

Advancing a Circular Economy Approach for Canada Scoping Study:

Jurisdictional Case Studies

(FINAL March 2023)

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Introduction

The jurisdictional case studies presented in this Annex/Appendix examine a range of circular economy approaches selected for their diverse governance models, which include various combinations of frameworks, roadmaps, strategies and/or action plans. Six case studies were reviewed for this report, five of which are international examples of circular economy approaches and one domestic, including:

1. The European Union
2. Finland
3. The Netherlands
4. Scotland
5. Germany
6. Quebec (Canada)

Within each case study, four important considerations were examined:

- **Overview** - summarizes the current state and governance model of each jurisdiction
- **Rationale** - describes the impetus for change, the motivations, and key narrative points toward a circular economy across jurisdictions.
- **Circular Economy Approaches and Development** - identifies the proponents and actors driving change, the timeline of the transition, key stakeholders, and the main focus areas for priority actions
- **Implementation** - Explores the governance, monitoring and evaluation systems put in place, highlighting key measures of interest.

Considerations for Canada - Highlights best practices, unique tools, approaches, and/or methods in some case study, where relevant. In addition, the research team profiled two Canadian strategic policy frameworks focused on advancing the climate and innovation agendas in Canada, respectively. These are (1) the [Pan-Canadian Framework on Clean Growth and Climate Change](#) and (2) [Building a Nation of Innovators](#). While these strategies are not explicitly focused on circular economy, they can provide insights on cross-sectoral and cross-jurisdictional collaboration for advancing a made-in-Canada circular economy approach.

1. European Union

Governance Model: Collaborative, inter-jurisdictional framework

Overview

The EU has established **overarching policy frameworks and action plans** on waste and resource management to support the transition to a circular economy, representing some of the most ambitious legislative efforts globally.

The central and overarching policy initiative in Europe is the Circular Economy Package and corresponding Action Plan released in 2015. The [Closing the Loop – an EU Action Plan for the Circular Economy](#) builds on circular activities of the 1990s and 2000’s in the EU and sets out the objectives of a CE and implementation measures intended to accelerate Europe’s transition to a CE while simultaneously strengthening competitiveness and creating economic growth and jobs. It explicitly requires close cooperation between Member States, regions and local authorities, companies, research institutions, citizens and other stakeholders in CE.

In 2020 the European Commission published a [new circular economy action plan \(CEAP\)](#) as part of the Communication on a European Green Deal from December 2019. The CEAP announced initiatives along the entire life cycle of products. It targets how products are designed, promotes circular economy processes, encourages sustainable consumption, and aims to ensure that waste is prevented and the resources used are kept in the EU economy for as long as possible. It also introduced legislative and non-legislative measures targeting areas where action at the EU level brings real added value.

Rationale

The concept of a circular economy has gained traction in European policymaking as a positive, **solutions-based perspective for achieving economic development within increasing environmental constraints**. This is reflected in the European Commission’s 7th Environment Action Programme (EAP) to 2020, which identifies the “need for a framework that gives appropriate signals to producers and consumers to promote resource efficiency and the circular economy”.

The EU’s Circular Economy Action Plan is considered a key building block of the European Green Deal, Europe’s new agenda for sustainable growth. It aims to reduce pressure on natural resources and will create sustainable growth and jobs. It is also considered to be fundamental [to achieve the EU’s 2050 climate neutrality target](#) and to halt biodiversity loss.

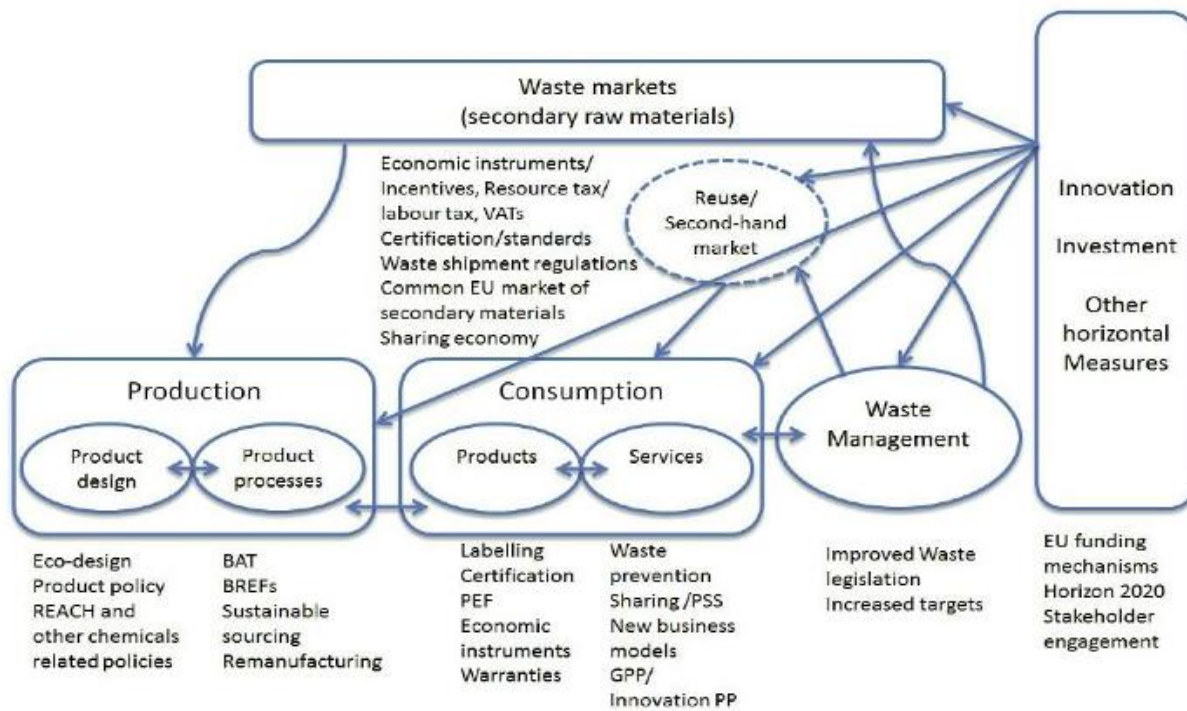


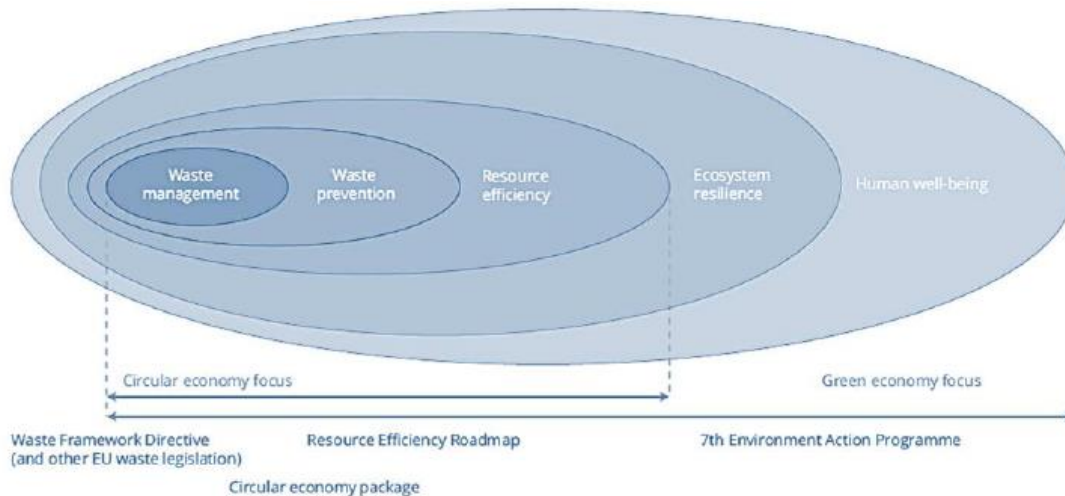
Figure 1.1. EU Circular Economy Action Plan Policy Landscape (European Commission - CEAP)

