

March 2022



Case study

Trade in support of circular economy

Opportunities between Canada and the EU



Institute for European Environmental Policy

SITRA



The Institute for European Environmental Policy (IEEP) is a sustainability think tank.

Working with stakeholders across EU institutions, international bodies, academia, civil society and industry, our team of economists, scientists and lawyers produce evidence-based research and policy insight.

Our work spans nine research areas and covers both short-term policy issues and long-term strategic studies. As a not-for-profit organisation with over 40 years of experience, we are committed to advancing impact-driven sustainability policy across the EU and the world.

For more information about IEEP, visit www.ieep.eu or follow us on Twitter [@IEEP_eu](https://twitter.com/IEEP_eu) and [LinkedIn](https://www.linkedin.com/company/ieep).

DISCLAIMER

The arguments expressed in this report are solely those of the authors, and do not reflect the opinion of any other party.

THE REPORT SHOULD BE CITED AS FOLLOWS

Blot, E. (2022). 'Trade in support of circular economy – Opportunities between Canada and the EU, case study. Institute for European Environmental Policy, Brussels / London.

CORRESPONDING AUTHORS

Eline Blot (eblot@ieep.eu)

ACKNOWLEDGEMENTS

We gratefully acknowledge helpful reviews and comments from the stakeholders that participated in the interview process and their valuable contributions to this case study, as well as the comments from this project's Steering Committee.

© Photo by [Pat Whelen](#) on [Unsplash](#)



This work has been produced with the financial support of the LIFE Programme of the European Union. The paper reflects only the views of its authors and not the donors.

IEEP main office

Rue Joseph II 36-38,
1000 Brussels, Belgium
Tel: +32 (0) 2738 7482
Fax: +32 (0) 2732 4004

London office

25 Eccleston Place
London, SW1W 9NF
Tel: +44 (0) 20 7799 2244

Table of Contents

Executive summary	1
1. Introduction	4
1.1 Circular economy and the EU	4
1.2 EU-Canada case study: aim and approach	6
2. EU-Canada trade relationship	7
2.1 What is the trade framework?	7
2.2 EU-Canada bilateral trade	9
3. Circular economy in canada	13
3.1 Broad environmental context	13
3.2 Challenges to the uptake of circular practices	15
4. Trade in support of circular economy	17
4.1 Mining sector	17
4.2 Automotive industry	21
4.3 Bioeconomy	23
5. Conclusions and recommendations	25
5.1 Recommendations	26

EXECUTIVE SUMMARY

The EU's Circular Economy Action Plan, announced in March 2020, highlights the EU's intention to lead efforts on the circular economy at a global level. The Action Plan sets out to pursue this objective through partnership initiatives, outreach activities and the utilisation of its trade agreements.

Canada and the EU share both a strong diplomatic and trade relationship, and as the EU begins to develop and implement the various circular policy initiatives of the CEAP, these two trade partners must prepare for what this shift to circularity will mean for their common supply chains. Indeed, an inherent element of the CEAP is that the effects of its new domestic policies are undoubtedly bound to spill over, affecting trade flows, and consequently, socio-economic development at a global scale.

As key supply chains are targeted by new sustainability standards under the CEAP, the EU must seek partnerships and lead the charge by envisaging a trade policy framework for businesses to innovate and trade with new circular markets across the world while accounting for negative effects to global sustainable development.

This assessment seeks to analyse Canada and the EU's current trade relationship and framework, the Comprehensive Economic and Trade Agreement (CETA), and how it may both benefit from the implementation of circular practices and how it can be supportive of the global shift to a circular economy.

While on a national level, Canada's vision for a circular economy is not as fully developed as the EU's, Canadian industries, and local governments (provinces and territories) display both a willingness and intent to transition to more circular practices. In particular, this case study identifies key Canadian industries that benefit from the CETA framework and demonstrate strong potentials for closed cooperation on circular economy principles. So far, Canada's natural resources sectors (minerals, metals, forestry and agricultural product for industrial use) have already implemented many initiatives to promote environmentally-friendly extraction processes and the development of programmes to encourage the reprocessing of residuals.

Even though the CETA does not explicitly mention efforts to collaborate on circular economy, there are resources within the agreement that could enable closer cooperation in this space. Specifically, the agreement establishes several

committees and moments for dialogues – on trade and sustainable development in general and – on forestry products and raw materials.

Notably, the “Bilateral Dialogue on Raw Materials” has led to the establishment of the Canada-EU Strategic Partnership on Raw Materials which looks to develop resilient supply chains; support innovation and circularity; and strengthen domestic sourcing and processing of raw materials in the EU.

In the CETA, both Parties commit to cooperation on trade and sustainable development issues at the multilateral level such as at the WTO, United Nations General Assembly, the United Nations Environment Assembly, as well as at MEA meetings. Going further, Canada and the EU have made efforts to collaborate on circular economy by being members of the Global Alliance on Circular Economy and Resource Efficiency (GACERE), of which the EU is a founding member¹.

To continue to push the circular economy agenda, Canada and the EU stand to benefit from closer cooperation, both under the CETA framework, as well as with other countries at the multilateral level. These efforts should aim to build a common understanding of what a global circular economy is, and the trade implications of this shift.

Based on this assessment, the following recommendations have been developed with aims to maximise the benefits of EU-Canada relations at the bilateral and multilateral levels:

At the **bilateral level**, the CETA provides different avenues for cooperation, in particular via dedicated committees or meetings which cover exchanges on relevant measures that may impact trade in natural resources (forest products, marine resources, critical materials), in addition to trade and sustainable development, and regulatory cooperation. Both Parties must therefore continue to support bilateral dialogues set up under the CETA framework, including the “Bilateral Dialogue and Cooperation” meetings on forest product and critical materials, as well as the Canadian and European DAG meetings (which monitor the implementation of the TSD Chapter commitments). This could involve the following measures:

- Ensure the relevant dialogue organisers are provided sufficient resources to begin to address the shift to circularity. These resources could be used by the dialogue members to commission research reports and support the organisation of more dialogue sessions on the trade impacts of circular

¹ European Commission. (2021). Global Alliance on Circular Economy and Resource Efficiency (GACERE). [Link](#).

economy. As natural resources make up not only a significant share of Canada's economy, but also possess strong potential for circularity the "Bilateral Dialogue and Cooperation" meetings are key in this space.

- Bring together relevant Canadian and European stakeholders, including government actors, industry representatives, as well as internal (e.g., DG ENV and DG CLIMA) and external experts to allow for detailed discussion on the trade implications of the development and implementation of new domestic legislations, such as the EU's CEAP.
- Use these meetings to exchange knowledge regarding circular economy legislation, data collection methods, monitoring frameworks and begin to close data gaps on the flow of material and energy resources. This could aid Canada in the development of a more comprehensive national circular economy strategy, while both partners can begin to harmonise on data collection methods and monitoring practices.

Efforts at the **multilateral level** can lead to concrete outcomes if both Parties share and push for a common objective at international fora, meaning, Canada and the EU should:

- Champion discussions at the WTO in cooperation with other like-minded trade partners on circular economy and environmental sustainability through trade. The WTO has launched several Trade and Environmental Sustainability Structured Discussions², of which Canada and Costa Rica are the co-coordinators. Such platforms present an opportunity to create a commonly agreed-upon foundation for trade and trade policy to support environmental sustainability.
- Take forward dialogues in the GACERE and at other multilateral fora focus on the development of standards for circularity and mutual recognition for trade in secondary materials.
- Support public-private collaboration throughout the development of circular economy frameworks and the process of standard development for circularity. The private sector is a valuable resource in this space that possesses a wealth of expertise and adaptability with a better eye for process efficiencies.
- Back initiatives such as the World Circular Economy Forum (the 2021 edition was hosted in Toronto), which form an indispensable platform for evidence-based public-private discussion on circularity and its global implications on trade and supply chains.

