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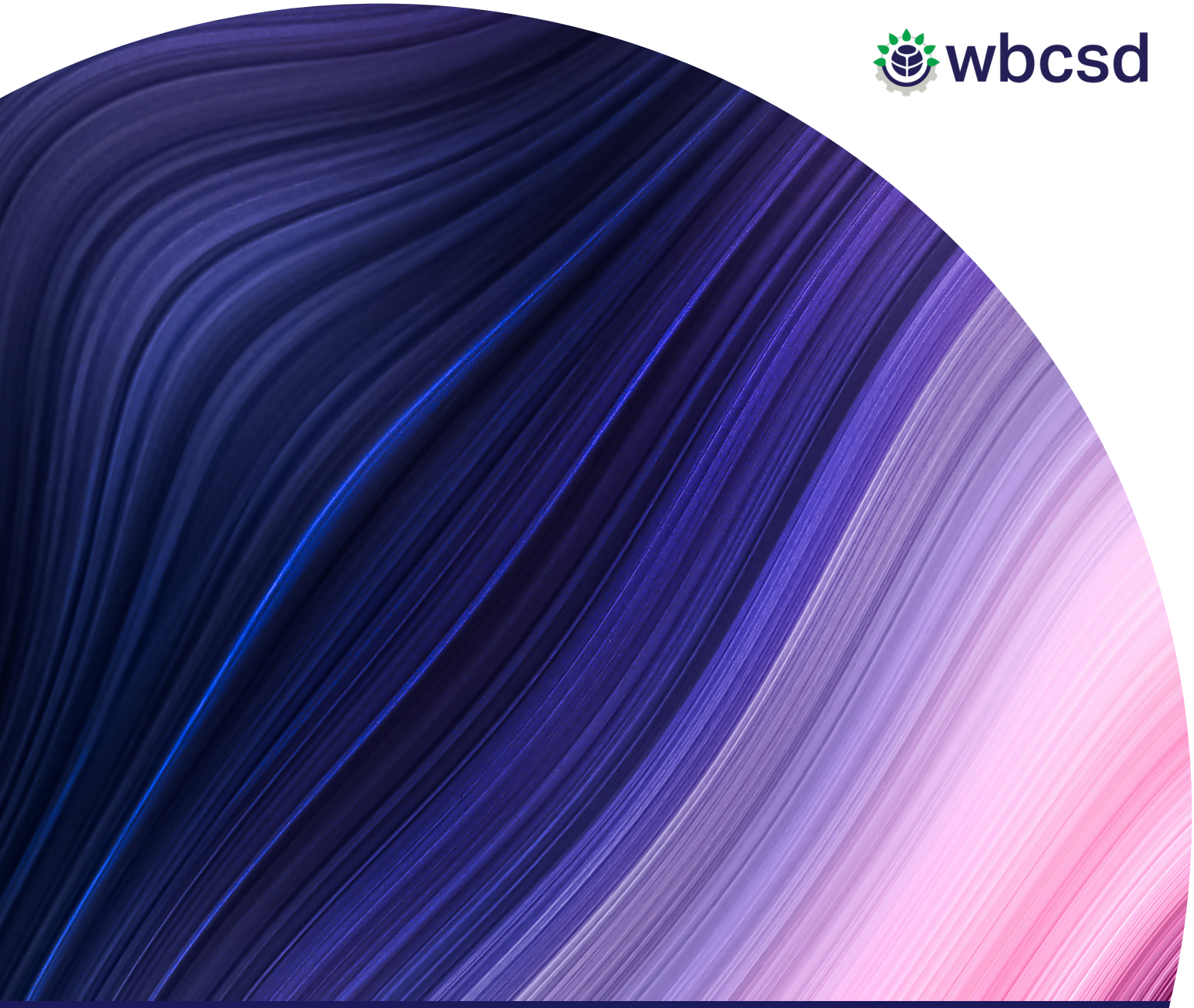


Policy brief: driving the transition to a circular economy

Contents

Key insights

The planet is facing unprecedented global challenges: the climate emergency, the loss of nature and growing inequality.

WBCSD Vision 2050 identifies the circular economy as a key lever to address these challenges and ultimately contribute to global efforts to achieve the Paris Agreement and the Sustainable Development Goals (SDGs).

Today the world is only 8.6% circular.[1] Accelerating the transition to the circular economy will require a collective effort. While Vision 2050 highlights key actions areas for business, governments must take ambitious actions and develop enabling frameworks to facilitate this transition.