Circular Economy Approaches and Development

The roots of the EU’s circular economy journey begin in its push for improved waste management in the eighties and nineties. In the early nineties, the EU introduced the ‘polluter pays principle’ into policy-making through Extended Producer Responsibility (EPR) models to increase accountability. That same decade it also introduced mandatory waste sorting and landfilling regulations to increase recycling.

In the 2000’s the EU further addressed critical gaps in the waste management sector with the End-of-Life-Vehicles Directive and the E-Waste Directive. The latter established in 2008 has played an instrumental role in harmonizing waste and recyclables management in the EU. It prioritized the prevention of waste generation and required EU Member States to adopt waste prevention programmes by December 2013. As a result, many EU countries included measures to foster innovative business models, repair, reuse, and eco-design in their programs.

From 2010, a public and political debate on the circular economy started to grow in the EU owing to a big push from civil society organizations like the Ellen MacArthur Foundation. This prompted two consultation processes within EU institutions by the EU Environment Commissioner in 2010. The first saw participation of over 1500 individuals and institutions including EU Directorates General, economic players, unions and other interest groups, revealing a large interest in the circular economy from across the EU. The second consultation, coming in the following years, eventually resulted in the creation of [Closing the Loop – an EU Action Plan for the Circular Economy](#) published in 2015. This plan was supported by industry and EU Member States and firmly planted the circular economy as a political agenda in the EU.



Source: European Environmental Agency

Figure 1.2. Waste, resource efficiency, circular economy, and green economy policy focus in Europe

The ‘Closing the Loop’ Action Plan is part of a larger EU framework that encompasses the EU’s 7th Environment Action Programme from 2013 to 2020, Resource Efficiency Roadmap, and Waste Framework creating one of the most comprehensive approaches to the circular economy globally. See Figure 1.2.

Over time, various legislative and non-legislative measures have supported implementation of the Closing the Loop Action Plan, covering more than 50 initiatives aimed at leading the EU towards a circular economy. The Action Plan also served as the basis for the EuroStat Monitoring Framework for the Circular Economy launched in 2018.

In 2020, the EU adopted a [new circular economy action plan \(CEAP\)](#). The CEAP is one of the fundamental pillars of the European Green Deal, the EU’s agenda for sustainable growth. The CEAP sets forth initiatives throughout the entire life cycle of products. It focuses on the design of products, embeds circular economy processes, enables sustainable consumer behaviour, and limits the amount of waste in the EU.

Focus Areas & Targets

The EU’s 2015 Circular Economy Action Plan included five priority material / waste streams (i.e., plastic waste, food waste, critical raw materials, construction and demolition waste, and biomass and bio-based products). It mapped out 54 actions with a focus on the following:

1. **Production** – Product design and product processes – i.e., Best Available Techniques (BATs), BAT reference documents (BREFs)
2. **Consumption** – Green public procurement and promotion of reuse, extended guarantees, durability of products, and consumer information
3. **Waste management** – Revised targets, better implementation of waste law (EU directives), and EU funding through waste management
4. **Waste-to-Resources** – Standards for boosting the market for secondary raw materials
5. **Innovation** – Horizon 2020 and regulatory hot spots for innovators

By 2019, all 54 actions were adopted or implemented. Recognizing that most EU-level actions to date had been supply-side measures, the updated [Circular Economy Action Plan in 2020](#) introduced more demand-side measures. The four core themes of the CEAP 2020 are:

- **Make sustainable products the norm in the EU:** including, for example, the restriction of single-use products and ensuring that products on the EU market are designed to last longer, are easier to reuse, repair, and recycle, and incorporate recycled material as much as possible
- **Empower consumers:** through access to reliable information about products at the point of sale, including on their life span
- **Focus on sectors that use the most resources and have the potential for high circularity:** including electronics and information and communications technology (ICT), batteries and vehicles, packaging, plastics, textiles, construction and buildings, and food; and
- **Ensure less waste:** by transforming it into high-quality secondary resources and implementing actions to minimize EU waste exports and tackle illegal shipments.

Stakeholder Engagement and Involvement

The EU’s Circular Economy Action Plan stresses that businesses and consumers are the key pillars in the process to moving towards a more circular economy. Local, regional, and national governments and authorities are expected to act as catalysts in this transition, but the EU also has a fundamental role to play in supporting it, by ensuring that the right regulatory framework is in place for the development of the circular economy in the single market.

Implementation

In 2018, the EU adopted a monitoring framework to examine progress on the actions planned. The monitoring framework consists of ten indicators in four areas (see Figure 1.3): (1) production and consumption, (2) waste management, (3) secondary raw materials and (4) competitiveness and innovation. This broadly follows the logic and structure of the Circular Economy Action Plan.

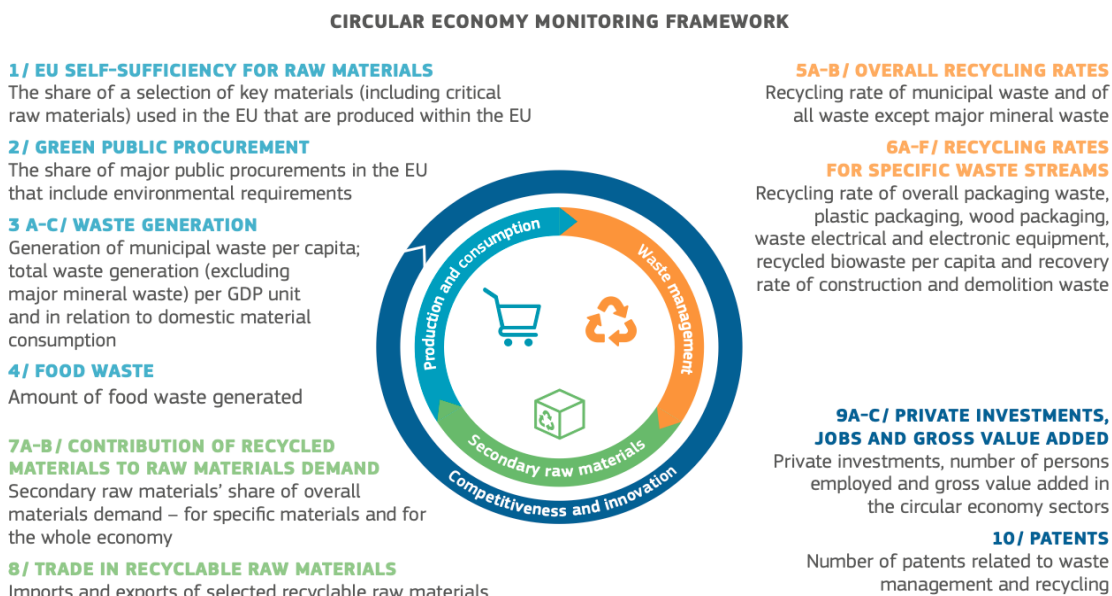


Figure 1.3: Circular Economy Monitoring Framework.

