland) Regulations (2012)**<sup>12</sup>: put a ban on any metal, plastic, glass, paper, card and food collected separately for recycling from going to incineration or landfill, and businesses to have food waste collected separately.
- **Climate Change Plan Update (2020)**<sup>13</sup>: areas for focus related to circular economy are reduction in raw material use in products, responsible production through reuse and repairs, and maximise value from waste and energy.

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8 Stahel. Policy for material efficiency – sustainable taxation as a departure from throwaway society (2013) - <https://doi.org/10.1098/rsta.2011.0567>

9 <https://nationalperformance.gov.scot/what-it>

10 <https://www.legislation.gov.uk/ssi/2007/251/made>

11 [https://environment.ec.europa.eu/topics/waste-and-recycling/waste-framework-directive\\_en](https://environment.ec.europa.eu/topics/waste-and-recycling/waste-framework-directive_en)

12 <https://www.legislation.gov.uk/ssi/2012/148/contents/made>

13 <https://www.gov.scot/publications/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/>

- **The Environment Strategy for Scotland (2020)**<sup>14</sup>: framework to achieve net zero and develop a circular economy where Scotland uses and reuses resources wisely and ends the throw-away culture.
- **Making Things Last (2016)**<sup>15</sup>: previous circular economy strategy which focuses on the four key areas of food and drink (and the broader bioeconomy), remanufacture, construction and the built environment, and energy infrastructure.
- The recently published **Biodiversity strategy**<sup>16</sup> signals the Scottish Government's ambitions to end biodiversity loss by 2030 and restore/regenerate biodiversity by 2045. It focuses on restoring and regenerating land and marine biodiversity acknowledging that using resources sustainably is essential to tackling both the climate and nature crises.
- The **Circular Economy Route Map**, due in 2023, is focused on reducing waste and meeting our existing waste and recycling targets for 2025 and looking beyond in terms of how the waste and resources sector will contribute towards Scotland's journey towards net zero.

## 2.3 The Consultation

This paper was created to help inform the Circular Economy Strategy obligation proposal for the Scottish Government's Consultation on Proposals for a Circular Economy Bill. In 2016, Scottish Government published its non-statutory CE strategy 'Making Things Last: A Circular Economy Strategy for Scotland'. The proposal in the current consultation would strengthen this approach by placing a duty on Scottish Ministers to publish and reform a Circular Economy Strategy every 5 years.

A CE strategy would both sit in the wider framework of the Environment Strategy for Scotland and build on Scotland's Making Things Last strategy (2016). The consultation proposed the new strategy would include plans on reducing consumption, mainstreaming circular economy principles in key sectors, developing a monitoring and indicator strategy, developing targets, and reporting annually on progress.

Making Things Last is focused on the four areas of food and drink (and the broader bioeconomy), remanufacture, construction and the built environment, and energy infrastructure with actions on:

- Products to be designed for longer lifetimes.
- Improvement in the capture of items for reuse.
- Empowerment of Scotland's repair sectors.
- Growth of the remanufacturing sector.
- Recycling to be routine in businesses and households.
- Strengthening of producer responsibility.
- Efficient use of biological resources.
- Public awareness of ending throw-away culture.
- Development of skills for a circular economy.
- Improvement of indicators to measure progress.
- New Scottish food waste reduction target.

<sup>14</sup> <https://www.gov.scot/publications/environment-strategy-scotland-vision-outcomes/documents/>

<sup>15</sup> <https://www.gov.scot/publications/making-things-last-circular-economy-strategy-scotland/documents/>

<sup>16</sup> <https://www.gov.scot/publications/scottish-biodiversity-strategy-2045-tackling-nature-emergency-scotland/>



Significant changes have occurred since Making Things Last was released in 2016 – EU Directives and plans, the cost-of-living crisis and climate related events to name a few. The proposed Circular Economy Bill provides Scotland with the opportunity to build on previous efforts while defining and embedding circular economy priorities in the context of current challenges.

## 3 Circular economy legislation with obligatory circular economy strategies

There are only a handful of circular economy legislation examples – Ireland, Andorra, China, and France – available, to understand how a statutory obligation for a circular economy strategy can be written. Most of them are relatively recent, with no data from evaluation available making it difficult to provide a definitive answer on the effectiveness of the legislative approaches.

To make matters more complicated, the approaches taken by each country to their circular economy legislation are also vastly different, likely due to the national context in which they are written. For example, unlike Scotland, all four of the countries are unitary states that have a central government responsible for all matters – notably trade, tax, and energy which are important for circular economy ambitions – along with a single market.

Furthermore, the countries also have diverse economic climates (ranging from China as an economic engine with the 2<sup>nd</sup> largest GDP in the world to Andorra being the 165<sup>th</sup>) and differing access to natural resources and materials. The analysis conducted for this paper does not take these factors into consideration at this stage, but does acknowledge that these factors would have influenced how the countries chose to approach circular economy legislation and policies.

For this reason, the four legislation examples explored below serve as a snapshot of what could potentially be placed in a statutory obligation for a circular economy strategy in Scotland's Bill. The Scottish Government will need to adapt their own approach to any statutory obligation while keeping Scotland's own political, economic, and social constraints in mind.

Further information on a number of the following legislation examples can be found in Annex 1.

### 3.1 Ireland

Ireland's new Circular Economy Act - Circular Economy and Miscellaneous Provisions Act 2022<sup>17</sup>, was signed into law in July 2022. It is the most detailed circular economy Act amongst those identified in this research. It specifies the minister responsible (Minister for the Environment, Climate and Communications), the requirement to review every three years, related policy documents that should be embedded within the strategy (Waste Action Plan for the Circular Economy, the Climate Action Plan, the National Biodiversity Action Plan to name a few), key sectors and targets. While other pieces of legislation require a public consultation, Ireland's legislation is unique by emphasising the need to include organisations that represent economically or socially disadvantaged persons, and those living with disabilities in the consultation process. There is also an expectation that a poverty impact assessment will be carried out. Again, such a **focus on the involvement of and impact on equalities groups is not seen in the other circular economy (or related) legislation.**

Furthermore, The Whole of Government Circular Economy Strategy 2022 – 2023<sup>18</sup>, was published in December 2021 prior to the Circular Economy Act 2022. As the Bill was published after the strategy, the expectation would be for the statutory obligation in the Bill to encompass elements of the strategy – and this is reflected when comparing the two. The circular economy strategy seems to have been an interim measure to get the transition towards circularity started with the Bill acting as the legal instrument requiring the Government to continue publishing and updating circular economy strategies with measures that are fit for purpose.

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<sup>17</sup> <https://www.oireachtas.ie/en/bills/bill/2022/35/>

<sup>18</sup> <https://www.gov.ie/en/publication/b542d-whole-of-government-circular-economy-strategy-2022-2023-living-more-using-less/>

The table below shows how the strategy evolved into the Bill.