² Geneva Trade Platform. (2022). Trade and Environmental Sustainability Structured Discussions (TESSD). [Link](#).

1. Introduction

The circular economy seeks to alter the present economic paradigm by addressing our current, ever-increasing resource extraction from the Earth's finite resources. Accordingly, resource efficiency alleviates the excessive extraction of resources, but also contributes to decarbonisation, as a considerable amount of our carbon emissions are related to how we produce and consume products. A global scale-up of the circular economy will therefore not only advance global decarbonisation efforts but also unlock greater benefits to resource efficiency.

1.1 Circular economy and the EU

In March 2020, the EU took a substantial step forward towards the transition to a European circular economy by adopting the EU Circular Economy Action Plan³ (CEAP) under the EU Green Deal. The Action Plan paves a pathway to European circularity by outlining a Sustainable Product Policy framework and plans to target key value chains with great potential for circularity including electronics and ICT, batteries and vehicles, packaging, plastics, textiles, construction and buildings, and food, water and nutrients.

Moreover, the CEAP proposes the establishment of a Global Circular Economy Alliance, a more integrated partnership with Africa and the inclusion of new circular economy objectives in its future free trade agreements (FTAs), thereby acknowledging the need to scale up towards a global circular economy. Cooperation on a multilateral level is key to unlocking the benefits of scale tied to a global circular economy but, also, to mitigate unwanted consequences to sustainable development caused by a shift in trade flows caused by an altered demand from primary to secondary resources in the medium to long term.

Indeed, an inherent element of the CEAP is that the effects of its new domestic policies are undoubtedly bound to spill over, affecting trade flows, and consequently, socio-economic development on a global scale. Production and consumption, materials, goods, services and data are linked through global trade. As key supply chains are targeted by new sustainability standards under the CEAP, the EU must seek partnerships and lead the charge by envisaging a trade policy framework for businesses to innovate and trade with new circular markets across the world while accounting for negative effects to global sustainable development. The EU indeed has the opportunity to inspire, lead and leverage access to its market to reach for improved standardisation with its trading partners.

³ European Commission. (2020). Circular Economy Action Plan. [Link](#).

One example of shifting trade streams is waste exports. Prior to the publication of the CEAP, EU circular economy policies targeting domestic waste recycling partially relied on exporting waste to be recycled abroad. Although it allowed EU to achieve its own recycling rate targets, once waste is shipped abroad – usually to developing countries – the EU cannot guarantee the quality of the recycling process.

Since 2017, many of the EU's waste recipients closed their ports for plastic waste shipments, including China, India, Thailand, Vietnam and Malaysia. In need of a new approach to dealing with its waste, the EU's CEAP focuses on preventing waste creation in the first place and taking charge of reverse value chains. Moreover, in January 2021, the EU placed a ban on exporting hazardous and hard to recycle plastic waste to non-OECD countries in addition to tightening the rules on clean, non-hazardous waste exports to these same countries⁴.

The next main milestone in terms of EU domestic measures is with the CEAP's Sustainable Product Initiative which is expected to be published in March 2022 by the European Commission and which will put forward new sustainability standards for goods imported to the EU.

Other implications of the CEAP on EU trade flows are related to the introduction of new measures on production and the reduction of barriers to trade for secondary resources. The former intends to empower consumers and increase product sustainability by increasing opportunities for product repairability, reusability and durability by introducing new standards and criteria for products sold on the EU market. The latter aims to incentivise the market for secondary raw materials by pushing for better harmonisation of rules applied to waste and spent goods.

When it comes to the EU's FTAs, only three draft agreements still under negotiation mention the circular economy in their Trade and Sustainable Development (TSD) Chapters, in particular the agreements with Australia, New Zealand and Mexico. Although other agreements in force acknowledge the need for sustainable production and consumption of goods, as of yet, the concept of circular economy is far from being a regular feature in FTAs. Although the EU's 2021 Trade Policy Review⁵ reaffirms the need to seek commitments from its trade partners to further global efforts towards the circular economy transition – the EU must begin to deeply integrate circular economy principles in its trade policy and its implementation.

⁴ [EC](#) (Dec 2020)

⁵ [EC](#) (Feb 2021)

1.2 EU-Canada case study: aim and approach

Ensuring the global expansion of the circular economy not only calls for a higher demand for secondary resources but also a higher supply of these resources to establish and secure a global market for recycled and reusable raw materials. In turn, establishing a market for reliable secondary materials requires attention to detail regarding resource and product definitions and standards. Variation in definitions, regulations and standards across geographical areas for trade in secondary resources forms a glaring technical burden, hindering efficient material circularity and disproportionately disadvantaging MSMEs, both within the EU and between EU and third countries.

With the CEAP's Sustainable Product Policy initiative putting forward new sustainability standards for goods, the EU has the opportunity to leverage access to its market to reach for improved standardisation with its trading partners. The following case studies look into the EU's trade relationship with several trade partners where increased circular economy cooperation would be particularly beneficial.

Canada has been selected for a case study because of its multilateral efforts towards trade and sustainability and the circular economy, as a member of the WTO's Trade and Environmental Sustainability Structured Dialogues (TESSD) and the Global Alliance on Circular Economy and Resource Efficiency (GACERE).

Another key factor is Canada's strong trade relationship with the EU through the Comprehensive Economic and Trade Agreement (CETA). Bilateral trade between the EU and Canada consists mainly of similar categories of goods, in particular, machinery and mechanical appliances, pharmaceuticals, fuels and aircraft (parts) making up half of the highest value traded goods between the partners. These product value chains (including electronics, chemicals, steel, aluminium) are highly likely to be targeted by new environmental and sustainability standards or other autonomous EU measures, such as the carbon border adjustment mechanism (CBAM).

In addition to the abovementioned goods, further opportunities for circularity can be found in Canada's mining sector, as gold, iron and copper ores are largely imported by the EU, as well as in Canada's forestry sector. Moreover, the EU imports Canadian oil seeds, such as soya beans, colza, rape, presenting an opportune trade relationship with potential to promote the circular bioeconomy.

This case study was drafted by the Institute for European Environmental Policy. The preparation of the case study included a period of desk-based literature review, followed by expert interviews.

2. EU-CANADA TRADE RELATIONSHIP

This section looks at the current trade framework which governs EU-Canada bilateral trade in goods and services and assesses the level of integration of circular economy-relevant initiatives and practices. Then this section presents an overview of EU-Canada trade in goods and services over recent years.

2.1 What is the trade framework?

Trade between Canada and the EU falls under the pair's bilateral trade deal, the Comprehensive Economic and Trade Agreement (CETA). The CETA has been provisionally applied since 2017, awaiting approval from all EU member state national or regional parliaments.

The CETA gets rid of over 98% of Canadian customs duties for EU exports, in particular reducing tariffs to 0% for EU manufacturing exports including clothing and textiles, vehicles and parts, machinery and electrical equipment, medical devices, and chemicals⁶. These industries are relevant to the circular economy in terms of the upstream inputs (steel, iron, aluminum, minerals) or downstream outputs (recycling or second-hand use of goods such as vehicles, electronics, textiles).

The agreement itself does not explicitly mention the circular economy; however, the agreement's Trade and Sustainable Development (TSD) Chapter refers to certain circular economy principles in the section on cooperation on environmental issues. Specifically on trade and investment in environmental goods and services, the agreement mentions "environmental and green technologies and practices; renewable energy; energy efficiency; and water use, conservation and treatment;" and the "promotion of life-cycle management of goods, including carbon accounting and end-of-life management, extended producer responsibility, recycling and reduction of waste, and other best practices."

The TSD Chapter also establishes a basis for cooperation on labour and environmental issues. The EU has sought more concessions on sustainability from its developed country trade partners. For example, the draft TSD Chapters for the EU-Australia and EU-New Zealand FTAs include additional provisions to increase cooperation to promote 'sustainable production and consumption, circular economy, green growth and pollution abatement.' While Canada does not have similar provisions for sustainable production and consumption, it does have provisions regarding cooperation in which Parties agree to cooperate on tackling

⁶ EC – CETA factsheet and guides: An overview of CETA (Sept 2017). [Link](#).

environmental issues at international fora such as the WTO, OECD, UNEP and dialogues linked to MEAs.