This policy brief highlights key policy actions governments can take to facilitate the transition to a circular economy:

Stimulate circular business models by:

- Incentivizing the adoption of secondary materials;
- Promoting circular public procurement rules and targets;
- Supporting new technologies and innovations that promote reuse and recycling and enable the recovery of materials of value;
- Integrating circular economy strategies into nationally determined contributions;
- Harmonizing and integrating existing policies and building transparent policy frameworks.

Support design for circularity by:

- Adopting circular design standards and certificates;
- Promoting solutions designed for disassembly.

Reinforce product life cycles to maximize value and protect nature by:

- Collaborating to harmonize definitions and certification standards;
- Harmonizing trackable measures to document circularity status;
- Supporting and implementing solutions such as harmonized extended producer responsibility (EPR) schemes;
- Phasing out landfills;
- Discouraging incineration and waste-to-energy of mechanically recyclable material;
- Bolstering secondary material markets;
- Stimulating the use of circular and sustainable bio-based materials.

Sustain a transition that leaves no one behind by:

- Ensuring that it does not contribute to deepening inequalities;
- Informing and engaging civil society in the circular economy;
- Ensuring the health and safety of product handlers and processes workers.

Background

The planet is facing unprecedented and urgent global challenges: the climate emergency, the loss of nature and growing inequality. Each of them individually threatens livelihoods and well-being. The current system is not sustainable and the challenges have only accelerated during the COVID-19 pandemic. Addressing these issues requires a collective vision.

WBCSD's Vision 2050 envisions a world in which 9 billion people live well and within planetary boundaries by 2050.[2] The report identifies the circular economy as a key lever in achieving this vision while contributing to global agendas such as the Paris Agreement and the Sustainable Development Goals (SDGs). According to the Circularity Gap Report, the circular economy both contributes to decoupling growth from resource extraction and addresses climate issues by reducing global greenhouse gas (GHG) emissions by up to 39% by 2032.[3] Additionally, as 90% of biodiversity loss is due to the extraction and processing of materials, fuels and food, a circular economy can also mitigate biodiversity loss.[4]

Multiple stakeholders are recognizing the circular economy as a key enabler in addressing the planet's most pressing issues. Pioneering businesses are increasingly integrating circularity into their core business strategies. Leading international organizations are calling for the scaling up of circular principles. National governments are developing circular roadmaps and frameworks. Even the G7 recently reaffirmed its commitment to transitioning to a circular economy.[5]

Despite this global recognition, today the world is only 8.6% circular,[6] down from 9.1% in 2019. Now is the time for ambitious actions. Scaling the circular economy will be a collective effort. While our Vision 2050 highlights detailed action areas for businesses to leverage circular opportunities, governments must raise the ambition to facilitate this transition.

This policy brief highlights key priority policy areas that can drive a circular transition and put society on the path to reaching Vision 2050. Government policy priorities span four categories, each including specific policy recommendations and related policy actions:

1. Stimulating circular business models;
2. Supporting design for circularity;
3. Reinforcing product life cycles to maximize value and protect nature;
4. Sustaining a transition that leaves no one behind.

① Stimulate circular business models

Circular business models – such as circular supplies, resource recovery, product life extension, sharing platforms and product as a service – present a key enabler in transitioning to the circular economy. By embracing these models, businesses will reduce pressure on finite resources and reduce environmental impacts. Businesses have started to capture the estimated USD $4.5 trillion economic opportunity[7] in moving towards a circular economy. However, current market penetration of circular business models does not exceed 5-10%.[8] Much of this is due to the structural lock-in of linear economic models. Unlocking existing barriers and further scaling up circular business models will require an enabling policy framework.

Policy recommendations to stimulate circular business models

Incentivize the adoption of recycled materials in products through policies that promote the best balance of benefits such as safety, climate, circularity and affordability

To scale up circular supplies, governments must incentivize companies to include secondary materials and sustainable resources in their products.

Today, barriers such as price, quality, regulations and supply security hamper the use of secondary materials. High-quality primary materials are, for example, less expensive than secondary materials. Governments can use multiple levers to facilitate the use of recycled materials. For example, the Chinese government introduced various forms of value-added tax (VAT) incentives for the circular use of materials in 2009 already.[9]

Governments can support companies by implementing policy instruments such as:

- Providing tax breaks for companies using circular business models;
- Decreasing VAT for products containing significant recycled content (percentage might depend on product, geography, etc.);
- Reforming waste shipment regulations to enable the shipment of secondary raw material resources to best-in-class recovery facilities, while safeguarding policies to avoid illegal waste dumping;
- Collaborating with other governments and institutions to establish international certification and assurance schemes for recycled materials, covering both quality and supplier responsibility aspects.