### Ireland: Strategy vs. Bill/Act

Requirement	Strategy (2021)	Bill/Act (2022)
Responsibility of	Department of the Environment, Climate and Communications.	Minister for the Environment and Climate Communications.
Frequency	It is anticipated that the Strategy will be updated in full every 18 months to 2 years.	Circular economy policy objectives and priorities to be set out every 3 years.
Targets	Makes passing mention of waste targets but does not elaborate. Instead, the scope adding on new targets is stated.	Reduction in material resource consumption. Increase in use of reusable products and materials. Increased levels of repair and reuse of products and materials. Improved maintenance and optimised use of goods, products, and materials. Promote the use of criteria relating to the circular economy in public procurement.
Sectors	Construction and Demolition Agriculture Textiles Bioeconomy (removed from Act)	Construction (demolition not explicitly mentioned). Agriculture. Textiles . Retail (new). Packaging (new). Electronic equipment (new).
Public awareness measures	Yes – Improving consumers’, households’ and businesses’ basic understanding of the circular economy.	Yes – Measures to inform, and promote dialogue with, the public regarding the challenges and opportunities in the transition to a circular economy.
Reference to UN Sustainable Development Goals (SDGs)	Yes – As part of Ireland’s larger global effort to achieve the circular economy the strategy mentions UN SDG of achieving sustainable consumption and production patterns.	Yes – While creating the circular economy strategy, Minister must take into account the UN SDGs.
Reference to public procurement	Yes – Green Public Procurement efforts underway are outlined.	Yes – Strategy should promote the use of criteria relating to the circular economy in public procurement.

### 3.2 Andorra

The statutory obligation for a circular economy strategy in Andorra's Circular Economy Law 2022<sup>19</sup> emphasises the need for the strategy to have a strong relationship with the National Waste Plan as both strive for efficient waste management. **For this reason, the law mandates the integration of the National Waste Plan – which includes a study on the waste flows in Andorra – into the strategy.** However, the strategy is also to expand beyond waste management by identifying how specifically the required target of increase in the reuse and recycling of waste will be met.

However, what is most interesting about Andorra's statutory obligation is its **requirement on the circular economy actors – except for consumers – to provide the public administration with necessary quantitative and qualitative data** that will help the preparation and review of the strategy. Although many strategies themselves explore data and digitalisation, Andorra's circular economy legislation is the only one to require this by law.

The responsibility to create the strategy and review it every 5 years is given to the Ministry of Environment who must also carry out a consultation process that provides space for all the sectors, public administrations, employers, and citizens to provide input in its preparation.

### 3.3 China

China is one of the early adopters of circular economy legislation with its Circular Economy Promotion Law<sup>20</sup> being released in 2008 – though limited detail is provided in the law's statutory obligation for a circular economy strategy. **The approach China has taken is to mandate the creation of circular economy development plans at the national and regional levels.** The law requires that regardless of which level the development plan is created it should cover the objective, scope, major contents and tasks, and safeguard measures of the plan. On indicators, the plan should include resource output capacity, waste reutilising rate, and waste recycling rate. It is also important to note the law does not identify specific sectors that need to be included in the plan, the plan's relation to other policy documents, and include a public engagement requirement – all points that have been fairly standard across Ireland's and Andorra's statutory obligations.

### 3.4 France

Unlike the previously mentioned statutory obligations that focus on all components of the circular economy, **France's Law Relating to the Fight Against Waste and the Circular Economy<sup>21</sup> introduces a statutory obligation that is directly aimed at achieving France's objective of ending single-use plastic packaging by 2040.** The national strategy for the reduction, reuse, reuse and recycling of single-use plastic packaging is to identify how the particular actions of "mobilisation of extended producer responsibility sectors and their eco-modulations, the adaptation of the rules for marketing and distribution of packaging as well as the use of any economic tools" will support ending single-use plastic packaging. The strategy as a whole is to be drawn up and revised through collaboration with the industrial sectors, local authorities, and consumer and environmental protection associations.

19 [https://www.bopa.ad/bopa/034086/Pagines/CGL20220715\\_13\\_25\\_25.aspx](https://www.bopa.ad/bopa/034086/Pagines/CGL20220715_13_25_25.aspx)

20 <https://leap.unep.org/countries/cn/national-legislation/circular-economy-promotion-law-peoples-republic-china>

21 <https://www.legifrance.gouv.fr/jorf/id/JORFARTI000041553795>

# 4 Circular economy legislation with obligatory waste management plans

## 4.1 The Influence of the European Commission

The aim behind the European Commission's Directive 2008/98/EC on Waste and Repealing Certain Directives<sup>22</sup> is to protect the environment and human health by requiring member states to tighten their waste management practices. While most of the member states have embedded this directive in their waste management or environment acts, some member states – such as Spain and Germany – have followed through on this directive and transposed its requirements of timeline for evaluation, targets, and measures to improve waste management, in circular economy legislation at national and/or regional levels.

Although this is one approach adopted by countries (likely due to national governments still navigating the newly formed circular economy legislative arena) it is not necessarily the best approach for Scotland's Circular Economy Bill. This is because a waste management plan should not be used as a substitute to a circular economy strategy given waste management only looks at one part of the circular economy – waste. The design and repair of sustainable products, the sharing of resources through service models, and regeneration of natural systems are a few examples that are not reflected in waste management plans but are crucial to achieving the circular economy and should be considered in corresponding strategies. With further research and consultation, the use of appropriate action plans with a focus on the reduction of resource use at a sector or geographic scale could prove effective.

Further information on the following legislation examples can be found in Annex 2.

## 4.2 Spain

Spain's Law on Waste and Contaminated Soil for a Circular Economy 2022<sup>23</sup> places a statutory obligation on the Ministry of Ecological Transition and Demographic Challenge to create national waste management framework plans, and on the autonomous communities to create equivalent regional waste management plans. Details of what should be included in the national and regional plans are vague. There is reference that the main focus of the national waste management plans is to provide a general strategy for waste policy and setting minimum objectives for separate collection and preparation of waste for reuse, recycling, recovery, and disposal. At the regional level the focus shifts to the operational aspects related to waste reuse, recycling, and recovery. In their creation, both plans are to respect the regulations related to specific waste streams (in particular packing and packaging

<sup>22</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32008L0098> – See Appendix 10.2 for further detail

<sup>23</sup> <https://www.boe.es/buscar/doc.php?id=BOE-A-2022-5809> – See Appendix 10.2 for further detail

waste), deposit of waste in landfills, avoiding scattered waste, and protection of the marine environment and water matters. Again, it is worth noting the heavy emphasis on proper waste management rather than the broader circular economy objectives of designing out waste, keeping materials in the closed loop, and regenerating natural systems.

### 4.3 Germany

Similar to Spain's approach, Germany's Circular Economy Act 2012<sup>24</sup> does not place a statutory obligation on the government to create circular economy strategies but rather mandates the Länder (each federal state) to create waste management plans for their respective areas. Once more, the requirements have been directly lifted from the EU directive and focus on waste prevention and recovery. However, unlike Spain, Germany's statutory obligation for waste management plans expects plans to identify qualitative and quantitative indicators and targets in relation to the quantity of waste generated and its treatment, and energy from municipal waste with indication of what measures are required to achieve this. The particular note on the target of energy from municipal waste recognises the value of waste as an input to an industrial process – low carbon energy.

## 5 Climate change legislation with obligatory climate change plans

In the absence of mature circular economy legislation, the research was broadened to include legislation examples that also have a statutory obligation to create a strategy. Climate change legislation was particularly chosen as the aims of protecting the environment, achieving sustainable development, and contributing to net zero commitments are often also addressed in circular economy legislation.