The framework is used to track progress and manage knowledge on the circular economy in the European Union, bringing together data from numerous regions to show where progress is maturing and where more work is needed. The 2020 CEAP announced the intention to update the framework to meet the objectives of both the EU Circular Economy Action Plan and the EU Green Deal.

The 2020 CEAP ensured the timely implementation of a Single Use Plastic Products directive and fishing gear in an effort to address marine plastic pollution, whilst continuing to safeguard the single market. This included:

- The harmonized understanding and definition of products included in the directive.
- Labelling of products (e.g. beverage cups, wet wipes)
- Developing and implementing the first of its kind rules for measuring recycled content in these products

Sources

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https://environment.ec.europa.eu/strategy/circular-economy-action-plan_en
- European Commission. Circular Economy Action Plan 2015.
https://environment.ec.europa.eu/topics/circular-economy/first-circular-economy-action-plan_en

2. Finland

Governance Model: Public-private sector based transition agenda (third-party led)

Overview

As the **first country** in the world to develop a national circular economy roadmap, Finland continues to lead and accelerate the global transition to a circular economy through holistic and strategic program development. The **collaborative, multi-stakeholder roadmap** process led by Sitra, the Finnish Innovation Fund, was later complemented by a Government Resolution and programming.

Since 2015, Finland has developed two robust circular economy roadmaps and several practical resources to support other jurisdictions seeking to conduct similar work. Finland's initial circular economy roadmap, [Leading the Cycle: Finnish Road Map to a Circular Economy 2016-2025](#), was published in 2016. **The objective of this road map was to effect systemic change and provide broad visibility** to the circular economy model. Finland's roadmap update, [The Critical Move: Finland's Road Map to the Circular Economy 2.0](#), was released in 2019. The objective of the second publication was to **raise ambition and accelerate change** within the actions previously outlined in the first road map and 30 new actions identified in the interim.

In 2021, the Finnish government adopted [The Resolution on the Strategic Programme for a Circular Economy \("the resolution"\)](#). The resolution sets out the key measures by which ministries will promote a circular economy in 2021–2024. The aim is to **transform the economy into one that is based on the principles of circular economy by 2035**. This is also a step towards achieving the Government's carbon neutrality target by 2035. This resolution was adopted alongside the work of Sitra and in consultation with Sitra and other leading CE institutions and relevant ministries in Finland.

One of the most powerful interventions in the Finnish circular economy approach has been incorporating circular economy into the curriculum at all levels of the Finnish education sector. This has promoted a broad understanding of the circular model, the emergence of new skills, and associated social progress.

Rationale

Finland's motivation to become circular is rooted in boosting economic competitiveness and creating new jobs and sustainable growth. Its roadmap outlines the following high-level **economic, social and environmental targets**:

- **Economy:** increase competitiveness; create an export advantage; reform funding models; create new growth and business
- **Environment:** improve resource efficiency; move towards a carbon-neutral and waste -free society; improve ecological sustainability; reduce emissions and the pollution load
- **Society:** increase public-private partnerships; create a bold and enabling trial-oriented approach and investment in education; promote the transfer to a service and sharing economy; renew domestic market demand; encourage new consumption models.

Box 1: How to Create a National Circular Economy Road Map

Sitra has developed [How to Create a National Circular Economy Road Map](#), which explores the **benefits of creating a road map, key lessons, and a general guide** other jurisdictions may consider when building their own strategies. The resource describes the key processes of a circular economy road map as follows:

- Groundwork and preconditions - Develop a project plan (steps, roles, timelines, preconditions, and resources)
- Stakeholders and participation - Understand and identify key stakeholders and seek commitments to the process.
- The situational picture – Deepen understanding on the current state of the circular economy in the country.
- Vision and goals - Create an inspiring vision for the road map as well as set specific and measurable goals.
- Focus areas - Define focus areas (and indicators) based on the vision and strategic goals.
- Planning the actions - A circular economy road map is a combination of strategy and tangible action plan.
- Compile and publish - Communicate to inspire others to start their own actions to promote the circular economy.
- Execution and implementation - Define the management model of the road map and ensure stakeholder commitment to guarantee strong implementation. Remember to communicate.
- Evaluation and revision – Evaluate ongoing projects, explore supplementary actions and decide on updates; focus on securing maximum impact.

Circular Economy Approaches and Development

Finland's first national circular economy roadmap was spearheaded by **Sitra**, the Finnish Innovation Fund. Sitra is independent of the Finnish government and answers directly to the Finnish Parliament. Throughout the development process, Sitra worked closely with the:

- Ministry of Environment
- Ministry of Agriculture and Forestry
- Ministry of Economic Affairs and Employment,
- Ministry of Transport and Communication
- Business Finland (who financially supported many of Sitra's identified R&D actions)

The original roadmap was informed by a preliminary report developed by Sitra entitled *The Opportunities of a Circular Economy for Finland* (2015). It provided an analysis of international jurisdictions and their efforts towards a circular economy, factors affecting the circular economy, and Finland's potential strengths and weaknesses relating to the model. This preliminary report informed extensive stakeholder engagement and next steps, including interviews and working group meetings in the spring of 2016 to identify actions and assign implementers. This involved:

- 63 expert interviews, representing a range of key stakeholders
- 3 round table discussions
- 1,000 participants at various stakeholder events
- 250 ideas for actions and comments

In 2017, Sitra organized a **Circular Economy Steering Group** (2017 to 2019) to support it in defining national circular economy objectives and actions. This group was comprised of Finnish ministries as well as leading decision-makers from business, research and non-governmental organizations. The Circular Economy Steering Group strengthened Finland’s position as a global leader and model for circular economy, supporting implementation, roadmap evaluation and a subsequent update to the roadmap in 2019.

In 2018, a roadmap evaluation process was undertaken that involved a situational analysis produced by Deloitte in collaboration with Sitra. The analysis was prepared using data collected from interviews carried out in August and September of 2018. This involved:

- 25 expert interviews
- 6 events for stakeholders
- 350 ideas and comments from stakeholders

During the remainder of 2018 and beginning of 2019, Sitra used the collected data and material to finalize and publish the updated roadmap 2.0, renewing the competitiveness of Finland’s circular economy program. In that updated version, the roadmap 2.0 identifies key actions that can be taken by the central government (amongst other stakeholder groups), with a specific focus on ‘working across silos’.