Promote circular public procurement rules and targets to secure demand for circular products

Public procurement constitutes about 12% of total GDP in Organisation for Economic Co-operation and Development (OECD) countries.[10] Circular Public Procurement (CPP) represents a tremendous market opportunity for circular products through its potential to drive scale. By setting up CPP programs, governments ensure demand for circular products and services, bolstering the business case for those solutions. While the European Union's Action Plan for the Circular Economy[11] recognizes CPP as central driver in a circular economy and some countries have already implemented CPP rules and targets, scaling this practice geographically and across product and service categories will require further efforts.

Suggested measures for governments to implement include:

- Increasing the share of CPP in overall public procurement spending;
- Revisiting procurement specifications to include preference for products and services in their second life, including remanufactured, refurbished and leased;
- Setting up coherent CPP rules and targets going beyond waste management, including targets on recycled content, reusability, etc.

Support new technologies and innovations that promote reuse and recycling and enable the recovery of materials of value that would otherwise be considered as waste

Circular strategies such as reuse, recycling and recovery play a pivotal role in an efficient circular economy. Despite significant progress and innovation in these fields, reaching the scale needed for an economically viable and efficient circular economy will require further technological innovations. Changing regulations bring uncertainty, which can make the private sector hesitant to invest in the large-scale roll-out of new technologies or in further research and development (R&D) projects. To alleviate some of these barriers, governments can:

- Ensure a strong, transparent and stable policy framework to de-risk R&D and business investments;
- Develop innovation funds for circular-related R&D (e.g., material recovery technologies);
- Stimulate multistakeholder partnerships for circular innovations, while recognizing business needs for intellectual property when investing;
- Scale project support depending on innovation maturity levels.

Integrate circular economy strategies into nationally determined contributions and other policy frameworks

The transition to the circular economy is increasingly indispensable to achieving the Paris Agreement targets and SDGs. Going circular can reduce greenhouse gas emissions by 39%[12] and ultimately contribute to climate neutrality.

To leverage this opportunity, it is essential to break through silos and integrate sustainability agendas. Today, many discussions are happening in parallel, making the sustainability policy context complex and difficult to understand.
To leverage the potential of the circular economy potential to contribute to global agendas, governments can:

- Systematically integrate circular economy strategies in national climate plans, such as nationally determined contributions (NDCs);
- Integrate circular economy strategies in sustainability-related policy frameworks, such as climate, sustainable development and Agenda21 frameworks, across local, national and regional plans;
- Streamline language across sustainability agendas.

Harmonize and integrate existing policies and build transparent policy frameworks

Breaking silos goes beyond the sustainability agenda. Today, the lack of a holistic approach to policy-making constitutes a major barrier to scaling up the circular economy.[13] Many existing initiatives overlap or, worse, conflict. Some of the actions governments and policy-makers can take include:

- Assessing how the circular economy touches on all relevant departments and agencies to understand the full scope of holistic circular policy-making;
- Building stronger relationships with different departments and agencies, integrating circular economy in industry, trade and finance policies;
- Avoiding specific, incremental measures that broader linear-based regulations could block or that prevent the efficient, environmentally-sound flow of recycled and/or recovered materials across markets;
- Ensuring that existing policies are coherent with and not hampering or in conflict with policies that enable and encourage the transition to the circular economy.

Practical example - Clariant: Increasing recycling rates through effective policies

Europe recycles less than 3% of carpets sold on the continent.[14] This translates into 1.6 million tons of carpet waste annually. The fact that companies traditionally reinforce carpets with a latex coating that makes them nearly impossible to recycle can partly explain this. Additionally, there are few policy incentives globally to support higher recyclability of carpets and accelerate the shift to more circular alternatives.

Clariant's Licocene grades are low molecular polyolefins manufactured using metallocene catalysts. As a hot melt binder, they support the technology switch away from traditional water-based latex. Because it is not necessary to dry them, the hot melt backing technology saves up to 80% of energy during production and does not generate any contaminated wastewater. Clariant has also developed its Licocene technology to produce mono-material-based polypropylene carpets that are more easily recyclable. Licocene grades show an excellent ratio between low viscosity and cohesive strength. As they are easy to dissolve, they support recycling-focused design in various textile applications.

A policy context that creates a better enabling environment for carpet recycling would contribute to deploying other such sustainable solutions. California's Carpet Stewardship Program is one example of a policy program that aims to increase the amount of carpet diverted from landfills and recycled or managed in a manner consistent with the state's waste management hierarchy. California achieved a 19% recycling rate in 2019, up from 15% in 2018.[15]

The European Union's forthcoming Sustainable Textiles Strategy could play an important role in improving the overall framework conditions for the introduction of sustainable solutions at a faster rate in relevant value chains.