Additionally, circular economy strategies have specifically been identified as levers to meet national climate change objectives, with strategies themselves frequently referencing climate action plans as policies they share many synergies with. Thus, looking at statutory obligations of climate change legislation can provide an idea of what is prioritised in climate change plans and may influence circular economy strategies, as well as measures that could support circular economy strategies to contribute to net-zero commitments.

### 5.1 Scotland

Scotland's Climate Change (Emissions Reduction Targets) (Scotland) Act 2019<sup>25</sup> includes a statutory obligation to create climate plans that are to be grounded in sustainable development and just transition principles. The plan is to indicate how Scotland will engage in the sharing of expertise and technology with developing

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<sup>24</sup> <https://www.bmuv.de/en/law/circular-economy-and-safeguard-the-environmentally-compatible-management-of-waste>

<sup>25</sup> <https://www.legislation.gov.uk/asp/2019/15>

countries to help them reduce greenhouse gases and adapt to climate change. While the climate change plan is not focused on circular economy principles, the emphasis on people centred policymaking is equally relevant to circular economy strategies. The Circular Economy Bill provides a chance to redistribute resources and materials, reduce the inequality gap, and contribute to a just transition. Additionally, the focus on using resources more locally – a central tenet of circular economy – is likely to have an impact on countries beyond Scotland’s borders, much like the climate change plans, and thus may also have value to circular economy strategies.

## 5.2 The Netherlands

The Netherlands Climate Law 2020<sup>26</sup> and its corresponding obligation on the government to create climate change plans is noteworthy given its focus on promoting the efficient use of energy resources. The relationship between energy and the circular economy is often overlooked yet is crucial if society is to respect the limits of natural resources such as critical minerals and fossil fuels. The Netherlands obligation of climate change plans overcomes this gap by requiring plans to identify measures that would increase the share of renewable energy, offer savings in energy use, and help secure a reliable energy supply.

## 5.3 Vietnam

Uniquely, Vietnam’s Law on Environmental Protection<sup>27</sup>, which provides a framework for sustainable economic development while protecting the environment and addressing climate change, does reference requirements related to a circular economy (Article 142). Though the article lacks detail, it places an obligation on ministries, ministerial agencies, and provincial People’s committees to incorporate circular economy principles into their strategies, planning, programs, and projects. In doing so, the law demonstrates a systems approach and integrates circular economy at the heart of all the public administration efforts – a nuanced approach to circular economy legislation. The law also places the responsibility on the government to elaborate on “criteria, roadmap and mechanisms for encouraging the implementation of circular economy”, though a circular economy strategy is not directly mentioned.

# 6 What CE strategies look like

The section below includes a high-level look at a number of CE strategies considered in this paper. Further information can be found in Annex 4.

## 6.1 The EU Circular Economy Action Plan (CEAP) - Learnings

There has been praise of the collaborative approach to policymaking employed by CEAP. It’s efforts to embed circular economy principles into an array of policy areas – climate, industrial, bioeconomy, and agriculture – demonstrates an attempt to overcome policy silos which have served as an obstacle to keep circular economy on the radar of government agendas<sup>28</sup>. Another obstacle is hesitance on the part of

26 <https://wetten.overheid.nl/BWBR0042394/2020-01-01>

27 <https://haiduong.eregulations.org/media/Law%20on%20Enviroment.pdf>

28 <https://ellenmacarthurfoundation.org/circular-examples/the-eus-circular-economy-action-plan>

policymakers to be more ambitious in their plans. However, the second plan shows bigger commitments than the first, such as working towards a new product policy framework, strengthening the internal market for secondary products, and identifying high impact sectors to target efforts<sup>29</sup>.

There are still areas for growth. An analysis conducted by the Institute for European Environmental Policy (IEEP)<sup>30</sup> suggests that although the plan sets targets on carbon reduction, targets should be broadened to include ecological footprints (i.e., land and water) related to the use of materials. Furthermore, the various information-based policy tools to promote consumer awareness is flagged as potentially being ineffective given individual behaviour is often reluctant to change and thus harder to achieve.

## 6.2 Denmark

Denmark's strategy for the Circular Economy 2018<sup>31</sup> was led by the Ministry of Environment and Food and Ministry of Industry, Business, and Financial Affairs. Though the strategy identifies six areas of efforts: enterprises, data and digitalisation, design, consumption patterns, functioning market for waste and recycled raw materials, and value from buildings and biomass - enterprises are especially recognised as the primary driving force for the transition to the circular economy. Much of the government's focus throughout the strategy is to create an environment where enterprises are able to realise the opportunities found in circular economy business models – and this moves beyond the usual approach of increased financing. On targets, there are none directly mentioned, but the strategy does acknowledge the government's plan to meet actions in the UN SDGs.

## 6.3 Finland

The Finnish Government Resolution on the Strategic Programme for a Circular Economy<sup>32</sup> sets out the objectives and measures to promote a circular economy and allocates the resources required to meet them. Each initiative listed in the program has a ministry responsible to ensure its progress.

Ambitions the programme hopes to achieve are the reduction in the consumption of non-renewable natural resources with a corresponding increase in the use of renewable resources (not including in manufacturing of exported products), increased profitability of products, and an increase in the circular economy rate of materials. Uniquely, the Finnish programme makes special mention of embedding circular economy into foreign policy to support the SDGs (Ministry for Foreign Affairs). Supporting developing countries through funding and partnerships, mainstreaming of circular economy and sustainable use of natural resources in intergovernmental organisations, and leading the development of the World Circular Economy Forum have been provided as examples.

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29 <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1583933814386&uri=COM:2020:98:FIN>

30 <https://ieep.eu/publications/an-analysis-of-the-new-eu-circular-economy-action-plan>

31 <https://circulareconomy.europa.eu/platform/en/strategies/danish-strategy-circular-economy>

32 <https://ym.fi/en/strategic-programme-to-promote-a-circular-economy>



## 6.4 Italy

The Italian circular strategic framework titled, Towards a Model of Circular Economy for Italy<sup>33</sup>, aims to create more efficient use of resources and sustainable patterns of production by targeting conscious consumption. This is to be done by changing the way companies, consumers, and economic instruments currently function.

Life Cycle Thinking approaches for product design, business models with sharing platforms and product as services, and industrial symbiosis are seen as key mechanisms to advance the circular economy at the company level, and for consumers, the strategy explores fighting misleading advertising while increasing knowledge of Ecolabel brands, and financial incentives for repair activities and product and service sharing.

Reform of economic instruments to reduce resource use is also encouraged with measures such as elimination of harmful environmental subsidies and switching the tax burden for families from income to consumption and for businesses from labour to natural resources.

## 6.5 The Netherland's National Agreement on the Circular Economy

Currently, the Netherlands does not have legislation specifically for promoting the circular economy, but it does have the National Agreement on the Circular Economy<sup>34</sup> – a letter of intent to develop “transition agendas” for the circular economy. Their voluntary approach to policymaking has also been seen in other sustainability and climate policies such as the Green Deal, and as such is not unique to the circular economy landscape.

The Netherlands voluntary agreement is between the government, industry, trade unions, financial institutions, educational institutions, and other social organisations to collaborate and guide the interventions that advance the circular economy.