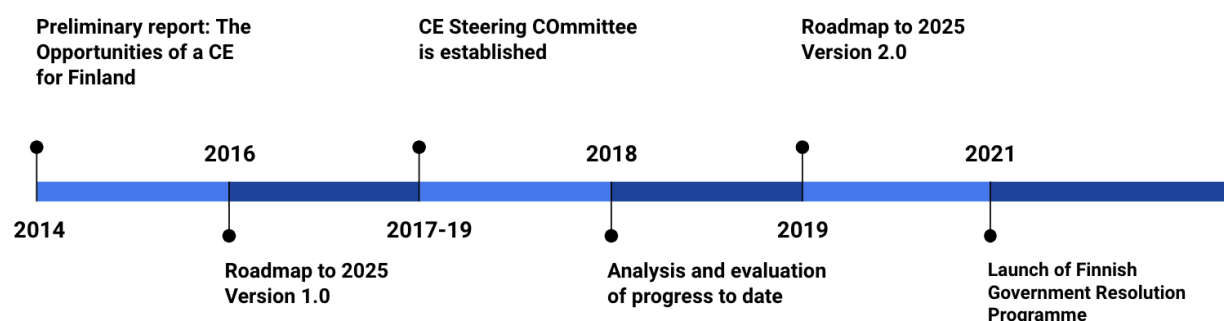


Figure 2.1 Timeline of Finland’s development of a CE strategy: Launch of Finnish Government Resolution and Implementation of Strategic Programme beginning in 2014.

Focus Areas, Goals & Targets

Finland’s circular economy roadmaps and programming use a multi-sectoral approach. The first iteration of the Finnish roadmap, published in 2016, focused on the following areas:

- 1. Sustainable Food System:** The actions outlined in this focus area work to establish Finland as a model for a sustainable food system and a global exporter of solutions. Actions include eliminating food waste, creating a market for nutrient recycling, and increasing support for biogas systems and other renewable energy solutions in agriculture.
- 2. Forest-Based Loops:** The objective of this focus area is for Finland to be a circular bioeconomy leader, leveraging its expertise in forestry and industry. Actions include creating incentives for

developing Finnish wood construction, developing an international demonstration platform for new bioproducts, and export support for innovative bioproducts and technologies.

3. **Technical Loops:** The actions defined in the technical loops focus area work across all industrial sectors to promote the sustainable use of non-renewable natural resources. Actions include promoting the use of secondary raw materials, incorporating side streams into environmental impact assessments and environmental permit processes, and developing ecodesign requirements.
4. **Transport and Logistics:** This focus area accounts for the movement of people, products, and raw materials. Actions include developing incentives and policy instruments to accelerate change towards a more service-based transportation system and making Central Finland a model province for transport biogas.
5. **Joint Actions:** This focus area contains actions that are required for systemic change and apply to all aspects of Finnish society. Actions include taxation, eliminating regulation barriers and education.

In all focus areas, **policy actions, key projects and pilots** are implemented simultaneously. Policy actions cover all legislative and other required administrative changes identified in the process. Key projects support a specific focus area and either began immediately or were already in progress. Pilots are first-phase development trials that further the circular economy and can be implemented rapidly.

Sitra Programming on the Circular Economy

In addition to the Roadmaps, more recent circular economy programming at Sitra has focused on alignment with the EU's 2020 Circular Economy Action Plan (CEAP). Sitra has committed to focusing on the following areas in the upcoming years:

- absolute decoupling and sustainable lifestyles in Europe;
- digitization as an enabler of the circular economy;
- product design at the core of the circular economy;
- aligning industrial strategy with climate and circular economy objectives;
- right to repair, and;
- a just transition.

THIS IS HOW WE CREATE A
Circular economy
 IN FINLAND



Source: [Sitra, Leading the Finnish Road Map to a Circular Economy 2016-2025](#)
 Figure 2.2. Life cycle of a product in Finland's circular economy

Government Resolution

In 2021, the Finnish Government's Resolution on the Strategic Programme for a Circular Economy was developed ("the resolution") by a broad spectrum of stakeholders such as different ministries and research institutes, in dialogue with companies, business sectors and local governments. Led by the Finnish government, it was also supported by a citizens' jury, which consisted of 50 citizens randomly selected from among volunteers. In addition, all citizens had an opportunity to participate in the preparation of the programme through an online brainstorming platform.

The resolution set the following goals:

- To decrease the consumption of non-renewable natural resources will and increase the sustainable use of renewable natural resources to the extent that the total consumption of primary raw materials in Finland in 2035 will not exceed what it was in 2015.
- To double the productivity of resources by 2035 from what it was in 2015.
- To double circular material use rate (CMU) by 2035.

To achieve these objectives the resolution outlines the key measures that Finnish ministries have committed to implementing between 2021-2024. Measures requiring funding are discussed and decided on separately in the budget and General Government Fiscal Plan processes. The Circular Economy Programme does not address the bioeconomy, as it is covered in Finland's Bioeconomy Strategy. These measures include:

1. Incentives for the circular economy
 - Developing economic incentives that support the sparing use of natural resources, reduce carbon dioxide emissions and promote the widespread use of circular economy service models
 - Strengthening funding for RDI and ecosystem activities that promote a low-carbon circular economy and for demonstration and facility investments
 - Increasing low-carbon circular economy solutions in such areas as public sector construction, energy and infrastructure projects and service procurement
 - Increasing the effectiveness of funding
2. Circular economy markets
 - Actively influencing the development of legislation and product policy instruments that support the circular economy in the EU
 - Developing cooperation between the authorities in circular economy projects
 - Promoting a strong market for recycled materials
 - Helping citizens find circular economy services and improve their appeal
3. Circular economy in key sectors
 - Signing an agreement on a low carbon circular economy
 - Establishing a national competence network to support the work of municipalities and regional ecosystems in promoting a carbon neutral circular economy society
 - Increasing circular economy awareness and expertise in the real estate and construction sector
 - Developing the principles of land use planning and steering of construction and use of facilities to support the circular economy
4. Circular economy innovations digitization and competence
 - Promoting digital solutions that support the circular economy
 - Launching and promoting circular economy ecosystems
 - Creating a circular economy design program
 - Including circular economy competence as part of the education system and working life competence
5. Circular economy foreign policy to support sustainable development goals
 - Promoting a global transition to the circular economy
 - Developing an automated model to accelerate the export of finish circular economy solutions
 - This measure is still in the early planning stage. The Ministry for Foreign Affairs is responsible for this step.