In general, clear policy provisions in terms of design for recycling, better collection and sorting systems, Extended Producer Responsibility (EPR) schemes, and recycling targets would help in deploying such solutions.

② Support design for circularity

Thinking about new products differently is at the heart of a truly circular economy. Efficient recycling efforts for the myriad materials in the global marketplace and successful end-of-life management that achieves strong environmental objectives are challenging. However, closing the loop goes far beyond recycling and end-of-life management. By implementing circular strategies at the design stage, it is possible to significantly influence product treatment at the end of use. Circular design can also contribute to longer product lifespans through reuse and repairability, for example. Such efforts require strong collaboration between actors upstream and downstream.

Policy recommendations that support design for circularity

Adopt circular design standards and certificates

The broad adoption of standards for circular design can push producer practices to move in the same direction, ultimately enabling the recovery of more value from products and materials throughout their lifetime.

Circular standards should allow governments to establish a level playing field for circular solutions.[16]

Governments can:

- Set up circular design standards;
- Build upon, connect and harmonize with existing, international standards;
- Engage with different stakeholders in the development of standards to ensure holistic improvement;
- Incentivize consistency of product components;
- Strive to develop outcome-based standards to allow for flexibility and innovation;
- Encourage a value chain perspective in addition to a product-based approach.

Promote solutions designed for disassembly

Designing for disassembly has several benefits. It can make it easier to repair or upgrade products, prolonging their useful life.[17] It can also help ensure the recycling of products and reuse of components.

In fact, the degree to which it is possible to easily disassemble a product often determines how the product will end its life. Designing for disassembly is therefore a key aspect of circularity as it enables the closing of material loops.

To encourage design for disassembly, governments can:

- Integrate product disassembly requirements in circular design standards;
- Provide financial incentives for products designed for disassembly;
- Integrate circular design and design for disassembly in targeted education programs;
- Encourage the development of infrastructure to effectively disassemble products and parts.

③ Reinforce product life cycles to maximize value and protect nature

Population growth coupled with more people entering the middle class will lead to expected demand for resources to reach 130 billion tons by 2050, up from 50 billion in 2014. This is an overuse of the planet's total capacity by more than 400%.[18] To curb this tendency, society must maximize product and resource value by extending lifespans. While circular business models can significantly contribute to this goal, it will require strong policy frameworks to address the barriers in doing so.

Policy recommendations to reinforce product life cycles to maximize value and protect nature

Collaborate to harmonize definitions and certification standards, enabling tracking and transparency of product circularity throughout the value chain and across regions

While it is possible to develop some key circular actions at the local level, regions and countries must collaborate to establish a global circular economy. With value chains now global, it is necessary to facilitate the exchange of clear information. Among other aspects, it is crucial to agree on common definitions of the circular economy and associated concepts.

In the past few years, the circular economy has gained significant momentum. That said, the level of understanding of the circular economy and associated concepts still varies significantly across countries and stakeholders. This results in large differences in the definitions of circular economy, waste and by-products worldwide, making implementation more complex. To address this, it is critical to adopt common definitions and criteria across countries and sectors.

The harmonization of definitions and criteria, coupled with the use of common certificates and standards, should reduce costs, improve transparency and facilitate collaboration. Ultimately, this makes closing loops and extending lifetimes easier and more economically attractive.

Governments can:

- Strive to collaborate with other stakeholders to use or develop a common definition of the circular economy;
- Work on the harmonization of waste legislation (i.e., definition of waste, end-of-waste, waste classification, etc.) to facilitate the safe return of products, harvested parts, materials and resources;
- Adopt widespread standards and labels to accelerate circular activity, capture efficiencies and improve transparency (e.g., origin and content of materials).

Harmonize trackable measures to document circularity status

With different understandings of what a circular economy is come different ways of measuring circular progress. In the last couple of years new methods to measure circularity at the product, company, government or value chain levels have emerged. As the lack of globally standardized indicators increases the complexity of the global circular economy picture, it is necessary to achieve harmonization in this space. An internationally agreed framework to measure circularity will also allow businesses and governments to reinforce shared objectives and exchange best practices. Efforts are already developing in this area with, for example, a new United Nations Economic Commission for Europe (UNECE) task force and the new International Organization for Standardization (ISO) technical committee for the circular economy. These expert groups will clarify the scope of measuring the circular economy.[19]

To this end, governments can:

- Collaborate with international organizations, businesses and other countries or regions to find consensus on circularity measurements;
- Incentivize companies and cities to measure their circularity to identify and assess risks and opportunities;
- Endorse a common approach or language for the private sector (companies) and the public sector (cities) to consistently measure circularity.