## 6.6 Sweden

The Circular Economy Strategy for the Transition in Sweden<sup>35</sup> was published by the Ministry of the Environment with an overall objective to help achieve the national environmental and climate objectives and the UN SDGs. It is important to note that the Swedish CE strategy has a significant element of the global landscape, as in addition to embedding the UN SDGs, the strategy talks about its plan to champion circular economy in the World Trade Organisation (WTO), the Organisation for Economic Cooperation and Development (OECD), and its efforts of driving a global agreement on plastic to protect the marine environment amongst other international efforts.

The Ministry has identified four focus areas all of which are closely linked with each other: sustainable production and product design; sustainable ways of consuming and using materials, products, and services; non-toxic and circular material cycles; and the innovation and circular business models in the business sector and other actors.

33 <https://circulareconomy.europa.eu/platform/en/strategies/towards-model-circular-economy-italy-overview-and-strategic-framework>

34 <https://www.government.nl/documents/discussion-documents/2017/01/24/national-agreement-on-the-circular-economy>

35 <https://circulareconomy.europa.eu/platform/en/strategies/swedish-strategy-circular-economy-accelerates-transition-sustainability>

## 6.7 Japan

Japan's Circular Economy Vision 2020<sup>36</sup> adds on to its previous version from 1999. The document is written by the Ministry of Economy, Trade, and Industry and focuses on promoting the 3 Rs – reduce, reuse, and recycle – in the manufacturing, materials and parts, and waste management and recycling industries. More specifically, resource circulation efforts will be directed towards plastics, textiles, carbon fibre reinforced polymers (CFRP), batteries, and photovoltaic (PV) panels.

The vision also recognises that circular products and business models are not currently being appropriately evaluated or given a fair price. Public procurement is proposed as a way to use the government's massive spending power to increase the visibility and valuation of circular products and services.

# 7 Regional lens to CE strategies

Our research has shown a number of regional authorities to have adopted a voluntary approach to creating circular economy strategies. A more localised approach to policymaking is likely due to Europe's multilevel governance system. This multilevel system is reflected in the existence of the EU Committee of Regions, an advisory body of regionally elected officials that have a high degree of influence and interaction with EU level policy<sup>37</sup>. In this way, regional authorities can easily translate emerging policy to their local contexts. Furthermore, many countries' constitutions (including Germany and Spain referenced below) allow for a variety of powers to be attributed to regional governments. Thus, a localised approach to policymaking is not specific to circular economy strategies but rather is common practice.

Some regions have created circular economy strategic documents (Catalonia and Bavaria), while others have established steering committees (Flanders). And some regions have simply adopted national circular economy legislation at regional levels (North Rhine-Westphalia<sup>38</sup>) though there is no statutory obligation present in the legislation. Taking it a step further, some cities such as Munich<sup>39</sup> have committed to becoming a zero-waste city member - a certification that is given by the Zero Waste Europe Association only after a city creates a circular economy strategy. Although Munich's plan is still in development, it may prove to be an example for CE strategies at the municipal level.

Brief summaries for Catalonia, Bavaria and Flanders can be found below, with further information on these regions available in Annex 5.

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36 [https://www.meti.go.jp/shingikai/energy\\_environment/junkai\\_keizai/pdf/20200522\\_03.pdf](https://www.meti.go.jp/shingikai/energy_environment/junkai_keizai/pdf/20200522_03.pdf)

37 <https://cor.europa.eu/en/engage/Documents/Mooc/Mooc%202018/MOOC-Factsheet-Module-1-EN.pdf>

38 <https://www.government.nl/documents/discussion-documents/2017/01/24/national-agreement-on-the-circular-economy>

39 <https://www.awm-muenchen.de/vermeiden/zero-waste-city-muenchen#c2172>

## 7.1 Catalonia

Catalonia introduced its Strategy to Boost the Green Economy and Circular Economy<sup>40</sup> in 2015 and outlines policy development in five key areas: demand generation and market creation, access to finance, promotion of research, development and innovation, increase voice and representation of Catalonia at the global stage, and promotion of employment and entrepreneurship.

There are many policy documents across the various Catalan government portfolios which have been identified by the government as having a key role to play in a green and circular economy. These include regional plans and strategies such as those for ecodesign, energy renovation, energy harvesting, smart strategy, agri-food production, and transport. The green and circular economy strategy is intended to serve as the overarching framework for these policy documents to ensure they are all working towards the common goal of a more sustainable way of living, consuming, and producing.

## 7.2 Bavaria

The Bavarian Bioeconomic Strategy<sup>41</sup> acknowledges that an efficient use of renewable raw materials and material flows requires the adoption of circular economy principles – a relationship that is consistently highlighted throughout the document. For this reason, despite what the title may illustrate, the strategy reflects that of a circular-bioeconomy strategy.

The strategy clearly points out that neither political, scientific nor business actors alone can achieve the transformation through isolated efforts. Rather, cooperation amongst all participants including the civil society is critical to achieving the transformation. Key industrial sectors identified to support the transition to a circular are food industry, chemical, plastic, paper, construction, textile, mechanical engineering and wood processing.

Targets and indicators are not referenced in the strategy.

## 7.3 Flanders

Circular Flanders<sup>42</sup>, launched in 2017, is a collaboration between the government, industry, local and social not-for-profits, knowledge institutions, and financial institutions. The Flemish Minister of Economy, Innovation, Work, Social Economy and Agriculture and the Flemish Minister of Justice and Enforcement, Environment, Energy and Tourism are the government representatives and lead the Circular Flanders Steering Committee.

Representatives from all five areas of society work across six thematic areas: circular construction, chemicals and plastics, water cycles, biobased economy, food chains, and manufacturing (i.e., textiles, furniture, electronics and batteries).

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40 [https://mediambient.gencat.cat/ca/05\\_ambits\\_dactuacio/empresa\\_i\\_produccio\\_sostenible/economia\\_verda/impuls\\_economia\\_verda/](https://mediambient.gencat.cat/ca/05_ambits_dactuacio/empresa_i_produccio_sostenible/economia_verda/impuls_economia_verda/)

41 <https://www.bioekonomiestrategie.bayern/startseite#strategiepapier>

42 <https://vlaanderen-circulair.be/en/approach>

## 8 Our thoughts and summary

The circular economy legislative landscape remains quite sparse, which means Scotland is somewhat starting on a blank slate for what a statutory obligation for a circular economy strategy should include. While there is long standing legislation in waste management - and somewhat in climate change, such precedence can only partly be used to solidify requirements into primary legislation for the circular economy. And, we have simply not reached the post evaluation stage for the handful of circular economy legislations that do exist to know how effective they have been.

While there remains a lack of long-standing examples to learn from, it does mean that Scotland has the opportunity to be a leader in this space. The inclusion of a statutory obligation for a circular economy strategy would likely be beneficial for a number of reasons for example, it can provide a place to house targets, prioritise key measures to adopt, serve as a framework that other policies and strategies should be understood in to name a few. However, it remains beneficial to keep obligations for the strategy as broad as possible, with detail to follow as data and evaluation are gathered and released. This would help Scotland keep pace with new developments in circular economy rather than be restricted by antiquated legislative requirements.

The ABC's of CE of similar legislation and strategies illustrated below indicates what has already been addressed in examples from other countries. As previously mentioned, the choices made for what criteria should be reflected in legislation and strategies were likely driven by a number of factors such as national priorities (short, medium and long-term), the policy landscape, existing political appetite for circular economy and the economic climate (availability of resources). While the criterion below is useful to be aware of, each brings its own opportunity and risks that would need to be considered in Scotland's context prior to being included in legislation.