Moreover, the TSD Chapter establishes dedicated Domestic Advisory Groups in which various stakeholders (business, labour, NGOs) from each partner country gather to discuss the implementation of the TSD Chapter provisions. These meetings provide opportunities for different stakeholder groups to co-create recommendations for the accelerated uptake of circular economy principles by governments and businesses.

The CETA incorporates a chapter on “Bilateral Dialogues and Cooperation” which establishes the joint objective to ensuring sustained cooperation in four specific areas. These areas include bilateral dialogues on forest products and raw materials, including minerals, metals and agricultural products with industrial use. The objective of these meetings is to cooperate and exchange on the development, adoption and implementation of relevant laws, regulations, policies, standards, as well as testing, certification and accreditation requirements and the potential impacts of these measures on the trade in forest products and raw materials.

Both areas have held four meetings so far since the provisional entry into force of the agreement. In particular, the “Bilateral Dialogues on Critical Materials” has led to the delivery of the Canada-EU Strategic Partnership on Raw Materials⁷ to advance the value, security, and sustainability of trade and investment into the critical minerals and metals needed for the transition to a cleaner and digitized economy. This strategic partnership is the first that the EU has developed with priority countries following the European Commission’s announcement to pursue an Action Plan on Critical Raw Materials⁸ that looks to develop resilient supply chains and support innovation and circularity.

Despite the minimal reference to circularity throughout the CETA itself, other chapters of the agreement are highly relevant to the development of an international circular economy. For example, the Technical Barriers to Trade (TBT) Chapter is a chapter that establishes principles for the development and mutual recognition of standards, including environmental. The aim of the TBT Chapter is to ensure no superfluous barriers to trade are created by technical regulations and standards and to ensure these are applied in a non-discriminatory manner.

Finally, the chapter on regulatory cooperation states that Parties shall strengthen their cooperation in the areas of technical regulations, standards, metrology,

⁷ Government of Canada. (2021). Joint Statement by Canada’s Minister of Natural Resources and the European Commissioner for Internal Market. [Link](#).

⁸ European Commission. (2020). Commission announces actions to make Europe’s raw materials supply more secure and sustainable. [Link](#).

conformity assessment procedures, market surveillance or monitoring and enforcement activities in order to facilitate trade. These chapters together must aim to balance each other in order to support the development of essential standards to support the circular economy whilst ensuring the fair application of these standards so as not to hinder international trade.

2.2 EU-Canada bilateral trade

Trade in goods

In 2019, the EU imported over €20 billion worth of goods from Canada and exported €38 billion worth. Figure 1 presents the EU's imports from and exports to Canada from 2013 to 2020. Prior to the provisional application of CETA, the partners' trade relationship was rather consistent (2013-2016). Towards the end of 2017, CETA came into force (provisionally), which is noticeable through the slight uptick in both imports and exports and the steady increase of the trade balance for the two consecutive years.

However, in 2020 because of the COVID-19 pandemic, Canada saw its total trade with the EU shrink by 4.6% while the EU saw a more pronounced decrease of 12.7% compared to 2019⁹. The pandemic's impact on EU-Canada bilateral trade is clear, yet the traded values in 2020 did not drop below pre-CETA implementation levels.

What goods are traded?

The largest product groups the EU exports to Canada are (i) machinery and transport equipment, (ii) chemical-related products such as pharmaceuticals, and (iii) non-electrical manufactured goods. In turn, the EU mainly imports primary commodities including (iv) fuels and mining products, (v) agricultural products, and (vi) machinery and transport equipment¹⁰.

Based on the trade data available, EU imports of Canadian natural resources and agricultural goods include iron ores and concentrates, oilseeds such as rape, colza and soy, crude petroleum, wheat, coal, and wood scraps for fuel¹¹. Moreover, the largest traded product category imported by the EU (in traded value) is 'Ores, slag and ash' (category 26) which includes ores such as iron, copper, and nickel, as well as other precious metals ores and concentrates. Imports of gold (category 7108) ranks as the highest among EU imports from Canada, yet it is important to note that gold has a high value-to-weight ratio, meaning this category is not ranked among the highest when viewing 'trade in weight'.

⁹ European Commission. (2021). European Union, Trade in goods with Canada. [Link](#).

¹⁰ European Commission. (2021). European Union, Trade in goods with Canada. [Link](#).

¹¹ UN Comtrade Database. (2021). [Link](#).

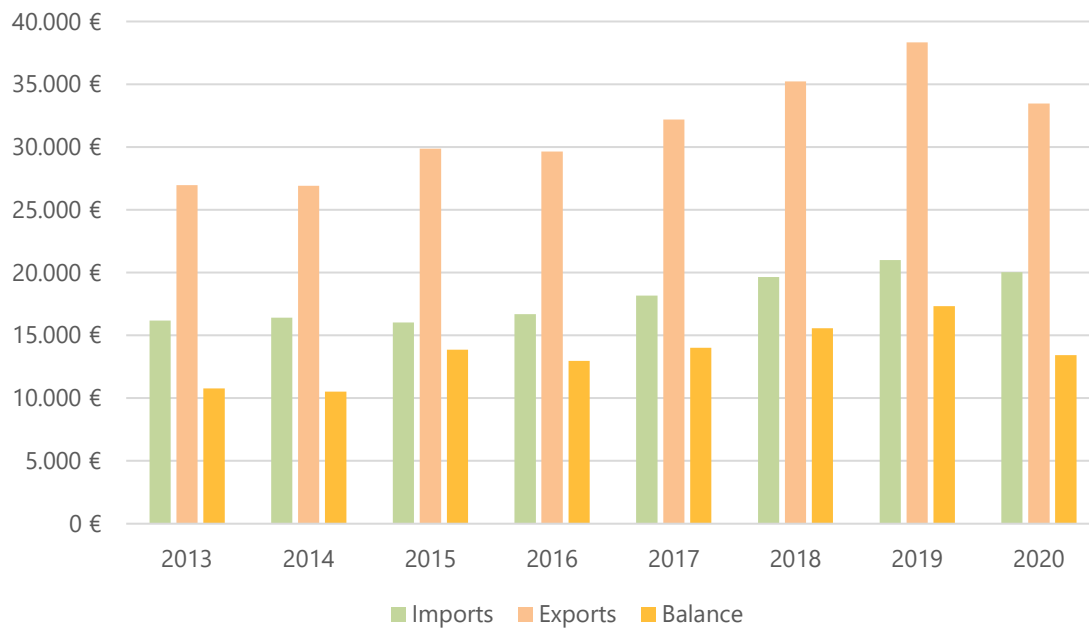
Figure 1: EU trade in goods with Canada in million euros

Figure 1: European Commission. (2021). European Union, Trade in goods with Canada. [Link](#).

The 2020 impacts of the COVID-19 pandemic on EU-Canada trade follows the general trends as reported by the WTO. The macroeconomic shock brought on by the pandemic affected global supply chains and consequently merchandise trade disproportionately, resulting in a decline in manufactured goods trade and a stable continuation (and in some cases a growth) of trade in agricultural goods¹².

Overall, Canada saw a strong decline in European demand for its manufactured goods due to COVID-19, while demand for its primary goods such as agricultural products and minerals increased during the pandemic¹³. Specifically, goods that had the greatest year-on-year declines in trade growth for both parties were petroleum and petroleum-related products, and transport equipment. Conversely, EU imports of Canadian agri-food products grew by 35.4% compared to 2019 and EU imports of ores and other minerals increased by 2.9% over the same period¹⁴.

¹² WTO – World trade primed for strong but uneven recovery after COVID-19 pandemic shock. (March 2021). [Link](#).