Stakeholder Engagement and Involvement

Finland's circular economy roadmap has outlined stakeholder roles as follows:

- 1. Central Government:** The central government plays an integral role in advancing Finland's circular economy and in the implementation of steering instruments and regulation. Actions include establishing an internationally competitive battery ecosystem, integrating circular economy into Finland's country brand, and building a database that enhances the circulation of materials.
- 2. Municipality:** Municipalities and cities may function as accelerators in Finland's circular economy by activating local businesses, developing public procurement measures, and encouraging all inhabitants in the region to engage in circular practices. Actions include regional circular economy trials providing references for enterprises, sharing lessons in local networks, and facilitating a Circular Economy Municipality of the Year competition to inspire local actions.
- 3. Companies:** As the circular economy progresses, new opportunities for innovation will encourage businesses to apply models and circular practices that increase their competitive advantage. Actions include materials circulating from one company to another in eco-industrial parks, making Finnish companies the leaders in corporate water responsibility, and circular economy coaching for companies looking to grow internationally.
- 4. Citizen:** Individual choices, actions and consumer behaviour play an integral role in the advancement of the circular economy. Actions include creating learning materials on sustainable everyday life and the circular economy for primary schools and building circular economy centres. In Canada, this could include creating materials for the various provinces, territories, and indigenous populations.

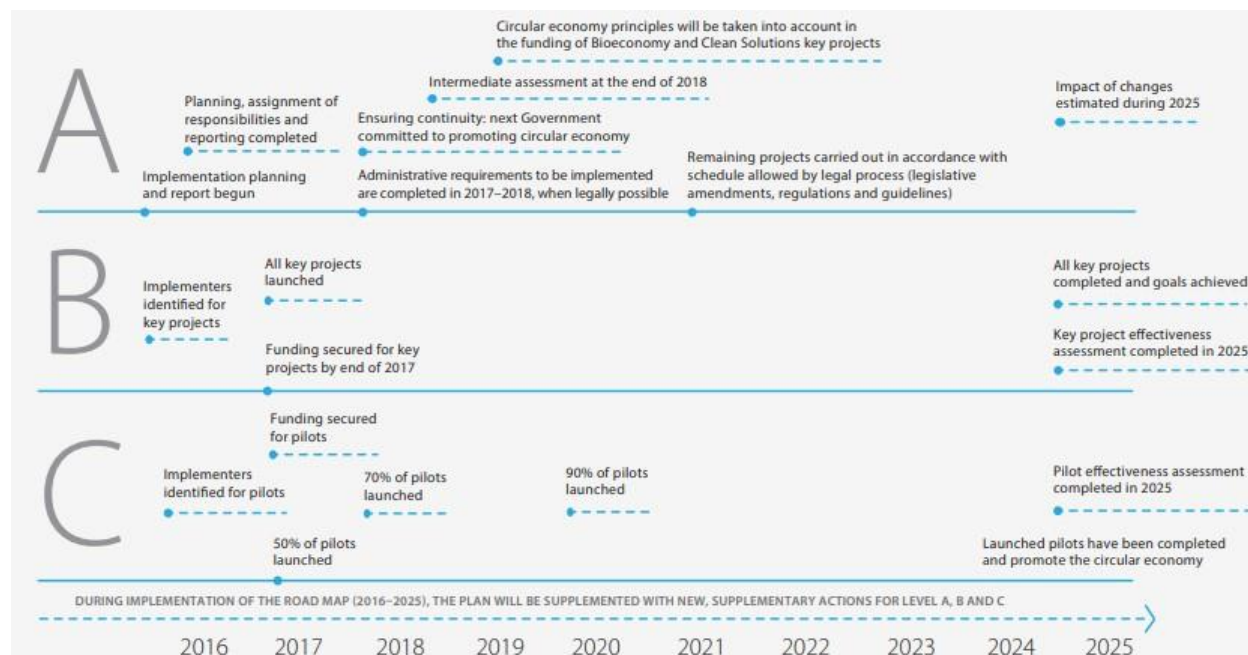
Implementation

Roadmap Implementation

Finland's collaborative circular economy roadmap directly assigned implementation responsibilities to the "owners" of actions and pilots. These owners can seek assistance from other stakeholders, the steering group, project administration and their networks as needed.

The steering group, which includes key persons in the focus areas and project administration from the team at Sitra, meet two to four times a year to assess progress on implementation and decide on future direction.

All organisations involved in the roadmap, including key stakeholders, also meet once a year at a seminar, to review road map progress, collect input on road map renewal and plan the future.



Source: Sitra, [Leading the Finnish Road Map to a Circular Economy 2016-2025](#)
 Figure 2.3. Implementation timeline of Sitra's first road map

Resolution Implementation

The 2021 government resolution further established a **steering group for the Circular Economy Program** which will report to the Ministerial Working group on Climate and Energy Policy to coordinate the implementation of the program. Preliminary indicators to support the monitoring of the program include:

- Domestic material consumption DMC (Eurostat)
- Material input required for domestic end-use material-specifically RMC (Statistics Finland and Finnish Environment Institute)
- Resource profitability (GDP/RMC)
- Circular material use rate CMU (Statistics Finland)
- Turnover of circular economy sectors and number of enterprises (Statistics Finland)
- Eco-innovations (Eurostat)
- Innovative public procurements (Eurostat)
- Municipal, packaging and construction waste and recycling rate
- Circular Economy Barometer: A survey and interview-based study for companies and consumers on attitudes and operating models that support the circular economy (commissioned survey for example, every four years)

Key Sources

- How was Finland's Road Map to a Circular Economy Drawn? <https://www.sitra.fi/en/articles/how-was-finlands-roadmap-to-a-circular-economy-drawn/>
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3. Netherlands

Governance Model: Top-down strategy

Overview

The Netherlands has an **ambitious “top-down” strategy approach** to the circular economy, having established a Government-wide Programme with a commitment to become **fully circular by 2050** – a waste-free economy that runs as much as possible on sustainable and renewable raw materials, and in which products and raw materials are reused. Based on recommendations from the Social and Economic Council of the Netherlands (SER), and with bi-partisan Cabinet support, actions seek to collaborate with diverse stakeholders and work across sectors to create meaningful change in the Dutch economy. The Netherlands leverages innovation in bioeconomy, bioproducts and biobased loops in their circular economy strategy to accelerate a circular and sustainable future.

The Netherlands formalized its commitment to develop a circular economy in 2016, by launching the [Government-wide programme for a Circular Dutch Economy by 2050](#). Complementary to the programme, in 2017, parties from both government and industry signed the Raw Materials Agreement, which aims to protect raw materials through sustainable and circular actions.

In 2018, the Dutch government and signatories to the Raw Materials Agreement drafted five transition agendas, each focusing on a specific sector and value chain that is cornerstone to the Netherlands' economy. The shared objective of the transition agendas was to strategize how specific sectors can become circular by 2050, and identify the actions required to accomplish that goal. In 2019, the government launched its [Circular Economy Implementation Programme 2019-2023](#), which transformed the country's five transition agendas into concrete actions and projects to be implemented between 2019 and 2023.

The [Updated Circular Economy Implementation Programme 2021-2023](#), published in 2021, provides a brief overview of progress to date and identifies new initiatives that are in the process of launching.

The Netherlands' focus on bioeconomy and bio-based solutions is cornerstone to their strategy's ingenuity and success. These elements of innovation are integrated in the objectives and actions of each of the five transition agenda's.