Support and implement solutions such as harmonized EPR, tax and take-back schemes

Extended Producer Responsibility (EPR) is a powerful tool to capture resources at the end of life. By shifting end-of-life responsibility for products upstream rather than to municipalities, EPR schemes push producers to include environmental considerations in the design of their products and provide an effective way of organizing the economic side of collection, sorting and recycling activities. While many countries and regions already use this policy instrument to increase resource efficiency, limit waste generation and incentivize eco-design, it is necessary to develop it further globally. Additionally, governments should make greater efforts to develop a more homogenous EPR framework through common principles. For example, one product design may meet EPR requirements in one country but not in another. This adds unnecessary costs to closing the loop on products.

Governments can:

- Implement EPR schemes that are consistent with global guidance (e.g., OECD), while clearly defining objectives and scope;
- Support and implement harmonized EPR schemes across countries and regions;
- Implement EPR schemes that are consistent with related policies, such as waste management and product policies;
- Develop monitoring and fair compliance mechanisms to assess EPR performance.

Phase out landfills using a tax while harmonizing landfill costs

European Union countries must reduce the amount of waste they send to landfills to a maximum of 10% by 2035. Currently, the average in the EU (including the United Kingdom) is 28%, with mixed realities across countries.[20] Because waste has no place in a circular economy, countries should phase out landfills. This requires a transition period with accompanying support measures. In the meantime, landfilling should be a last resort, after exhausting all other possibilities.

Governments and local authorities can:

- Discourage landfilling by deploying and gradually increasing taxes on landfilling;
- Introduce ambitious landfill reduction targets;
- Increase recycling capacity;
- Invest in and develop landfill rehabilitation programs.

Discourage incineration and waste-to-energy of mechanically recyclable material through policy incentives

High incineration rates are inconsistent with more ambitious recycling targets.[21] Along with landfilling, incineration should be a last resort option in the waste hierarchy.[22] Additionally, waste-to-energy is more expensive than most energy sources per same unit of energy and requires a substantial and steady flow of waste to maintain operations.[23]

To minimize the need for waste incineration, governments and local authorities can:

- Increase taxes on incineration of materials;
- Adopt tiered pricing for incineration, charging higher prices for more recyclable or biodegradable materials;
- Adopt source-separated collection of compostable materials, recyclables and other waste;
- Put restrictions in place, such as maximum volume of waste incinerated.

Bolstering secondary material markets

Although access to secondary resources is key to the development of circular business models, it is often complex for companies to find and secure secondary resources in sufficient and regular quantity and quality. Secondary material marketplaces allow secondary material suppliers and buyers to find each other on a web-based platform.[24] Governments have a role to play in establishing, sustaining and ensuring the safe development of these platforms.

Governments can:

- Support the development of safe and transparent secondary material exchange platforms;
- Encourage transparency on who is using or willing to use waste materials, such as through a material flow analysis, which can be useful in tracking and understanding material flows in a defined area and encouraging smooth secondary material markets;
- Push producers to keep track of information regarding volume, type and condition of waste outputs;
- Facilitate the safe transport and shipment of pre-owned products, parts and secondary raw materials across borders to stimulate international circular supply chains.

Stimulate the use of circular and sustainable bio-based materials

A circular bioeconomy in which resources are renewable, sustainably managed, recovered and reused as much as possible can significantly contribute to solving major environmental issues such as climate change, resource scarcity, biodiversity loss and land-use change.[25]

That said, companies can face multiple challenges in developing and scaling these sustainable bio-based solutions, such as initial investments, additional costs, new technology needed, availability of regular sustainable biomass supply, behavior change and policy and regulations.

To facilitate the use of these resources, governments can:

- Harmonize waste classification to consistently account for the use of secondary biomass as a circular input;
- Incentivize the cascading use of biomaterials through specific guidelines;
- Support R&D in the circular bioeconomy, for example for the development of tools to assess potential trade-offs between bio and non-biomaterials.

Practical example - Neste: how policies can scale up sustainable and circular solutions

Neste focuses on maximizing the use of raw materials from waste and biomass residue sources to provide the highest possible reduction in a product's greenhouse gas emissions when compared to products derived from crude oil and other fossil resources.

Concrete solutions such as drop-in bio-based plastics can help replace conventional plastics in multiple applications and reduce society's reliance on virgin fossil resources.