¹³ UN Comtrade Database. (2021). [Link](#).

¹⁴ European Commission. (2021). European Union, Trade in goods with Canada. [Link](#).

Trade in services

The service sector plays a key role in the development of a circular economy as a main channel to remove information barriers and encourage the uptake of circularity-enhancing practices¹⁵.

Canada ranks ninth in the EU's top ten trade partners in services, totalling just under €22 billion and €14 billion worth of exports and imports respectively in 2019¹⁶. For comparison, the US is one of the EU's largest trading partners in services, with the EU having exported over €200 billion worth of services to the US¹⁷.

Figure 2: EU trade in services with Canada in million euros

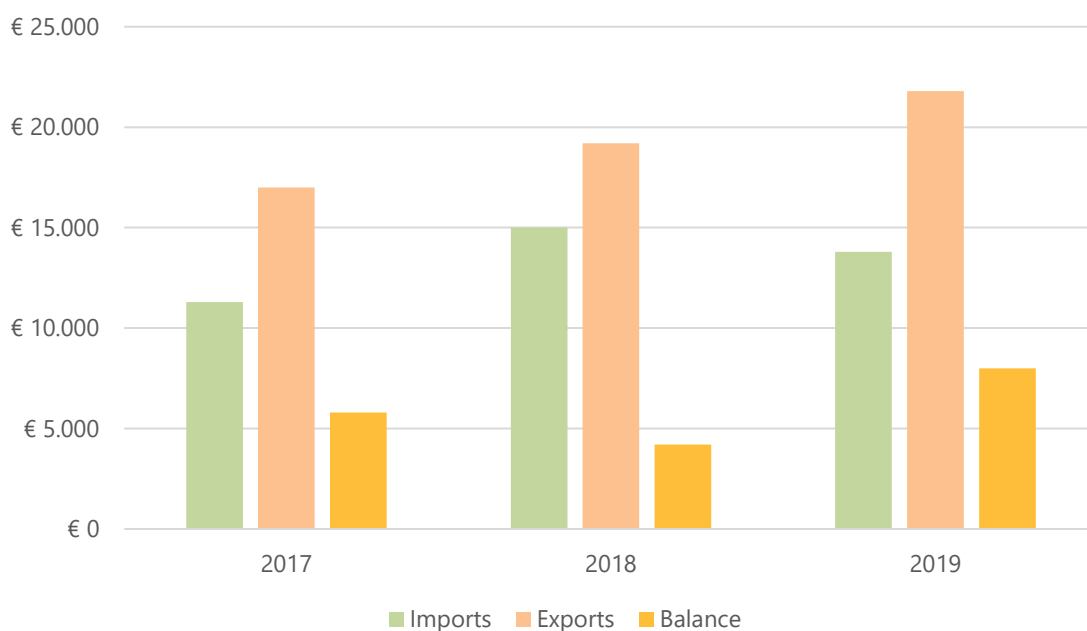


Figure 2: European Commission. (2021). Trading with Canada. [Link](#).

Figure 2 presents the EU's imports and exports of services with Canada from 2017 to 2019. Similarly, with the statistics of trade in goods, the export of European services to Canada increases from 2017 after the provisional application of CETA. Yet, from 2018 to 2019 there is an increase in the EU's trade balance with Canada, which is explained by a rise in EU imports of Canadian services in 2018, followed by a slight drop in 2019.

¹⁵ UNCTAD. (2018). Circular Economy: the New Normal. [Link](#).

¹⁶ European Commission. (2021). Trading with Canada. [Link](#).

¹⁷ Eurostat. (2021). Trade in services with non-member countries (extra-EU), main partners EU, 2018 and 2019 (billion EUR). [Link](#).

Regarding the immediate impact of the COVID-19 pandemic on the service sector, global trade in services dropped by 7% in Q1 of 2020, 28% in Q2, 24% in Q3 and 19% in Q4 of 2020 compared to the same periods in 2019¹⁸. There is no available data on EU-Canada bilateral trade in services, so we cannot grasp the impact of the pandemic on the bilateral trade relation, however, these global trends hold true for both Canadian and European export of services.

The UNCTAD statistics reveal in Q2 of 2020, at the height of the pandemic, that the travel sector was hit hardest, followed by the transport sector. Good-related services such as manufacturing, maintenance and repair services also saw a decrease in growth compared to the previous year while the “other services”¹⁹ category saw the smallest decline.

UNCTAD’s November 2021 Global Trade update report concludes that the recovery of trade in services is progressing, trailing behind the recovery of trade in goods, with lags in vaccine production and distribution being the most likely cause of delayed recovery²⁰. The report confirms a growth in services trade from Q1 2021 that reached pre-pandemic levels in Q3 and is forecast to continue to slowly recover in Q4²¹.

¹⁸ UNCTAD STAT. (2021). Trade and growth by main service-category, quarterly. [Link](#).

¹⁹ Construction, insurance and pension services, financial services, telecommunications, computer and information services, other business services, personal, cultural and recreational services, government goods and services, ... from UNCTAD. (2020). International trade in services 2020 quarter 1. [Link](#).

²⁰ WTO. (March 2021). World trade primed for strong but uneven recovery after COVID-19 pandemic shock. [Link](#).

²¹ UNCTAD. (2021). Global Trade Update. [Link](#).

3. CIRCULAR ECONOMY IN CANADA

This section takes a broad look at Canada's environmental context, the state of the Canadian circular economy and supporting policies. Then this section assesses specific opportunities and challenges in Canada's shift to the circular economy, shifting its assessment to different sectoral perspectives.

3.1 Broad environmental context

Canada has several policy packages/strategies to address climate change with the most recent being published in December of 2020. In response to the COVID-19 pandemic, the Canadian government published a "strengthened climate plan"²² which builds on the 2016 climate plan, the *Pan-Canadian Framework (PCF) on Clean Growth and Climate Change*²³. The 2016 PCF climate plan sets a target to reduce greenhouse gas (GHG) emissions by 30% below 2005 levels by 2030. The updated 2020 climate plan forecasts that Canada is on track to meet the -30% GHG emissions target by 2030 and is even projected to surpass that target. In the long-term, similar to the EU, Canada aims to reach net-zero emissions by 2050.

Despite matching its long-term emissions reduction target to that of the EU, the Canadian climate plans have yet to match the EU on a concrete circular economy strategy. As of the writing of this study, Canada has no national strategy for the circular economy transition, in fact, the 2020 climate plan sparsely mentions circularity. Mentions of the circular economy are limited to the context of plastic waste reduction and the World Circular Economy Forum, held in September 2021²⁴, which is highlighted as Canada's main step towards transitioning to a circular economy.

The government of Canada's zero plastic waste action plan²⁵ consists of activating complementary measures, specifically performance-based approaches, market instruments and voluntary initiatives. The performance-based approaches include better product regulation, standards and performance agreements, extended producer responsibility, and a ban on single-use plastics. To encourage reusability and the recycling rate of plastics the market instruments include incentives, taxes, deposit returns, public procurement and direct investment to increase recycling capacity. Finally, voluntary measures such as industry targets, certification programmes, corporate initiatives and awareness campaigns aim to reduce plastic waste and pollution.

²² Government of Canada. (2021). "A Healthy Environment and a Healthy Economy. [Link](#).

²³ Government of Canada. (2016). Pan-Canadian Framework on Clean Growth and Climate Change. [Link](#).

²⁴ The World Circular Economy Forum 2021. [Link](#).

²⁵ Canadian Council of Ministers of the Environment. (2018). Strategy on Zero Plastic Waste. [Link](#).

National circular economy policies, insofar as they exist, are limited to tackling plastic waste reduction and recycling. The *National Zero Waste Council*, established in 2013, is an initiative leading the transition to the circular economy in Canada by bringing together the public and private sectors as well as NGOs²⁶. Their efforts are focused on waste prevention in areas such as food waste, plastics, construction, and product design and packaging.