Rationale: Motivations, Narrative, Impetus for Change

The Netherlands' commitment to the circular economy is rooted in its desire to become less dependent on the import of scarce raw materials while contributing to a cleaner environment. The Government-wide programme outlines largely economic and environmental opportunities that the circular economy can provide including:

- **Economic:** reduction of import dependencies, creation of new export possibilities, job creation
- **Environmental:** CO₂ emissions reductions

The Netherlands' Government-wide programme activities were a key contribution of the Netherlands' Presidency of the European Council in 2016, and a highly visible contribution to the 2015 Circular Economy package of the European Commission with the opportunity for them to show leadership and guide the direction and outcomes from the process. The circular economy was further seen as a key pathway to realising the UN Sustainable Development Goals.

Domestically, the Government-wide programme streamlined and coordinated existing national policies of relevance to the circular economy. It incorporated elements from the 'Biomass Vision for 2030' and the 'Raw Materials Memorandum'. It built on the green growth programs 'From Waste to Resources' which aimed at using raw materials in a more sustainable manner and the 'Biobased Economy' which focused on the transition from fossil based raw materials to biomass as raw material. The programme also ties in with the policy to foster a healthy and safe living environment.

Circular Economy Approaches and Development

The Social and Economic Council (SER) advises the Dutch Cabinet and Parliament on social and economic policy. It is an independent advisory body in which employers, employees and independent experts (Crown-appointed members) work together to advance a strong and sustainable economy, promote full employment and a fair distribution of income. In 2016, the SER released a report advising the Dutch government to pursue an ambitious transition agenda towards a circular economy. This advice formed the basis of [the Dutch Cabinet](#) decision to advance a [Government-wide Program for a Circular Economy](#) that same year.

The following year, the Government signed a National Raw Materials Agreement with more than 180 organizations and enterprises. The Dutch government and signatories to the Raw Materials Agreement collaborated to draft the five transition agendas, including biomass and food, plastics, manufacturing, construction and consumer goods. Each of these were developed with extensive stakeholder consultation involving experts from the business community, non-governmental organizations and authorities, and other relevant stakeholder groups.

The five-year transition agendas were updated in 2019 under the Government's Circular Economy Implementation Programme (2019-2023) and again in 2021 (for implementation between 2021-2023)..

Focus Areas and Targets

The government's ambitious target is for the Dutch economy to use 50% fewer primary resources (i.e., minerals, metals, and fossil fuels) by 2030 and be entirely waste-free by 2050. To achieve this target and transform the Dutch economy into a circular economy at an accelerated pace, three strategic goals were formulated in the Government-wide programme:

1. Ensure production processes use raw materials more efficiently, so that fewer are needed
2. When new raw materials are needed, use sustainably produced renewable and widely available raw materials; and,
3. Develop new production methods and design new products to be circular

The five transition agendas developed by the government and signatories, and led by Transition Teams, included the following objectives:

1. **Plastics:** To realize a fully circular plastics economy by 2050, the plastics Transition Team identified four development directions, each supported by analyses, actions and interventions:
 - Prevention, more with less and the avoidance of leakage
 - More supply and demand for renewable plastics
 - Better quality, more environmental efficiency
 - Strategic (chain) cooperation

2. **Consumer Goods:** The consumer goods Transition Team identified 38 actions to enable the Netherlands to achieve an effective transition towards a circular economy. The actions focus on reducing the consumption of raw materials and promoting long-term use and reuse.

3. **Manufacturing:** The manufacturing Transition Team created an approach consisting of three components:
 - Increasing supply security of critical materials
 - Reducing the environmental pressure of products from the manufacturing industry
 - Closing the cycle for products from the manufacturing industry

4. **Construction:** The construction Transition Team developed a strategy to ensure resources in the construction chain are recycled as much as possible and organic-based materials are broadly integrated into sector practices. Actions include embedding circularity into construction regulations, establishing a task force for the review of waste materials, and creating a circular construction knowledge institute.

5. **Biomass and Food:** The biomass and food transition agenda was designed to address challenges concerning biomass use in a circular economy and related aspects of the Dutch food system. This transition agenda focuses on the following:
 - Supply
 - Sustainable production systems
 - Consumption patterns
 - Revenue models

Furthermore, ten cross-cutting themes were identified in the transition agenda. These themes intersect all transition agendas and are as follows:

- Producer Responsibility
- Funding Instruments
- Legislation and Regulation
- Monitoring, Knowledge and Innovation
- Circular Design
- Behaviour and Communication, Education and the Labour Market
- Circular Procurement
- International Efforts
- Market Stimuli
- Netherlands Circular Accelerator

All transition agendas examined social implications, focusing on the intersectionality between circular economy and just transition. Although the circular economy provides opportunities across many sectors, it also leads to changes in working conditions, work climate and operating procedures. In addition to examining the consequences of circular adaptation across many sectors, the Transition Teams emphasized that investment must be made in training, education, and practice

Stakeholder Engagement and Involvement

The Dutch approach to the circular economy involves the active involvement of enterprises, employees and civil society organizations. The Dutch Cabinet has also identified the following five instruments through which it can exercise its authority to influence the sector transitions:

- Fostering legislation and regulations
- Intelligent market incentives
- Financing
- Knowledge and innovation
- International cooperation.

Implementation: Actions, Monitoring, and Evaluation Mechanisms

The high-level implementation of the Government-wide programme, is directed by a steering committee, composed of national government ministries and various stakeholders and incorporates regular strategy evaluation, monitoring, and adaptation.

The Circular Economy Implementation Programme, launched in 2019 and updated in 2020 and 2021 includes detailed plans. These documents provide specific actions and projects in the high-priority supply chains identified in the five transition agendas. They also provide some illustrative and inspirational elements to encourage others (companies, the general public, regional and other authorities) to take action and turn ideas into business cases. The Ministry of Infrastructure and Water Management is responsible for organizing and facilitating an annual National Circular Economy Conference for key stakeholders to discuss progress and potential adjustments to the Implementation Programme.

Furthermore, every two years, the Netherlands Environmental Assessment Agency (PBL) publishes a progress report to monitor and evaluate the progress made towards that objective and to provide the necessary knowledge for an informed policy process.

The Dutch government is also active in multi stakeholder platforms, where government, business and a network of international organizations drive the goal of a circular economy forward. The [Platform for Accelerating the Circular Economy \(PACE\)](#), with more than 40 members, is an example of cross-jurisdictional knowledge sharing.

Insights for Canada

The Netherlands' unique decision to focus on the bioeconomy and bio-based solutions as a crosscutting issue is a cornerstone to their strategy's ingenuity and success. Biological material solutions are integrated into the objectives and actions of each of the five transition agendas.

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4. Scotland

Governance Model: Bottom-up and top-down innovation agenda (hybrid model)

Overview

Scotland’s circular economy journey began in 2010 and has demonstrated cohesion over time and an effective **phased hybrid approach**, leveraging sector-specific actions and regional ambition to advance the country’s circular economy.

Scotland released its [Zero Waste Plan in 2010](#), which introduced key recycling targets and set the strategic direction for waste policy for Scotland. Informed by an improved understanding of the environmental consequences of how we use and dispose of resources, and by the requirements of European legislation, the Zero Waste Plan was considered an economic and resource strategy arather than a waste strategy.