They also contribute to the transition to the circular economy. These polymers are inherently recyclable and reduce the use of virgin fossil raw materials while retaining technical properties that are identical to their fossil counterparts. Producers and brand owners can select such bio-based polymers to replace conventional traditional plastics without making any changes to production infrastructure lines. Moreover, these bio-based plastics represent a sustainable solution for high-end applications that require the prioritization of safety, performance and design (e.g., medical applications). Bio-based polymers also contribute to the transition to a circular economy as materials produced with bio-based polymers are suitable for reuse and recycling after use, similar to traditional plastics.

By incentivizing the use of secondary raw materials and promoting circular public procurement rules and targets, governments can play an important role in scaling up the production and uptake of these new solutions. This would narrow the existing cost gap between fossil and renewable and recycled solutions and increase the availability of products based on these more sustainable alternatives for end-customers.

4 Sustain a transition that leaves no one behind

The COVID-19 pandemic has exposed the limits of the current linear economic system. While it has deeply impacted lives, it has also provided the opportunity to build forward better. The circular economy should take a central role in rebuilding a more sustainable, resilient and inclusive society. While studies clearly show the environmental and economic benefits of the circular economy, the social aspects have been slower to rise on the circular agenda. A systemic change such as the one required by the circular economy can have far-reaching social impacts. For example, a study led by the International Labour Organization suggests that over the 163 economic sectors analyzed, 14 show employment losses of over 10,000 jobs worldwide, with two showing at least 1 million losses.[26] Governments should take such studies into consideration when developing circular policies.

Policy recommendations to sustain a transition that leaves no one behind

Ensure that the transition to circular economy does not deepen inequalities

The transition to the circular economy should create around 700,000 jobs by 2030[27] in the European Union alone. There is therefore an employment opportunity in shifting to a circular economy.

However, the type of jobs required by such an economy will be different, impacting sectors and regions unevenly. For example, the shift may affect regions dependent on extraction and mining more than those that do not.

Industries operating in the production and processing of virgin raw material are likely to decline while sectors focusing on recycling and repairing will grow.[28] Policy-makers should aim to seize the opportunities arising from these emerging activities early on and must ensure the mitigation of the potential negative social externalities through efficient policy measures.

To mitigate negative impacts on these often already vulnerable countries and regions, governments and international organizations can:

- Develop targeted assistance initiatives to support potentially affected countries and regions by shifting production and consumption patterns;
- Establish education and training programs to prepare the workforce for a change in skills and expertise demanded by the market;
- Value and develop existing skills and technologies in areas of reusability, repairability and recoverability;
- Adopt circular strategies specific to local and regional economic circumstances;
- Push companies to report on human rights performance across their global supply chains;
- Partner with academia to develop circular economy focused curricula.

Inform and engage civil society in the circular economy

Scaling up circular strategies will be a collective effort. Civil society, businesses and governments all have a key role to play. As environmental and climate issues have gained clear momentum throughout civil society over the last few years – especially with Millennials and Generation Z – it is mostly only specialists in international organizations, governments and businesses who discuss and understand the circular economy concept.

To effectively engage civil society in the circular economy, policy-makers can:

- Develop awareness-raising campaigns focusing on sustainable production and consumption and the circular economy;
- Provide economic incentives for consumers to buy more circular products and services;

- Adopt harmonized labels to highlight more circular and sustainable products and services;

Ensure the health and safety of product handlers and process workers.

Recycling and recovering resources implies more people working with potentially dangerous materials. It is necessary to make efforts to ensure that employees go through comprehensive training and work under safe conditions when handling potentially harmful products and materials.

To this end, policy-makers can:

- Assess safety risks for workers in the resource management space and develop policies to ensure safe work conditions, whether in the formal or informal sector;
- Integrate full life-cycle health and safety requirements at the design stage;
- Regulate and minimize hazardous substances from materials and products;
- Establish safe and coherent policies that facilitate greater transparency of hazardous materials and substances.

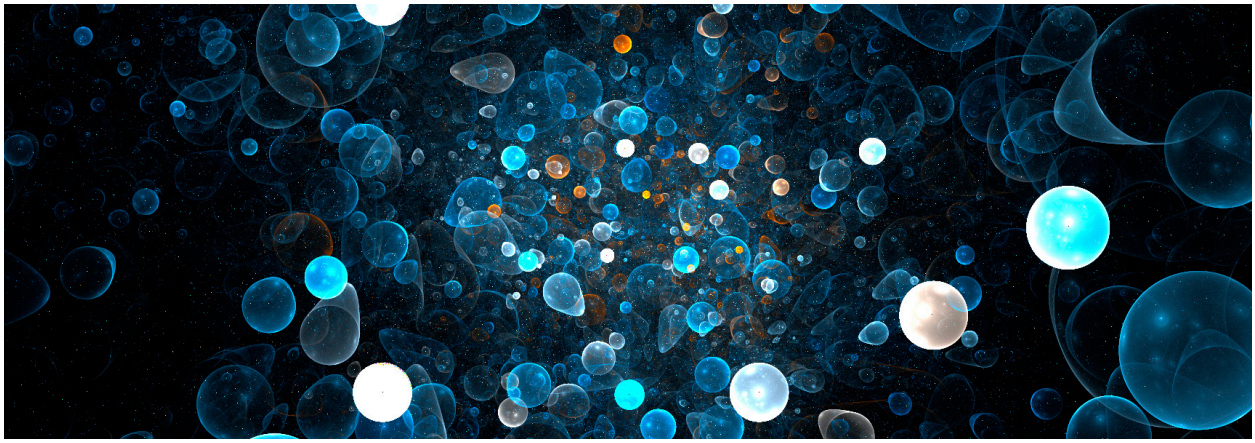
Practical example – Finland's development of a qualified circular economy workforce through education