The ABCs of CE (or similar) strategies:

- **Responsibility given to** – Minister for environment/climate, in some instances combined with ministry of economic affairs, and when appropriate, circular economy department.
- **Frequency of CE strategy or similar review** – waste management plans 6 years with annual reports in between. CE strategies are 3 (Ireland) to 5 (Andorra) years with annual reports.
- **Sectors included** – Construction and demolition, food (including agriculture), retail (specifically textiles), plastics, electronic equipment, and bioeconomy.
- **Other policy documents mentioned** – The interrelation of climate and waste action plans, national development plans, environment, biodiversity and marine strategies, bioeconomy strategies, and (less often) industrial strategies.
- **Public engagement** – Most legislation indicates consultation with members of the public and appropriate bodies in drafting. [some specified specific groups to engage with?].
- **Targets and indicators** – Qualitative and quantitative targets are referenced in legislation with strategies providing further detail such as carbon, consumption, waste reduction, and material recovery targets.
- **Impact assessments** – Environmental Assessments are at times required in

legislation not solely focused on CE, with Poverty Assessment required on a single occasion for Ireland's CE Bill.

#### **Opportunities and risks for each:**

- **Responsibility given to one particular minister:**
  - Opportunity: Ministerial accountability towards circular economy and its progress (i.e., setting objectives, meeting targets, etc).
  - Risk: Circular economy being siloed and not integrated into the objectives of other related ministries and their strategies and plans.
- **Frequency between 3 and 5 years:**
  - Opportunity: Shorter time frame provides the opportunity to re-evaluate strategic objectives and proposals to be in line with the fast-moving pace of research and technology.
  - Risk: Short-termism where short term quick wins are focused on at the expense of larger more impactful projects. Also susceptible to disruption from change in government.
- **Identification of specific sectors:**
  - Opportunity: Provides clarity on areas that are seen as essential to meeting circular economy (and related climate and sustainability) targets.
  - Risk: Adding complexity to the policy landscape as many sectors are regulated by other instruments (e.g., construction by The Building Regulations). Key sectors can change based on technological advancement; a sector seen as a priority in one year may not be seen as a priority in the next.
- **Targets and indicators:**
  - Opportunity: Provides guidance for central actors (e.g., local authorities and businesses) to make changes.
  - Risk: May not be relevant over time as scientific evidence comes to light or economic and social situation changes (e.g., unable to meet current targets due to COVID 19).

The following do not present the same level of opportunity and risk as those mentioned above, however they are worth acknowledging as good practice.

Scotland committed to the **UN SDGs** in 2015, and Scotland's National Performance Framework and Goals share the same aims.

**Impact assessments and public engagement** are already part of the Scottish Government policy development due to requirements that already exists (e.g., the Environmental Impact Assessment (EIA) Directive, Public Sector Equality Duty, etc.).

**Other requirements:** Numerous measures beyond data and digitalisation, public procurement, international engagement, and industry and consumer specific guidance can be addressed in the statutory obligation and the opportunities and risks are unique to each. However, precedence from existing Scottish statutory obligations (Climate Change Act and Land Reform Act) as well as those from other countries indicate broad mandates that provide space for reform of strategies as national contexts change.

In summary, it is clear that CE legislation and statutory obligation landscape remains very much in a 'learning' space, both in Europe and further abroad. It is also clear that a varied number of drivers play a role in how and why a country (or region) makes decisions on their approach to the CE, however it would appear that the inclusion of a broad statutory obligation for a circular economy strategy would be beneficial for a number of reasons, not the least that the strategy itself would provide a clear signal of intention to allow organisations, businesses and householders alike with a clear plan of what will be expected of them.

The proposed CE Bill, including the proposal for a statutory strategy presents the Scottish Government with an opportunity to be at the forefront of implementing legislation to drive the circular economy in Scotland, and to act as an exemplar for other countries.

# Annex 1. Further details of CE legislation examples covered above

## Ireland

Ireland's new Act titled, Circular Economy and Miscellaneous Provisions Act 2022<sup>43</sup>, was signed into law in July 2022. The legislation mandates the creation of a circular economy strategy and in doing so places a legal requirement on the government to continuously progress circular economy policies. In each iteration the strategy should be aligned with the Waste Action Plan for the Circular Economy, the Climate Action Plan, the National Biodiversity Action Plan, the National Policy Statement on the Bioeconomy, the National Marine Planning Framework, and the Roadmap for Social Inclusion amongst other policy documents.

The responsibility of creating a circular economy strategy, its revisions, and its corresponding annual reports is placed on the Minister for the Environment, Climate and Communications. The Act is very detailed in what is to be expected from the strategy but stays clear in identifying concrete action items. For example, it demands the inclusion of measures to inform and promote dialogue with the public on the challenges and opportunities that come along with a transition to the circular economy but does not go into detail on how this can be realised. Furthermore, the Minister is required to take into account the UN SDGs with no reference to any particular goal. The strategy is also intended to promote the use of circular economy related criteria in public procurement and does not provide any further specifics. The absence of concrete action items in the Irish Act abides by the general practice of not making statutory obligations too restrictive but rather leaving space for reform as priorities and circumstances change.

The requirement for targets in the strategy is detailed. For example, construction, agriculture, retail, packaging, textiles, and electronic equipment are identified as key sectors that will require targets, with additional targets for other sectors left at the discretion of the Minister. The Act further specifies what targets should be included: reductions in material resource consumption; increase in the use of re-usable products and materials; increased levels of repair and re-use of products and materials; and improved maintenance and optimised use of goods, products, and materials. Additionally, the Minister is to encourage (i.e., on a voluntary basis) actors in the key sectors to enter into sectoral agreements to meet targets.

The statutory obligation also puts an emphasis on the need to socialise the strategy, and the circular economy in general, with the public and particularly so with equalities groups. For example, like many other statutory obligations, the drafting process should involve members of the public. However, uniquely, the requirement on the consultation process specifies the need to include organisations that represent

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<sup>43</sup> <https://www.oireachtas.ie/en/bills/bill/2022/35/>

economically or socially disadvantaged persons, and those living with disabilities. There is also an expectation that a poverty impact assessment will be carried out. On the content of the strategy, measures aimed at “informing and promoting dialogue with the public regarding the challenges and opportunities in the transition to a circular economy” are to be included.

## **Andorra**

Andorra’s Circular Economy Law 2022<sup>44</sup> aims to create a framework and structure that develops the circular economy, with the Circular Economy Strategy seen as the mechanism to translate programs indicated in the law to real action.

On the content of the strategy, the objective is lay out how the following targets identified in the law will be met: increase in the reuse and recycling of waste; reduction in the generation of urban waste; reduction in water consumption; increase in sorting of waste at the source (i.e., selective collection); reduction of food waste; and increase in number of companies with circular economy business models. However, increase in the reuse and recycling of waste is the only target required to be clearly integrated in the strategy and should be updated when appropriate to align with the EU’s reuse and recycling waste reduction targets of 55% (2025), 60% (2030) and 65% (2035). Additionally, the strategy should provide the calculation methodology used to ensure the compliance of the circular economy objectives listed above.