Building on the success of the Zero Waste Plan, Scotland launched the [Safeguarding Scotland’s Resources Programme](#) in 2013. This government programme identified actions to shift efforts towards waste prevention and resource efficiency thereby improving productivity and competitiveness.

In 2016, Scotland took a more holistic approach to waste management by publishing one of the world’s first circular economy strategy documents, [Making Things Last: A Circular Economy Strategy for Scotland](#). This strategy consolidated and built on targets and actions established in the Zero Waste Plan and Safeguarding Scotland’s Resources programme.

In 2022, the Government of Scotland launched two complementary consultations for a Circular Economy Bill and a Route Map. The [Circular Economy Bill](#) proposes to establish the legislative framework to support Scotland’s transition to a zero waste and circular economy, significantly increase reuse and recycling rates, and modernise and improve waste and recycling services. The [Route Map](#) is specifically aimed at maximising progress towards waste and recycling targets. Both consultations outline key activities to move Scotland towards a more circular economy.

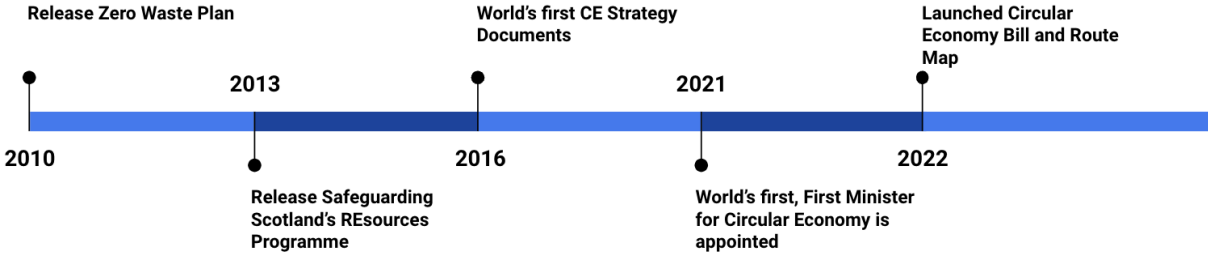


Figure 4.1. Timeline of Scotland’s journey to developing a CE strategy beginning in 2010.

Rationale: Motivations, Narrative, Impetus for Change

Scotland's circular economy approach builds on its zero waste and resource efficiency agendas. It outlines the following benefits for the:

- **Environment** – cutting waste and carbon emissions and reducing reliance on scarce resources.
- **Economy** – improving productivity, opening up new markets and improving resilience.
- **Communities** – more, lower cost options to access the goods needed with opportunities for social enterprise.

Notably, the circular economy is viewed as a **key pathway to meet Scotland's emissions reduction goals** and has been intertwined in its Climate Change agenda. Scotland's 2020 Climate Change Plan update includes a vision for a circular economy by 2045 driven by a focus on responsible consumption, responsible production and maximizing value from waste and energy.

Circular Economy Approaches and Development

Scotland's hybrid approach to the circular economy has leveraged different institutions to advance the circular economy. The Scottish government provides a regulatory framework and robust legislative support to the advancement of the nation's circular economy, while various not-for-profit organizations work directly with Scottish industry, businesses, and individuals to adapt to a changing economy. The latter efforts are spearheaded by Zero Waste Scotland (an independent third party organization partially funded by the Scottish government), whose aim is to create a society where resources are valued and nothing is wasted. Zero Waste Scotland has been increasingly engaged by the Scottish Government, supporting the government by facilitating workshops conducting research and facilitating stakeholder engagement.



Figure 4.2: How Zero Waste Scotland Supports the Circular Economy

Making Things Last Strategy

Scotland's most recent completed strategy development process for *Making Things Last: A Circular Economy Strategy for Scotland*, was led by Zero Waste Scotland who facilitated extensive stakeholder engagement activities. Zero Waste Scotland created a social media campaign estimated to have reached approximately 3 million people. Additionally, the team facilitated a two-day workshop with 13 individuals associated with Young Scot, a youth advocacy group. In conjunction with these stakeholder engagement activities, a national survey was sent out to collect insights on the youth perspective related to the circular economy.

Environmental and Equality Impact Assessments

All programs and plans that have potential significant impact on the environment are required to undergo environmental impact assessments and equality impact assessments. Scotland's Zero Waste Plan, Safeguarding Scotland's Resources, both underwent an equality impact assessment and a business and regulatory impact assessment:

Equality Impact Assessment:

- Stage 1 - Framing: From January to June 2015 there was a series of workshops, meetings and debates with various stakeholders hosted by Zero Waste Scotland, Scottish government, and the Scottish Environment Protection Agency (SEPA). The consultation period had one specific question on quality of impact.
- Stage 2 - Data and evidence gathering, involvement and consultation: Data was gathered on age, disability, sex, pregnancy and maternity, gender reassignment, sexual orientation, race, religion or belief, marriage, and civil partnership.
- Stage 3 - Assessing the impacts and identifying opportunities to promote equality: In this stage the positive, negative, or non impacts of the policy on protected characteristics
- Stage 4 - Decision making and monitoring: In this stage mitigating actions for the negative impacts of the policy are identified and established.

Business and Regulatory Impact Assessment

- Public consultation in the form of a debate period. 19 stakeholders and various industry leadership groups were involved
- A 10-week formal consultation period from August to October 2015
- During the 10-week consultation. 9 firms of various sizes were asked to complete a questionnaire as part of the Scottish Firms Impact Test
- Data support for Making Things Last was provided with key sectoral studies requested by the Scottish Government and conducted By Zero Waste Scotland and Green Alliance. The conducted studies are:
 - The Carbon Impacts of The Circular Economy – Zero Waste Scotland
 - Sector Study on Beer, Whiskey and Fish – Zero Waste Scotland
 - Remanufacturing Study – Zero Waste Scotland
 - Circular Economy Scotland – Green Alliance

A public consultation period took place from August to October of 2015 where participants were asked to explore the priorities for transitioning to a circular economy. Following consultation, the Scottish government published a response analysis report [Making Things Last: Consultation on Creating a More Circular Economy in Scotland](#) to examine and share stakeholder feedback.

Circular Economy Bill

[The Scottish Government is currently proposing a circular economy bill.](#) Over the past 4 years, the Scottish Government has been consulting with stakeholders on its proposal for legislation, prior to the introduction of a bill. The bill establishes the legislative framework and the influence needed to support Scotland's ability to transition to a circular economy. The Scottish government conducted consultations in mid 2022. The consultations set out a variety of aspects of the Bill and split the discussion into four key sections: strategic interventions, reduce and reuse, recycling, and littering and improving enforcement. The consultations sought to engage the public, the third sector, communities, businesses, and all other interested parties.