At the province level, there are roadmaps and strategies for achieving a Canadian circular economy with a primary focus on waste reduction. This is due to the distribution of responsibilities across Canada's governments, with the provinces and territories being responsible waste management, recycling and composting policies. For example, Ontario published a 'Strategy for a Waste-Free Ontario – Building the Circular Economy'²⁷ in 2017, setting out a 15-point strategy to transform Ontario's economy into a circular one and achieve a zero waste and zero GHG emissions from the waste sector.

Despite the lack of a clear national roadmap, that is not to say that Canada has not made any progress on concepts related to the circular economy and material efficiency, especially as Canada has made great strides to increase its overall energy efficiency since the 1990s. Energy efficiency makes up part of resource efficiency as a more efficient use of energy consumption decreases the demand for primary raw materials for energy production²⁸.

In 2017, an OECD report concluded that Canada had decoupled its strong economic growth from air pollution, energy consumption and GHG emissions. Yet, compared to the average, Canada remained a highly emissions- and energy-intensive OECD country and the report rules that additional efforts were required to accelerate decarbonisation efforts²⁹.

Canadian provinces have implemented their own policies regarding energy efficiency for the built environment, transportation, and industry, leading to an energy efficiency improvement of 31% in 2016 compared to 1990. Over the same period, energy use in Canada grew by 26% and without the improved energy efficiency, the growth rate of energy use would have equalled 56%³⁰.

²⁶ National Zero Waste Council – About Us (2020). [Link](#).

²⁷ Government of Ontario. (2017). Strategy for a Waste-Free Ontario – Building the Circular Economy. [Link](#).

²⁸ EnerKey – Energy efficiency contributes to circular economy (March 2021). [Link](#).

²⁹ OECD. (2017). OECD Environmental Performance Reviews – Canada. [Link](#)

³⁰ Government of Canada. (2016). Energy efficiency trends in Canada 1990 to 2016. [Link](#).

3.2 Challenges to the uptake of circular practices

Data and knowledge gaps

Section 3.1 indicates that, so far, Canada's circular economy approach has targeted recycling and energy efficiency approaches and initiatives which are measurable indicators of resource efficiency. Though both concepts are closely related to the circular economy, there is still a knowledge and information gap to fill to reach a comprehensive strategy – which targets various industries' material efficiencies – to achieve a Canadian circular economy.

This challenge was brought to the attention of the National Zero Waste Council which was advised to shift the dialogue and policies towards 'up-stream' waste prevention as opposed to approaches concentrated on downstream supply-chain interventions³¹. An understanding of which natural resource sectors possess a potential for circularity, paired with accurate data on where these natural resources can be found, can aid policymakers in their decision-making.

A recent policy report identifies a lack of comprehensive databases for information on waste streams and pollutants beyond GHG emissions³². The absence of a comprehensive overview of Canada's waste streams inhibits policymakers' abilities to correctly identify the costs and benefits related to a Canadian transition to a circular economy.

An example of an information gap at the value chain level is the mismatch of supply and demand of up-stream processor firms and down-stream manufacturers on the possibilities of circular technologies and production methods. The uptake of circular production methods requires a minimum demand to establish a viable market for secondary materials³³.

Logistical and technical obstacles

A general logistical obstacle identified in the circular economy is the retrieval of goods from consumers that have reached their end-of-life span but can be repaired or refurbished to continue their life. A solution to this obstacle would be to promote the use of circular services, such as a shared appliance renting or leasing in which the manufacturer is responsible for recovery and repair. However, these solutions are not yet mainstream and as such the logistical retrieval issue persists.

³¹ Phillips, M. (2016). Green Discussion Paper: Advancing the Concept of the Circular Economy in Canada. [Link](#).

³² Kellam, M., Talukder, S.K., Zammit-Maempel, M. & Zhang, S. (2020). Charting a course for a Canadian transition to a circular economy. McGill & Max Bell School of Public Policy. [Link](#).

³³ Ibid.

More specifically for Canada, the country's geography has been pointed out as a hindrance to progress to mainstreaming circularity. Considerable distances between natural resource extraction and manufacturing centres drive up transportation costs; adding the retrieval of goods into the mix is bound to drive up costs further. Canada's economic clusters are concentrated along its southern border, with the US being its primary trading partner, which explains the integration of both economies.

Instead, focusing efforts on goods remanufacturing could ultimately drive down transportation costs, as it reduces the need to continue extracting primary raw materials. Moreover, taking into account the Canada-US trade relationship, reverse logistics is another opportunity to cut down on transportation costs (i.e., not having trucks returning empty from a delivery).

Economic challenges

As with most policy changes, the shift to a circular economy brings with it changes to macro- and micro-economic supply and demand. On one hand, the mainstreaming of repairability and reusability alongside circular services such as ridesharing platforms (cars and bicycles), leasing/renting of appliances and tools, electronics refurbishment, and subscription models for children's clothing, may drive down the demand for newly-produced goods.

On the other hand, businesses gearing up to shift to circular production methods are faced with upfront investment costs, driving up their total costs in the short-to-medium term which will likely impact their position on a market with less sustainable competitors.

4. TRADE IN SUPPORT OF CIRCULAR ECONOMY

Recent analyses identified sectors with the greatest potential for circularity based on their economic importance in Canada^{34,35}. The list includes plastics, electronics, food, construction, textiles, and natural resources, including minerals and metal mining and biomass.

The OECD estimates that global materials use projected to more than double from 67 gigatons in 2011 to 167 gigatons in 2060³⁶. Non-metallic minerals, biomass, and metals' share of that growth equal 49%, 24% and 10%, respectively. This growth is largely driven by an expected increase in demand for construction materials in developing countries. At the same time, based on current day trends, materials intensity (materials use per unit of output) is projected to decrease by 2060, as recycling becomes more (cost) efficient compared to primary resources extraction.

In 2020, Canada's natural resources accounted for around 10% of Canada's Gross Domestic Product (GDP)³⁷. Taking this evolution into account together with the economic significance of Canada's natural resources, Canada stands to benefit from promoting sustainable production and circular economy practices. Currently, the extraction and production of natural or primary resources in Canada is mainly focused on forestry, mining/quarrying, oil and gas extraction and agricultural production.

Together with the economic importance of Canada's natural resources and their relevance to bilateral trade patterns with the EU, this case study selects the following three sectors to look into more detail; (i) mining sector, (ii) machinery and transport, and (iii) bioeconomy. Due to the CETA virtually reducing tariffs to zero for almost all sectors, with the exception of some agricultural goods, along with the absence of any sector-specific chapters, the agreement did not impact the choice of sectors.

4.1 Mining sector

The EU's CEAP announced the establishment of sustainability principles including improving product durability, reusability, reparability; increasing the recycled

³⁴ Patel, S.C., Donin, G. (2020). Priority industries for a circular economy in Canada. Clean economy working paper series. Smart Prosperity Institute. [Link](#).

³⁵ Council of Canadian Academies, 2021. Turning Point, Ottawa (ON). The Expert Panel on the Circular Economy in Canada, Council of Canadian Academies. [Link](#).

³⁶ OECD. (2019). Global Material Resources Outlook to 2060: Economic Drivers and Environmental Consequences. [Link](#).

³⁷ Statistics Canada. (2021). Gross domestic product (GDP) at basic prices, by industry, annual average (x 1,000,000). [Link](#).

content in products; and incentivising product-as-a-service models. These sustainability principles in the CEAP are expected to lead to a decrease in European demand for certain goods as a result of improvements to product durability and new ownership models for products.

Similarly, the demand for primary raw materials is bound to be impacted by this policy package, due to increased programmes for precious metals recovery and reuse as well as the substitution of primary raw materials by secondary materials, or the smelting of both. At the same time, the need and increasing demand for clean technologies to reach climate changes goals require mined materials for their production and use³⁸. As expressed in the previous sections, this change in demand is relevant to the Canadian mining sector which makes up a significant share of Canadian exports. It is therefore in Canada's interest to ensure the continued implementation of sustainable mining practices and the development of circular economy policies in the mining sector, and its related supply chains.