Accelerating the transition to a circular economy will require more qualified experts capable of applying circular solutions in their jobs. Professionals educated in the circular economy will be crucial to scaling circular practices and will also have the skills employers will increasingly look for.

Today, too few programs or courses focus on studying the circular economy. To grasp the opportunity presented by the creation of some 700,000 jobs by 2030 and limit unemployment due to job obsolescence, governments and local authorities must work with strategic partners, schools and universities to develop new education programs.

Finland is a frontrunner in the circular economy and circular economy education. Over the 2018-2019 school year, the country went through a national experiment lead by Sitra, the Finnish Innovation Fund. Over the year, 70,000 children and young people in Finland learned about the circular economy in primary schools, secondary schools, vocational schools and universities of applied sciences across Finland.[29]

This translates into 75% of 12-year-olds and 40% of 15-year-olds having studied the circular economy.[30] The experiment was a success according to impact evaluation, with results showing that such curriculums should permanently include the circular economy. In addition to developing new skills, it has also contributed to raising awareness and understanding of the circular economy in society. Other countries and regions should follow this example to allow more people to gain skills in this area. Sitra has published information on how to create circular economy teaching materials.



Endnotes

[1] Circle Economy (2021). The Circularity Gap Report 2021. Retrieved from https://www.circularity-gap.world/2021#downloads

[2] WBCSD (2021). Vision 2050: Time to Transform. Retrieved from https://www.wbcsd.org/Overview/About-us/Vision-2050-Time-to-Transform

[3] Circle Economy (2021). The Circularity Gap Report 2021. Retrieved from https://www.circularity-gap.world/2021#downloads

[4] Sitra – The Finnish Innovation Fund (2021). "The circular economy is key to halting biodiversity loss". Retrieved from https://www.sitra.fi/en/articles/the-circular-economy-is-key-to-halting-biodiversity-loss/

[5] G7 United Kingdom (2021). "G7 Climate and Environment Ministers' Meeting Communiqué". Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/988551/g7-climate-environment-communique.pdf

[6] Circle Economy (2021). The Circularity Gap Report 2021. Retrieved from https://www.circularity-gap.world/2021#downloads

[7] Lacy, P. & Rutqvist, J. (2015). Waste to Wealth – The Circular Economy Advantage. New York/London: Palgrave Macmillan.

[8] Organisation for Economic Co-operation and Development (OECD) (2019). Business Models for the Circular Economy, Opportunities and Challenges for Policy. Retrieved from https://read.oecd-ilibrary.org/environment/business-models-for-the-circular-economy_g2g9dd62-en#page1

[9] WBCSD (2019). Policy enablers to accelerate the circular economy. Retrieved from https://www.wbcsd.org/Programs/Circular-Economy/Factor-10/Resources/Policy-enablers-to-accelerate-the-circular-economy

[10] Organisation for Economic Co-operation and Development (OECD) (2019). "Size of public procurement". Retrieved from https://www.oecd-ilibrary.org/sites/fc0c31c5-en/index.html?itemId=/content/component/fc0c31c5-en

[11] European Commission (2020). A new Circular Economy Action Plan for a cleaner and more competitive Europe. Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1583933814386&uri=COM:2020:98:FIN

[12] Circle Economy (2021). The Circularity Gap Report. Retrieved from https://www.circularity-gap.world/2021#downloads

[13] Organisation for Economic Co-operation and Development (OECD) (2020). The Circular Economy in Cities and Regions – Synthesis Report. Retrieved from https://www.oecd-ilibrary.org/urban-rural-and-regional-development/the-circular-economy-in-cities-and-regions_10ac6ae4-en