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44 <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC215644/>



# Annex 2. Further details of waste management legislation examples covered in main document

## European Commission's Directive 2008/98/EC on Waste and Repealing Certain Directives

The directive requires member states and their “competent authorities” to establish waste management plans (Article 28). These plans are to be broad and overarching documents that include: an analysis of the current waste management situation; **measures to be taken to improve re-use; recycling, recovery, and disposal of waste**, information on collection schemes and installations; general waste management policies; responsibilities of public and private actors; and an awareness campaign directed at the public amongst other information. Plans are to be evaluated – and revised where appropriate – at least every 6 years.

### Spain

Spain's Law on Waste and Contaminated Soil for a Circular Economy 2022<sup>45</sup> aims to minimise the negative effects of waste generation on human health and the environment. At the national level, plans are aimed at reducing greenhouse gas emissions and should focus on providing a summary of the national waste situation, a general strategy and guideline for waste policy, and set minimum objectives for separate collection and preparation of waste for reuse, recycling, recovery, and disposal. At the regional level, the plans are to be focused on facilitating the preparation for reuse, recycling, recovery and disposal of waste, in addition to translating the national level plans to the regional context. And, as per the EU Directive on Waste and Repealing Certain Directives, plans at both levels are to be evaluated (brief reference for evaluation of waste prevention programs to be made accessible to the public) and reviewed at least every 6 years.

### Germany

Germany's Circular Economy Act 2012<sup>46</sup> promotes the conservation of natural resources and the protection of human health and the environment. Although there are certain requirements of circular economy listed in the Act – such as mandates on waste producers, collectors, and disposers – there is no statutory obligation on the government to create circular economy strategies. Instead, the Act mandates the Länder, or each federal state, to create waste management plans for their respective areas and update them every 6 years. Plans are required to describe the aim of waste prevention and recovery (i.e., reuse and recycling), measures taken to prevent waste, and **activities to improve the recovery of waste and waste disposal**. Further details

45 <https://www.boe.es/buscar/doc.php?id=BOE-A-2022-5809>

46 [https://www.bmu.de/fileadmin/Daten\\_BMU/Download\\_PDF/Abfallwirtschaft/kreislaufwirtschafts-gesetz\\_en\\_bf.pdf](https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Abfallwirtschaft/kreislaufwirtschafts-gesetz_en_bf.pdf)

must also be provided on the type, quantity, and origin of waste generated in the areas, waste streams and the laws and provisions which apply to them, and general waste management strategies.

While not mandatory, the Act states that plans may provide information on the breakdown of responsibilities between public and private stakeholders, an evaluation of different economy and other instruments to overcome waste related problems, and the use of awareness raising campaigns and information sharing for the public.

# Annex 3. Further details of climate change legislation examples covered in main document

## Scotland

Scotland's Climate Change (Emissions Reduction Targets) (Scotland) Act 2019<sup>47</sup> is focused on actions that will help Scotland deliver on its Paris Agreement. To achieve this, it requires the Scottish Ministers to create Climate Change Plans every 5 years complemented with annual progress reports. Plans are to set out proposals and policies for the sectors of energy supply, transport, business and industrial processes, residential and public buildings, waste management, land use and forestry, and agriculture as well as how these sectors are to meet emissions reductions targets. And, in setting out such proposals and policies, just transition and climate justice principles need to be adhered to which the Act considers to be supporting people who are most affected by climate change and addressing inequality. Sharing of expertise and technology with developing countries to reduce greenhouse gases and to help adapt to climate change has been explicitly emphasised. There is also the requirement that the plan explain how just transition principles have been taken into account, and how the implementation of the plan is expected to contribute to Scotland achieving the UN SDGs. Lastly, the plan must also detail an estimate of the costs and benefits associated with suggested policies and proposals.

## The Netherlands

The Climate Law 2020<sup>48</sup> of the Netherlands works to reduce greenhouse gas emissions in order to mitigate global warming and climate change. The responsibility of creating the climate change plan is given to Dutch ministers, though no specific minister is identified. The timeline of the plan indicates it to be re-adopted every 5 years, with a progress report on performance every 2 years. Measures explored in the climate plan should include those related to the increase in share of renewable energy and savings in energy use, research and development of technology to limit greenhouse gas emissions, and be on par with developments in Europe and globally. And, to ensure the plan is mindful of its stakeholders, the plan must consider its impact on "the financial position of households, companies and governments, employment, including education and training, the development of the economy, the realisation of a just transition, and a reliable energy supply".

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47 <https://www.legislation.gov.uk/asp/2019/15/enacted>

48 <https://wetten.overheid.nl/BWBR0042394/2020-01-01>

# Annex 4. Further details of ‘What CE strategies look like’ examples covered in main document

## The EU Circular Economy Action Plan

The EU Circular Economy Action Plan (CEAP) 2020 is the second instalment of a circular economy framework at EU’s supranational level – CEAP in 2015 being the first one. The new plan includes a list of legislative and non-legislative proposals spanning the full product life cycle. Proposals include those that make sustainable products the norm, empower consumers and public buyers, promote green public procurement criteria, leverage data and digitalisation to map resources, and help EU lead circular economy efforts at the international level. Specific sectors that have high potential for circularity have also been identified as focus areas and include electronics and ICT, batteries and vehicles, packaging, plastics, textiles, construction and buildings, and food, water, and nutrients. Targets related to key sectors have also been emphasised such as a revision of material recovery targets in construction and demolition waste, waste reduction for specific streams and particularly so for food waste, carbon reduction, and green public procurement.

CEAP also contains a section on crosscutting actions where climate neutrality, economics, and research, innovation, and digitalisation are explored. Climate neutrality is particularly interesting as the synergy between the circular economy and reduction of greenhouse gas emissions is referenced even beyond the crosscutting section and in numerous measures, including the proposed monitoring framework. Other topics and strategies recognised to be intertwined with the success of the circular economy include the industrial strategy, bioeconomy action plan, and a farm to fork strategy to name a few.

## Learnings from the updated EU Circular Economy Action Plan

As circular economy finds its way on to national agendas many countries will be looking to learn from what is already there – and the EU Circular Economy Action Plan is amongst the handful of examples countries can draw from.

Circular economy experts – across academia, industry, and governments – have consistently emphasised a policy gap in the earlier phases of the product life cycle, particularly in the design stage, but also in public procurement and taxation<sup>49</sup>, and CEAP has delivered in all three areas. The plan’s initiative to widen the Ecodesign Directive beyond energy-related products demonstrates the EU’s commitment to make circular design the norm, its requirement for minimum green public procurement criteria leverages the purchasing power of governments to drive circularity, and finally the financial feasibility of circular products through environmental taxation measures and value added tax rates.

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49 <https://www.sciencedirect.com/science/article/pii/S0921344919305403>

There has also been praise of the collaborative approach to policymaking employed by CEAP. It's efforts to embed circular economy principles into an array of policy areas – climate, industrial, bioeconomy, and agriculture – demonstrates an attempt to overcome policy silos which have served as an obstacle to keep circular economy on the radar of government agendas<sup>50</sup>. Another obstacle is hesitation on the part of policymakers to be more ambitious in their plans. However, the second plan shows bigger commitments than the first, such as working towards a new product policy framework, strengthening the internal market for secondary products, and identifying high impact sectors to target efforts<sup>51</sup>.