The environmental impacts of a minimally regulated mining sector's activities – most notably the creation of mining sites – are significant and, in most cases, long-lasting. Open mining pits and piles of debris destroy or displace existing landscapes and the endemic fauna and flora³⁹. While restoration efforts after mining activities have ceased attempt to mitigate these effects, there is no guarantee that the lost species will return or recover⁴⁰.

Mining activities also contribute to air pollution as unrefined materials such as lead, arsenic, cadmium among other elements are exposed and can become airborne by wind erosion and transport equipment. Moreover, water and local soil quality⁴¹ can be severely deteriorated by pollutants originating from, for example, processing plants, tailing ponds and underground mining operations, with consequent negative effects on human life and biodiversity.

In an attempt to mitigate such environmental impacts, the Canadian mining sector has become highly regulated. For example, the provinces require mine operators to submit (post-)closure plans before they can begin mining operations⁴². This obligates mine operators to think ahead on how they plan to

³⁸ Hund, K., La Porta, D., Fabregas, T., Laing, T. & Drexhage, J. (2020). Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition. World Bank Group. [Link](#).

³⁹ Zhang, L., Wang, J., Bai, Z. & Lv, C. (2015). Effects of vegetation on runoff and soil erosion on reclaimed land in an opencast coal-mine dump in a loess area. *CATENA*. Vol. 128. [Link](#).

⁴⁰ Sonter, L., Ali, S., Watson, J. (2018). Mining and biodiversity: key issues and research needs in conservation science. Sonter, L. J., Ali, S. H., & Watson, J. (2018). Mining and biodiversity: key issues and research needs in conservation science. *Proceedings. Biological sciences*, 285(1892), 20181926. [Link](#).

⁴¹ USGS. Mining and Water Quality. (2018). [Link](#).

⁴² Government of Québec – Ministry of Energy and Natural Resources. (2017). Guidelines for Preparing Mine Closure Plans in Québec. [Link](#).

close and manage the closed mining grounds to ensure minimal negative impacts for the surrounding environment.

Sustainable mining strategies

In order to account for these negative environmental impacts, sustainable mining action plans must be an integral part of a region's mining operations. At various levels, Canada has set up various initiatives and plans to address these environmental issues and set global standards for sustainable mining.

In 2016, the Canadian government published a "Green Mining Initiative"⁴³ which sets out a 5-year strategy to improve the national mining sector's energy efficiency, productivity, and waste and water management. This initiative was followed up by the "Canadian Minerals and Metals Plan",⁴⁴ which considers circular economy principles for mining waste and seeks to reduce the mining sector's environmental footprint.

In addition to these plans, all members of the Mining Association of Canada (MAC) are required to participate in the "Towards Sustainable Mining" initiative⁴⁵. This initiative ensures members of the MAC practise the highest environmental standards. The TSM initiative has also seen its adoption outside of Canada by mining associations active in Colombia, Brazil, Argentina, Spain, Norway, Finland, Botswana, the Philippines and Australia.

Circularity within the mining sector presents a great cost-saving opportunity for industries such as automotive, aviation, and construction. The use of some recycled metals is estimated to be up to 20 times more energy-efficient than their primary raw material counterparts⁴⁶. It is estimated that Canada recycles 12.5 million metric tonnes of metal "scrap and waste" per year domestically, and this includes imported scrap.

In 2019, in total, Canada imported 5.6 million metric tonnes while exporting 5.1 million metric tonnes of scrap metals. The US is Canada's largest scrap metal trading partner providing 97% of CDN imports and receiving 68% of CDN exports. In 2019 Canada exported 26.4k metric tonnes of metal scrap to the EU while receiving 28.2k metric tonnes: the total value of scrap metal trade (imports + exports) between Canada and the EU was 1.3 billion Canadian dollars⁴⁷.

Furthermore, the issue of abandoned mines presents other environmental challenges as owners of mining sites have disappeared or are unable (due to

⁴³ Natural Resources Canada. Canmet Mining – Green Mining Initiative Research Plan 2016-2021. [Link](#)

⁴⁴ Natural Resources Canada. The Canadian Minerals and Metals Plan. (2019). [Link](#).

⁴⁵ The Mining Association of Canada. Towards Sustainable Mining. (2022). [Link](#).

⁴⁶ Natural Resources Canada. The Canadian Minerals and Metals Plan. (2019). [Link](#).

⁴⁷ Natural Resources Canada, Trade Retrieval and Aggregation System 2.0

bankruptcy) or unwilling to remediate their sites. The National Orphaned / Abandoned Mines Initiative (NOAMI) was launched in 2002 to address this issue to provide guidelines and improve the management of mines. As of 2020, the NOAMI has undertaken steps to expand its mandate to consider additional climate-related risks⁴⁸.

There are several other initiatives the national or local governments could consider to bolster the circularity of the mining sector.

The integration of **remining initiatives** with current initiatives for orphaned and abandoned mines could deliver additional benefits for the operators and the environment. The reprocessing of mine waste and/or tailings can extract value from the residuals left behind⁴⁹. Thus, tying the process of abandoned mine decontamination and environmental restoration efforts to re-mining efforts provides the operator with an economic incentive to revisit these tailings. However, reopening older, covered tailings for re-mining is considered difficult (technically, economically, politically), yet, there are initiatives that confirm their potential value⁵⁰.

Another pathway towards a more circular mining sector is through the uptake of more **environmentally friendly extraction processes**. This would entail a more efficient use of extraction technologies, for example, by improving water usage (e.g., minimising freshwater usage, recycling or reuse of water), employing fewer chemicals detrimental to the environment, minimising waste creation, and the use of energy-efficient extraction technologies⁵¹.

Furthermore, and as is the case in Canada, the opening of new mines extraction must be preceded by the design of a comprehensive plan, taking into account the potential environmental impacts of the extraction process from the scoping phase to the (post-)closure phase. The design of a thought-out plan could be further supported by environmental experts in the field as well through the involvement of relevant government actors.

Moreover, there is potential to encourage the uptake of the **sharing economy**, such as extraction equipment sharing / renting among operators in a region. This

⁴⁸ Natural Resources Canada. The Canadian Minerals and Metals Plan – Action Plan 2020: Introducing the Pan-Canadian Initiatives. (2020). [Link](#).

⁴⁹ Kellam, M., Talukder, S.K., Zammit-Maempel, M. & Zhang, S. (2020). Charting a course for a Canadian transition to a circular economy. McGill & Max Bell School of Public Policy. [Link](#).

⁵⁰ Natural Resources Canada. (2019). Mining value from waste: a potential game changer. [Link](#).

⁵¹ Donin, G. (2020). Circular Economy Global Sector Best Practices Series – Minerals and Metals. Smart Prosperity Institute. [Link](#).

could be coordinated by mining associations, which form an established network of operators⁵².

Lastly, the demand for less common minerals and metals may be influenced by the implementation of Extended Producer Responsibility (EPR) programs and the promotion of circular product design. These schemes would allow for the safe recuperation of products containing these minerals and facilitate the recycling and reuse of the minerals, extending their lifespan. Canada's EPR scheme aims to shift end-of-life management costs away from taxpayers and towards producers and consumers. Producers could be incentivised to rethink their product and packaging design to reduce generated waste⁵³. However, the scheme does not require producers to recover rare metals from end-of-life products.

4.2 Automotive industry

The automotive sector is the second largest manufacturing industry in Canada⁵⁴ and requires a considerable number of raw materials, such as steel, aluminium, copper and other materials such as plastics and glass.