[14] Deutsche Umwelthilfe (2017). Swept under the Carpet: The Big Waste Problem of the Carpet Industry in Germany. Retrieved from https://changingmarkets.org/wp-content/uploads/2017/04/German-Carpet-Report-ENG.pdf

[15] CARE California Carpet Stewardship Program (2020). 2019 Annual Report. Retrieved from https://carpetrecovery.org/wp-content/uploads/2020/09/2019_CA_AnnualReport_v18_ADA_fnl.pdf

[16] Hartley, K. et al. (2020). "Policies for transitioning towards a circular economy: Expectations from the European Union (EU)". Resources, Conservation and Recycling, Volume 155, April 2020, 104634. Retrieved from https://www.sciencedirect.com/science/article/pii/S0921344919305403

[17] WBCSD (2017). Circular Economy Practitioner Guide. Retrieved from https://www.ceguide.org/Strategies-and-examples/Design/Design-for-disassembly-deconstruction

[18] WBCSD (2017). CEO Guide to the Circular Economy. Retrieved from https://www.wbcsd.org/contentwbc/download/3418/44718/1

[19] United Nations Economic Commission for Europe (UNECE) (2021). "UNECE Task Force will advance internationally comparable measurement of the circular economy". Retrieved from https://unece.org/media/Circular-Economy/press/357496

[20] InterregEurope (2020). Sustainable Waste Management in a Circular Economy: A Policy Brief from the Policy Learning Platform on Environment and Resource Efficiency. Retrieved from https://www.interregeurope.eu/fileadmin/user_upload/plp_uploads/policy_briefs/Policy_brief_on_waste_management.pdf

[21] InterregEurope (2020). Sustainable waste management in a circular economy: A Policy Brief from the Policy Learning Platform on Environment and resource efficiency. Retrieved from https://www.interregeurope.eu/fileadmin/user_upload/plp_uploads/policy_briefs/Policy_brief_on_waste_management.pdf

[22] European Commission (2008). "Waste Framework Directive". Retrieved from https://ec.europa.eu/environment/topics/waste-and-recycling/waste-framework-directive_en

[23] GAIA (2020). The High Cost of Waste Incineration. Zero Waste World. Retrieved from https://zerowasteworld.org/wp-content/uploads/The-High-Cost-of-Waste-Incineration-March-30.pdf

[24] WBCSD (2017). Circular Economy Practitioner Guide. Retrieved from https://www.ceguide.org/Strategies-and-examples/Dispose/Secondary-material-market-places

[25] WBCSD (2019). CEO Guide to the Circular Bioeconomy. Retrieved from https://www.wbcsd.org/contentwbc/download/7723/122348/1

[26] International Institute for Sustainable Development (IISD), Sitra – The Finnish Innovation Fund (2020). Effects of the Circular Economy on Jobs. Retrieved from https://www.iisd.org/system/files/2020-12/circular-economy-jobs.pdf

[27] European Commission (2018). Impact of circular economy policies on the labour market. Retrieved from https://op.europa.eu/en/publication-detail/-/publication/fc373862-704d-11e8-9483-01aa75ed71a1/language-en

[28] European Commission (2018). Impact of circular economy policies on the labour market. Retrieved from https://op.europa.eu/en/publication-detail/-/publication/fc373862-704d-11e8-9483-01aa75ed71a1/language-en

[29] Sitra – The Finnish Innovation Fund (2019). How to make the circular economy part of the national education system – Tips from Finland. Retrieved from https://www.sitra.fi/en/articles/how-to-make-the-circular-economy-part-of-the-national-education-system-tips-from-finland/

[30] Sitra – The Finnish Innovation Fund (2019). How to make the circular economy part of the national education system – Tips from Finland. Retrieved from https://www.sitra.fi/en/articles/how-to-make-the-circular-economy-part-of-the-national-education-system-tips-from-finland/

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FACTOR10

Factor10 is WBCSD's Circular Economy project. We bring companies together to reinvent how business finds, uses and disposes of the materials that make up global trade. By collaborating on solutions that go beyond business as usual, Factor10 will deliver high-impact, large-scale results where companies use resources wisely, implement processes that create the greatest possible value, and nothing is wasted.

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WBCSD is a global, CEO-led organization of over 200 leading businesses working together to accelerate the transition to a sustainable world. We help make our member companies more successful and sustainable by focusing on the maximum positive impact for shareholders, the environment and societies.

Our member companies come from all business sectors and all major economies, representing a combined revenue of more than USD $8.5 trillion and 19 million employees. Our global network of almost 70 national business councils gives our members unparalleled reach across the globe. Since 1995, WBCSD has been uniquely positioned to work with member companies along and across value chains to deliver impactful business solutions to the most challenging sustainability issues.

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