There are still areas for growth. An analysis conducted by the Institute for European Environmental Policy (IEEP) suggests that although the plan sets targets on carbon reduction, targets should be broadened to include ecological footprints (i.e., land and water) related to the use of materials<sup>52</sup>. Furthermore, the various information-based policy tools to promote consumer awareness is flagged as potentially being ineffective given individual behaviour is often reluctant to change and thus harder to achieve. Instead, measures to ensure circular economy business models support earlier stages of the waste hierarchy and promote sharing rather than ownership should be explored. Better use of environmental tax to put pressure on limiting the use of non-renewable energy and virgin raw materials is also encouraged.

## Denmark

Denmark's strategy for the Circular Economy 2018<sup>53</sup> was led by the Ministry of Environment and Food and Ministry of Industry, Business, and Financial Affairs. Though the strategy identifies six areas of efforts: enterprises, data and digitalisation, design, consumption patterns, functioning market for waste and recycled raw materials, and value from buildings and biomass enterprises are especially recognised as the primary driving force for the transition to the circular economy. Much of the government's focus throughout the strategy is to create an environment where enterprises are able to realise the opportunities found in circular economy business models – and this moves beyond the usual approach of increased financing.

For example, the strategy notes the creation of a single point of entry to authorities so that companies who wish to adopt innovative circular business models can get help in navigating the array of regulations created in the context of traditional business models. In another instance, the government commits to analyse public and private data to determine if particular data sets can help businesses reduce wastage and increase material efficiency, and if so, how such data sets can be shared with industry to adopt circular models.

On targets, there are none directly mentioned, but the strategy does acknowledge the government's plan to meet actions in the UN SDGs.

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50 <https://ellenmacarthurfoundation.org/circular-examples/the-eus-circular-economy-action-plan>

51 <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1583933814386&uri=COM:2020:98:FIN>

52 <https://ieep.eu/publications/an-analysis-of-the-new-eu-circular-economy-action-plan>

53 <https://circulareconomy.europa.eu/platform/en/strategies/danish-strategy-circular-economy>

## Italy

The Italian circular strategic framework titled, Towards a Model of Circular Economy for Italy<sup>54</sup>, aims to create a more efficient use of resources and sustainable patterns of production by targeting conscious consumption. This is to be done by changing the way companies, consumers, and economic instruments currently function.

Life Cycle Thinking approaches for product design, business models with sharing platforms and product as services, and industrial symbiosis are seen as key mechanisms to advance the circular economy at the company level. For consumers, the strategy explores fighting misleading advertising while increasing knowledge of Ecolabel brands, and financial incentives for repair activities and product and service sharing. Reform of economic instruments to reduce resource use is also encouraged with measures such as elimination of harmful environmental subsidies and switching the tax burden for families from income to consumption and for businesses from labour to natural resources. There is also an extensive section on the creation of a “Register of Traced Chains” that will help to monitor resources used for products in different sectors emphasising the importance of leveraging digital solution for the overconsumption problem. The various measures should contribute to the achievement of collection, recovery, and recycling targets.

The circular strategic framework also emphasises the importance of building up the bioeconomy in circular efforts. This is because many measures identified in the framework require a shift away from non-renewable sources and towards renewable bio-resources that support sustainable production and consumption. Due to this, the circular strategic framework will be implemented with the National Bio-Economy Strategy in mind. The National Strategy for Sustainable Development and the National Action Plan on Sustainable Production and Consumption have also been promoted within the framework.

## Japan

Japan’s Circular Economy Vision 2020<sup>55</sup> adds on to its last version from 1999. The document is written by the Ministry of Economy, Trade, and Industry and focuses on promoting the 3 Rs – reduce, reuse, and recycle – in the manufacturing, materials and parts, and waste management and recycling industries. More specifically, resource circulation efforts will be directed towards plastics, textiles, carbon fibre reinforced polymers (CFRP), batteries, and PV panels. The usefulness of digital technology to promote the 3 Rs is highlighted and include leveraging artificial intelligence and Internet of Things to reduce production loss, promote sharing services (i.e., reuse), and engage in high-quality recycling.

The vision also recognises that circular products and business models are not currently being appropriately evaluated or given a fair price. Public procurement is proposed as a way to use the government’s massive spending power to increase the visibility and valuation of circular products and services. At the same time, the manufacturing industry is told to take advantage of its advanced capabilities to build products that are sustainable and longer lasting as such products are starting to be highly sought

<sup>54</sup> <https://circulareconomy.europa.eu/platform/en/strategies/towards-model-circular-economy-italy-overview-and-strategic-framework>

<sup>55</sup> [https://www.meti.go.jp/shingikai/energy\\_environment/junkai\\_keizai/pdf/20200522\\_03.pdf](https://www.meti.go.jp/shingikai/energy_environment/junkai_keizai/pdf/20200522_03.pdf)

after in the fight against climate change. To support manufacturers with increased demand in quality recycled materials, waste and recycling companies are expected to become 'resourcing industries'. The interplay between international resource circulation and the domestic market is also mentioned.

There are no stated targets, but Japan's progress in circular economy should be tracked by evaluating each company's activities individually. Indicators to track activities should be related to reduction and sharing of materials and usage of alternative materials.

Four key actors identified to help deliver the vision are: businesses who can reduce environmental impact throughout the product life cycle, consumers who can change their consumption choices, the national government that can set the direction and conditions of the transition, and local government that can reform waste management practices and promote environmentally conscious actions in residents. Linked to this is the vision of Japan achieving the concept of Sanpo-Yoshi - "good for the seller, good for the buyer, and good for society" – or, a three-way satisfaction.

## Sweden

The Circular Economy Strategy for the Transition in Sweden<sup>56</sup> was published by the Ministry of the Environment with an overall objective to help achieve the national environmental and climate objectives and the UN SDGs. It is important to note that the Swedish circular economy strategy has a significant element of the global landscape, as in addition to embedding the UN SDGs, the strategy talks about its plan to champion circular economy in the World Trade Organisation (WTO), the Organisation for Economic Cooperation and Development (OECD), and its efforts of driving a global agreement on plastic to protect the marine environment amongst other international efforts.

The Ministry has identified four focus areas all of which are closely linked with each other: sustainable production and product design; sustainable ways of consuming and using materials, products, and services; non-toxic and circular material cycles; and the innovation and circular business models in the business sector and other actors. Each of the four focus areas in the strategy are to meet certain UN SDG targets and will have corresponding action plans that set out policy tools and concrete action items. Numerous national actors are named to help realise the strategy and the action plans, but overall, they are grouped under the political sphere, business sector, public sector, municipalities, private individuals, and civil society.

The strategy also notes, drawing from EU's CEAP, areas where most action is needed to meet the national objectives and UN SDGs, these include bioeconomy, plastics, textiles, renewable and bio-based raw materials, food, construction and property sector, and innovation-critical metals and minerals.

New technologies are seen to have the potential to replace products with services and to make the sharing and reuse of the two easier. Similarly, the strategy looks to make use of the abundance of data related to tracking and mapping of resources to achieve

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<sup>56</sup> <https://circulareconomy.europa.eu/platform/en/strategies/swedish-strategy-circular-economy-accelerates-transition-sustainability>

the optimal design of products and processes. The strategy hopes such innovation will be able to strengthen the circular business climate both domestically but also abroad given Sweden's export capacity. This gives rise to the importance of the Digitalisation Strategy and the Trade and Investment Strategy, a point made throughout the document.