While automobile sector supply chains and trade were severely impacted by the COVID-19 pandemic⁵⁵, global registrations of electric vehicles increased by 41% in 2020, with early 2021 numbers appearing equally positive⁵⁶. The rising popularity of electric vehicles (EVs) impacts the demand for minerals for the production of automobile batteries and other materials. Furthermore, another expected shift in automobile assembly is the role of plastics, which is projected to make up 20% of the average vehicle mass by 2025.

The environmental impacts of the automotive industry materialise at various stages in the product lifecycle. The most familiar environmental impact of this industry is that of the product in-use phase, where GHGs are emitted from driving. However, environmental impacts are as prevalent in the production phase – with the sourcing and processing of materials such as steel and aluminium (mining and processing of ore) – and at the end-of-life phase (disposal and parts recuperation). For example, the iron and steel industry accounts for 11% of global CO₂ emissions⁵⁷ and although many developed countries have taken steps to

⁵² Donin, G. (2020). Circular Economy Global Sector Best Practices Series – Minerals and Metals. Smart Prosperity Institute. [Link](#).

⁵³ Canadian Council of Ministers of the Environment. (2009). Canada-wide Action Plan for Extended Producer Responsibility. [Link](#).

⁵⁴ Yates, C. & Holmes, J. (2019). The Future of the Canadian Auto Industry. Canadian Centre for Policy Alternatives. [Link](#).

⁵⁵ Kettunen, M. and Blot, E. (2021) *Trade in support of circular economy, sustainable development, and green recovery*. Think2030 policy paper. Institute for European Environmental Policy (IEEP), Brussels/London. [Link](#).

⁵⁶ International Energy Agency. (2021). Global EV Outlook 2021. [Link](#).

⁵⁷ Swalec, C. (2021). These 553 steel plants are responsible for 9% of global CO₂ emissions. Carbon Brief. [Link](#).

reduce the carbon intensity of this industry (carbon pricing, emissions cap schemes), still the steel sector still remains highly reliant on metallurgical coal⁵⁸.

Circular solutions to the automotive industry

Keeping on the example of the steel industry, which is a key material in the production of automobiles, there are several circular opportunities to ensure the lifecycle of a steel component is maximised. **Recycling steel scraps** for secondary raw materials significantly cuts down on emissions as opposed to producing primary raw materials. The market for recycled metals is well developed as clear price signals for certain minerals incentivises their recovery and reuse⁵⁹.

However, in general, there is a lack of **coherence on the global markets** for secondary raw materials, and more broadly for circular goods, on standards for reusability, reparability, and recyclability of goods. An essential step to supporting the global uptake of the circular economy is to champion the harmonisation of international rules applied to end-of-life waste⁶⁰.

Product and production method **standards** play a key role in supporting the circular economy transition. Ecodesign standards targeting the durability and reparability of goods have their place in the automobile industry. For example, the process of repairing and remanufacturing of car parts could be optimised by considering modular manufacturing at the design stage. Optimising the design of cars to increase the capacity for remanufacturing and the recycling of car parts contributes to a reduction of demand for primary raw materials. For instance, high-value car parts such as batteries and parts made of rare materials could be recuperated through recycling methods (such as take-back programmes) aimed at extending the use of these resources.

Automobile manufacturers could face increased accountability for the servicing of their vehicles through the implementation of extended warranties, EPR schemes or the 'right to repair'. This incentivises the use of more durable materials, as well as better design for more efficient repair and remanufacturing⁶¹. The 'right to repair' also empowers consumers to not be bound to certain manufacturers for their vehicle repairs.

Finally, **circular services** in the automobile sector incentivise sustainable consumption. As car- and ride-sharing platforms grow in popularity in metropolitan areas, trends in ownership models are projected to lead to a

⁵⁸ Vass, L., Levi, P., Gouy, A. & Mandová, H. (2021). Iron and Steel tracking report. IEA. [Link](#).

⁵⁹ ISRI. (2021). ISRI SPECS – Scrap Specifications Circular. [Link](#).

⁶⁰ Kettunen, M., Gionfra, S. & Monteville, M. (2019). EU Circular Economy and Trade: Improving policy coherence for sustainable development. IEEP Brussels / London. [Link](#).

⁶¹ Christofferson, C., Lkhoyaali, G. & Sutt-Wiebe, N. (2021). Background materials for circular economy sectoral roadmaps – Automotive Manufacturing. [Link](#).

decrease in automobile sales. Governments could further support the roll-out of EVs, by electrifying their public transportation networks.

4.3 Bioeconomy

The final value chain analysed in this case study is the Canadian bioeconomy. The bioeconomy is much broader than agricultural production for crops, as it includes all sustainable production of renewable resources, including forestry, fisheries, and aquaculture⁶². Going further the term bioeconomy also encompasses the industries using these biological resources such as parts of the biotechnology, chemicals and energy industries, food processing, textiles manufacturing⁶³.

In 2015, Canada was the second-largest exporter of forest-related products and its forests total 9% of the world's forest resources. In the context of the bioeconomy, Canada holds the most biomass per capita in the world and accounts for 6.5% of the world's potential bioenergy potential⁶⁴. In economic terms, Canadian bioproduct sales totalled 4.3 billion CAD, a third of which was derived from exported goods. The largest category of bioproduct sales was by far biofuels (approx. 2.7 billion CAD) of which forestry and agricultural products are the predominant source of biomass inputs⁶⁵.

Considering the imported value of oilseeds from Canada to the EU and the relevancy of these crops for the bioeconomy it was a clear choice to analyse this sector in the context of the circular economy.

A circular bioeconomy

Canada has a framework in place for the management of its forest bioeconomy, which aims to position Canada's forest bioeconomy as a leader in renewable and innovative solutions. A few examples that demonstrate this include keeping resources in use for as long as possible by appropriating harvest residues and waste wood as an energy resource and contributing to GHG emissions reduction by protecting carbon sinks through land-use and conservation measures⁶⁶.

Canadian standards for **sustainable forest management practices** are among the highest worldwide⁶⁷. In addition, around two-thirds of Canadian forests are considered 'managed' (i.e., presence of industrial activities and fire protection).

⁶² European Commission – Research & Innovation. What is the Bioeconomy. [Link](#).

⁶³ Christofferson, C., Lkhoyaali, G., Sutt-Wiebe, N. (2021). Background materials for circular economy sectoral roadmaps – Bioeconomy. Smart Prosperity Institute. [Link](#).

⁶⁴ Canadian Council of Forest Ministers. (2017). A Forest Bioeconomy Framework for Canada. [Link](#).

⁶⁵ Rancourt, Y., Neumeyer, C. & Zou, N. (2015). Results of the Bioproducts Production and Development Survey 2015. Statistics Canada. [Link](#).

⁶⁶ Canadian Council of Forest Ministers. (2017). A Forest Bioeconomy Framework for Canada. [Link](#).

⁶⁷ Ibid.

Sustainable forest management practices not only cover various aspects of land management such as pollution control, wildlife management, and water use, they are also effective tools to deliver SDGs with area-based protection and conservation playing a large role in delivering for sustainable development⁶⁸.

Moreover, on bioproducts, the forest bioeconomy framework recognises that an **update of standards and certification schemes** is required in order for bioproducts to become viable competitors to the current petroleum-based products. Standards and certifications for bioproducts must be designed in a manner that enables their trade and accelerates the growth of the industry. New standards could be co-created with industry groups to ensure that residuals are utilised in the most efficient manner possible.

As is the case with any new products, the uptake of newly developed bioproducts is dependent on the existence of market opportunities. The Canadian federal government has developed a program for **Expanding Market Opportunities** for its forestry sector. However, the program's 2019 evaluation concluded that it is not as effective in supporting the needs of the secondary manufacturing and emerging bioproducts sector⁶⁹. Importantly, the government plans to address this gap by March 2023.

Another challenge that the market for bioproducts faces is that there is not yet an establish line of communication between the forestry and agricultural bioeconomy sectors. The exchange of information is hindered by industry silos, which is intensified by the division of responsibilities between provinces and territories.

Bioindustrial Innovation Canada puts forward several recommendations for improving sustainable forestry and agricultural practices for biomass management in its Bioeconomy Strategy. A key recommendation is the **development of a resources database** to increase knowledge of the quality, quantity and location of biomass across Canada⁷⁰. This is a challenge addressed in Section 3 of this case study; policymakers do not have access to relevant information to inform decisions on circular economy practices.

The Bioeconomy Strategy also recommends **additional funding to optimise efficient processing** from R&D. This could include the promotion of sustainable

⁶⁸ Kettunen, M., Dudley, N., Gorricho, J., Hickey, V., Krueger, L., MacKinnon, K., Oglethorpe, J., Paxton, M., Robinson, J.G., and Sekhran, N. 2021. Building on Nature: Area-based conservation as a key tool for delivering SDGs. IEEP, IUCN WCPA, The Nature Conservancy, The World Bank, UNDP, Wildlife Conservation Society and WWF. [Link](#).

⁶⁹ Natural Resources Canada. (2019). Evaluation of the Expanding Market Opportunities (EMO) program. [Link](#).

⁷⁰ Bioindustrial Innovation Canada. (2019). Canada's Bioeconomy Strategy – Leveraging our Strengths for a Sustainable Future. [Link](#).

harvesting methods and technologies, and the further implementation of integrated pest management and nature-based solutions. Sustainable production and harvesting practices reduce negative impacts on the surrounding environment – including water use, fertiliser run-off, land use, and impacts on biodiversity and ecosystems – and ensure the responsible sourcing for renewable biomass resources.

On biofuels production, the Canadian government provides guiding principles to operators, some of which are mandatory and others which are voluntary. Among the mandatory requirements, pertaining to environmental protection, the biofuel industry is required to respect environmentally sensitive lands, ecosystems, and the quality of natural resources such as soil, air, water and biodiversity. The guidance lists more voluntary principles such as the biofuel industry contributing to climate change mitigation; social and economic sustainable development; ensuring food security and sustainable biomass production; and the continuous improvement of biofuels sustainability⁷¹.

5. CONCLUSIONS AND RECOMMENDATIONS

This case study concludes that there are several avenues for the EU and Canada to collaborate to accelerate the uptake of the circular economy, both bilaterally and multilaterally.

Both Canada and the EU have implemented policies to encourage circular practices, albeit some more far-reaching than others. The EU Green Deal deploys various initiatives for sustainable principles for the European economy (e.g., agriculture, industry, mobility, investment, ...) in addition to the comprehensive CEAP which targets select sectors and product groups. This package of policies designed at the European level allows for a comprehensive approach to guide the European economy towards the green transition.

Canada's decentralised approach to policymaking is clear from the assessment of its circular economy-relevant environmental policy strategies. The roles and responsibilities granted to the provinces have allowed them to design and implement their own circular economy strategies tailored to their needs. These efforts have predominantly emphasised downstream supply chain and end-of-life management, such as waste reduction, tackling plastics pollution and food waste. At the same time, the division of responsibilities between federal, provincial and local levels, paired with the cross-cutting nature of circular economy principles, impedes accelerated progress on the implementation of comprehensive circular economy strategies.

⁷¹ Natural Resources Canada. (2016). Guiding Principles for Sustainable Biofuels in Canada. [Link](#).

It is clear that the tide has shifted, and sustainable production and consumption is on Canada's radar. However, the absence of a national circular economy strategy – one that considers circularity throughout the entire supply chain – creates a window of opportunity for Canada to develop a strategy and communicate to its trade partners its vision on a Canadian circular economy.

The reviewed sectors in Section 4 reveal that circularity principles are present at an industry and business level, yet industries signal the need for updated or new standards and certification schemes for circularity to enable the uptake of sustainably produced products. Ideally, the revision of standards for products and production methods should be dealt with at a global level to avoid fragmentation of standards.

A best-case scenario for standard development on circularity would be for Canada to take steps towards regulatory cooperation and standard development with its trade partners and at the WTO. Considering the EU-Canada trade relationship and the EU's approach to circularity, cooperation between these two trade partners could be a viable avenue to ensure trade flows are not hindered by the segregated development of standards for circularity.

Yet, the current bilateral trade framework, CETA, does not refer to the circular economy principles and it is unlikely that the content of the agreement will change in the near future to support them. The agreement does establish joint dialogue meetings on forestry and critical materials, which are both relevant for the sectors discussed in Section 4. These established bilateral dialogues are significantly relevant for building a joint understanding of the circular economy's impacts on trade flows. In addition, the dialogues serve as a platform for knowledge and data sharing as the potential for circularity in these sectors

5.1 Recommendations

Based on this assessment and interviews with relevant stakeholders, the following recommendations have been developed with aims to maximise the benefits of EU-Canada relations at the bilateral and multilateral levels.

Bilateral

The CETA provides different avenues for bilateral cooperation in the areas, in particular via dedicated committees or meetings that cover exchanges on relevant measures that may impact trade in natural resources (forest products, marine resources, critical materials), in addition to trade and sustainable development, and regulatory cooperation.

Both Parties must therefore continue to support bilateral dialogues set up under the CETA framework, including the “Bilateral Dialogue and Cooperation” meetings on forest product and critical materials, as well as the Canadian and European DAG meetings (which monitor the implementation of the TSD Chapter commitments). This could involve the following measures:

- Ensure the relevant dialogue organisers are provided sufficient resources to begin to address the shift to circularity. These resources could be used by the dialogue members to commission research reports and support the organisation of more dialogue sessions on the trade impacts of circular economy. As natural resources make up not only a significant share of Canada’s economy but also possess strong potential for circularity the “Bilateral Dialogue and Cooperation” meetings are key in this space.
- Bring together relevant Canadian and European stakeholders, including government actors, industry representatives, as well as internal (e.g., DG ENV and DG CLIMA) and external experts to allow for a detailed discussion on the trade implications of the development and implementation of new domestic legislation, such as the EU’s CEAP.
- Use these meetings to exchange knowledge regarding circular economy legislation, data collection methods, monitoring frameworks and begin to close data gaps on the flow of material and energy resources. This could aid Canada in the development of a more comprehensive national circular economy strategy, while both partners can begin to harmonise on data collection methods and monitoring practices.

Multilateral

In the CETA, both Parties commit to cooperation on trade and sustainable development issues at the multilateral level such as at the WTO, United Nations General Assembly, the United Nations Environment Assembly, as well as at MEA meetings. Going further, Canada and the EU have made efforts to collaborate on circular economy by being members of the Global Alliance on Circular Economy and Resource Efficiency (GACERE), of which the EU is a founding member⁷². These

⁷² European Commission. (2021). Global Alliance on Circular Economy and Resource Efficiency (GACERE). [Link](#).

efforts can lead to concrete outcomes if both Parties share and push for a common objective at these meetings, meaning, Canada and the EU should:

- Champion discussions at the WTO in cooperation with other like-minded trade partners on circular economy and environmental sustainability through trade. The WTO has launched several Trade and Environmental Sustainability Structured Discussions⁷³, of which Canada and Costa Rica are the co-coordinators. Such platforms present an opportunity to create a commonly agreed-upon foundation for trade and trade policy to support environmental sustainability.
- Take forward dialogues in the GACERE and at other multilateral fora focus on the development of standards for circularity and mutual recognition for trade in secondary materials.
- Support public-private collaboration throughout the development of circular economy frameworks and the process of standard development for circularity. The private sector is a valuable resource in this space that possesses a wealth of expertise and adaptability with a better eye for process efficiencies.
- Back initiatives such as the World Circular Economy Forum (the 2021 edition was hosted in Toronto), which form an indispensable platform for evidence-based public-private discussion on circularity and its global implications on trade and supply chains.

⁷³ Geneva Trade Platform. (2022). Trade and Environmental Sustainability Structured Discussions (TESSD). [Link](#).



www.ieep.eu