## Finland

The Finnish Government Resolution on the Strategic Programme for a Circular Economy<sup>57</sup> sets out the objectives and measures to promote a circular economy and allocates the resources required to meet them. Targets the programme hopes to achieve are the reduction in the consumption of non-renewable natural resources with a corresponding increase in the use of renewable resources (not including in manufacturing of exported products), increased profitability of products, and increase in the circular economy rate of materials.

Each initiative listed in the program has a ministry responsible to ensure its progress. Initiatives range from incentivising the use of circular economy service models through lowering the electricity tax category for the recycling industry (Ministry of Finance) and the development of legislation and product policy instruments that support the digitalisation of material flows and product information (Ministry of the Environment and Ministry of Economic Affairs and Employment), to embedding circular economy competence in the education system by embedding the topic in curricula and degree requirements (Ministry of Education and Culture).

The circular economy potential in real estate and construction has been highlighted to be the most significant. To fully realise the potential, the programme establishes a 'national competence network' that will support the municipalities and regional ecosystems work on carbon neutral circular economies (Ministry of the Environment). The programme also aims to increase circular economy awareness and expertise in the real estate and construction sector through creating a network of circular economy change experts (Ministry of the Environment and Ministry of Economic Affairs and Employment in collaboration with industry actors).

Uniquely, the Finnish programme makes special mention of embedding circular economy into foreign policy to support the UN SDGs (Ministry for Foreign Affairs). Supporting developing countries through funding and partnerships, mainstreaming of circular economy and sustainable use of natural resources in intergovernmental organisations, and leading the development of the World Circular Economy Forum have been provided as examples.

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<sup>57</sup> <https://ym.fi/en/strategic-programme-to-promote-a-circular-economy#:~:text=Finland%20has%20prepared%20a%20strategic,leader%20in%20the%20circular%20economy.>



## The Netherlands National Agreement on the Circular Economy

Currently, the Netherlands does not have legislation specifically for promoting the circular economy, but it does have the National Agreement on the Circular Economy<sup>58</sup> – a letter of intent to develop “transition agendas” for the circular economy. Their voluntary approach to policymaking has also been seen in other sustainability and climate policies such as the Green Deal, and as such is not unique to the circular economy landscape.

The Netherlands **voluntary** agreement is between the government, industry, trade unions, financial institutions, educational institutions, and other social organisations to collaborate and guide the interventions that advance the circular economy. The five key sectors that will have transition agendas are (1) biomass and food, (2) plastics, (3) manufacturing, (4) construction, and (5) consumer goods. Each transition agenda is further divided into:

- Action agenda: bottle necks, connection to other social and international goals, relation to transition agendas to the other topics, implementation process with responsibilities, and a list of innovation projects for the short and long term.
- Knowledge agenda: knowledge gaps, potential research questions, development of indicators, interrelation of objectives and values.
- Social agenda: impact on labour market, circular business models, and worker development (i.e. training and upskilling).
- Investment agenda: barriers to financing and financial interventions to remove the barriers.

A monitoring framework for each transition agenda including a measurement of the current state of the sector is also included.

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<sup>58</sup> <https://www.government.nl/documents/discussion-documents/2017/01/24/national-agreement-on-the-circular-economy>

# Annex 5. Further details on ‘Regional lens to CE strategies’ examples covered in main document

## Catalonia

Catalonia introduced its Strategy to Boost the Green Economy and Circular Economy<sup>59</sup> in 2015 with the aim to leverage sustainability practices to achieve economy recovery, improve competitiveness, spur employment, and reduce environmental risks. It also hopes to prioritise future actions by the government.

The Strategy outlines policy development in five key areas: demand generation and market creation, access to finance, promotion of research, development and innovation, increase voice and representation of Catalonia at the global stage, and promotion of employment and entrepreneurship. These policy instruments are used in sectors that have been identified as competitive advantage sectors in Catalonia’s Smart Specialisation Strategy: food, energy and natural resources, design (i.e., textiles and furniture), automotive, healthy, and creative and cultural industries. The strategy makes a special emphasis on the need to not view the green and circular economy as a discrete sector but rather various activities that can be adopted across the traditional and emerging sectors of society.

There is also an acknowledgement that other regional plans, programs, and actions are instrumental in achieving green and circular economy strategic objectives, including the strategy for ecodesign, energy renovation, energy harvesting, smart strategy, agri-food production, and transport to name a few. As there already exists an array of instruments from different government departments, the green and circular economy strategy is proposed to be a global framework that other strategies are to be understood in.

On indicators, the strategy remains quite vague by identifying only a handful: green occupation quota, weight of the green economy in GDP, efficient use of resources, environmental quality, and energy efficiency in buildings. And relatedly, targets are absent in the strategy.

## Bavaria

The Bavarian Bioeconomic Strategy<sup>60</sup> acknowledges that an efficient use of renewable raw materials and material flows requires the adoption of circular economy principles. – a relationship that is consistently highlighted throughout the document.

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59 [https://mediambient.gencat.cat/ca/05\\_ambits\\_dactuacio/empresa\\_i\\_produccio\\_sostenible/economia\\_verda/impuls\\_economia\\_verda/](https://mediambient.gencat.cat/ca/05_ambits_dactuacio/empresa_i_produccio_sostenible/economia_verda/impuls_economia_verda/)

60 <https://www.biooekonomiestrategie.bayern/startseite#strategiepapier>

For this reason, despite what the title may illustrate, the strategy reflects that of a circular-bioeconomy strategy. It emphasises that many innovative companies and research institutes already recognise the potential in the circular use of raw biogenic materials and the regional economic value this approach brings, yet political and legal frameworks are not conducive to realising this potential. In this context, the strategy provides 50 measures that can aid Bavaria to achieve a circular bioeconomy, ranging from including an impact assessment for circular bioeconomy at times when laws are being reviewed, to life cycle analysis for products, attracting investors to support bioeconomy business models domestically and internationally, and strengthening science and research through industry-university partnerships.

The strategy clearly points out that political, scientific, nor business actors alone can achieve the transformation through isolated efforts. Rather, cooperation amongst all participants including the civil society is critical to achieving the transformation. Key industrial sectors identified to support the transition to a circular are food industry, chemical, plastic, paper, construction, textile, mechanical engineering, and wood processing. However, the strategy emphasises that a sustainable bioeconomy is one that encompasses all industrial and economic sectors that produce, process, and use biogenic raw materials.

Targets and indicators are not referenced in the strategy.

## **Flanders**

Circular Flanders<sup>61</sup>, launched in 2017, is a collaboration between the government, industry, local and social not-for-profits, knowledge institutions, and financial institutions. The Flemish Minister of Economy, Innovation, Work, Social Economy and Agriculture and the Flemish Minister of Justice and Enforcement, Environment, Energy and Tourism are the government representatives and lead the Circular Flanders Steering Committee.

Representatives from all five areas of society work across six thematic areas: circular construction, chemicals and plastics, water cycles, biobased economy, food chains, and manufacturing (i.e., textiles, furniture, electronics, and batteries). A public and a private lead are assigned to each of the six thematic areas and direct the creation of focused strategies and targets. Along with the thematic areas, there are also seven strategic levers that the steering committee must identify and elaborate on in the strategies and these include: financing, communication, research, jobs and skills, circular procurement, innovation and entrepreneurship, and policy instruments.

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<sup>61</sup> <https://vlaanderen-circulair.be/en>



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