Focus Areas and Targets

Making Things Last Strategy

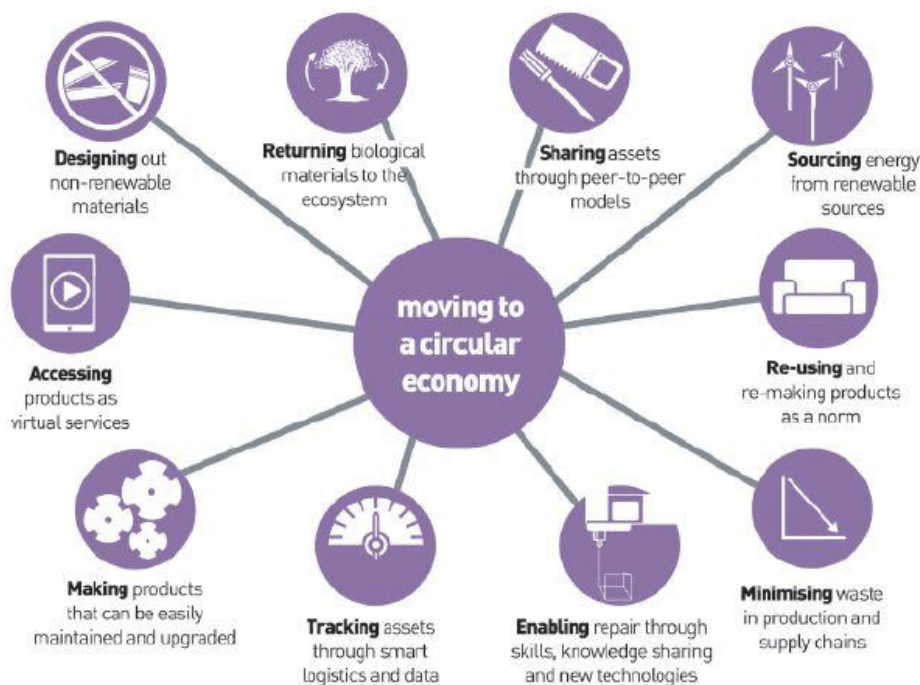
Scotland's circular economy strategy outlines four priority areas, which were selected for their economic importance to Scotland and their value added to Scotland's Sustainable Development Plan and supporting emissions reductions targets. The Scottish Government also recognizes that these four priority areas have high potential impacts on increasing and up-skilling Scotland's workforce.

- 1. Food and Drink, and the Broader Bioeconomy:** This priority area focuses on retaining the highest value of biological resources used in the food and drink sector, making use of the biological waste and by-products generated, and making Scotland a leader in anaerobic digestion. Actions in this priority area include separating collection of organic waste, developing new technologies that can use generated waste, mapping bioresources, investigating the potential for biorefining hubs, reducing purchasing of non-renewable biological materials to stimulate demand for renewable fertilizers, and supporting collaboration and research in supply chains related to bioresources.
- 2. Remanufacturing:** The objective of this priority area is to elevate Scotland's international profile as a remanufactured goods provider. Actions in this area include creating the Scottish Institute for Remanufacturing to co-fund collaboration between industry and higher education institutions and to develop a remanufacturing community. Additionally, the Institute works to gain and maintain the recognition for the quality of remanufactured goods in international markets.
- 3. Construction and the Built Environment:** Half of Scotland's waste comes from construction. This priority area aims to reduce the amount of waste that reaches landfills by improving building design, increasing material reuse, and increasing recycling. Actions in this priority area include building capacity in the construction sector, enhancing recycling of demolition materials, and increasing public procurement of products and services that promote circular approaches such as leasing, repair and remanufacture.
- 4. Energy Infrastructure:** This priority area works to increase the effectiveness of Scotland's waste energy infrastructure and reduce the demand for high quality materials that can otherwise be reused, remanufactured, or recycled. Actions outlined in this priority area include improving

information management systems to promote better decision-making in industry, local authorities, and other stakeholders.

These priority areas are integrated into 12 key changes required across Scotland’s economy to progress the country’s circularity:

- Waste Prevention
- Design
- Reuse
- Repair
- Remanufacture
- Recycling
- Producer responsibility for reuse and recycling
- Recovering value from biological resources
- Energy recovery
- Landfills
- Communications and engagement
- Skills for a circular economy



Source [Making Things Last: a circular economy strategy for Scotland](#)

Figure 4.3: Scotland’s Vision for a Transition to a Circular Economy

Scotland’s circular economy strategy also set the following targets:

- 60% of household waste to be recycled /composted and prepared for re-use by 2020
- 70% of all waste to be recycled / composted and prepared for re-use by 2025
- reduce all food waste arising by 33% against the 2013 baseline by 2025
- reduce waste arising by 15% against the 2011 baseline by 2025
- no more than 5% of all waste going to landfill by 2025
- no biodegradable municipal waste going to landfill by 2025

Circular Economy Bill

While Scotland has made progress on these targets, the proposed Circular Economy Bill aims to bring forward measures that require primary legislation to meet these targets. This includes:

- having a circular economy strategy obligation every 5 years, having enabling powers to set statutory targets in relation to the circular economy and the proposed establishment of a circular economy public body.
- measures to ban the destruction of unsold durable goods, environmental charging for single-use items and mandatory reporting of waste and surplus.
- strengthening the approach to household recycling collection services, statutory recycling targets for local authorities and incentivising waste reduction and recycling.
- a new penalty for littering from vehicles and the proposed seizure of vehicles linked to waste crime.

Stakeholder Engagement and Involvement

Scotland's circular economy strategy emphasizes the need to build a wide coalition of interests, including businesses, the public sector, communities, and NGOs to achieve the level of influence required.

In particular, it calls for high profile brands to embrace a more circular approach and bring new products and services to market. It also emphasizes the role of young people in adopting circular economy models of production and consumption.

Beyond the Scottish government, **Zero Waste Scotland** has played an integral role in funding, developing and accelerating the nation's circular economy strategy. Although the organization was initially established to focus on waste reduction, Zero Waste Scotland has redirected its focus to being the driving force behind the country's circular economy. Zero Waste Scotland is an independent, third party organization that is funded by the Scottish government and receives supplemental funding from the European Structural and Investments Funds, the European Union's pathway for investing in "smart, sustainable and inclusive growth," as part of the [Europe 2020 Strategy](#).

Implementation

In 2021, Scotland appointed the **world's first Minister of the Circular Economy** to create ownership of the issue within the national government. The same Ministry portfolio also encompasses green skills and biodiversity signifying how Scotland is putting the circular economy front and centre in its long-term strategy and approaching it from a 360-perspective, where people and nature are the priority.

Scotland tracks progress towards the circular economy using key indicators including:

- The total amount of waste produced by sectors - household; commerce and industry; and construction and demolition.
- The amount of waste produced by sectors per unit of GVA
- The carbon impact of waste - the whole-life impacts of waste including the benefit of prevention and recycling.

5. Germany

Governance Model: Public-private sector based transition agenda (third-party led)

Overview

Germany's circular economy efforts reflect a strong emphasis on science and research through a **third-party public-private roadmap process**, balancing comprehensiveness with industrial priorities. Germany released the [Circular Economy Roadmap for Germany](#) in May 2021 following two years of developing a joint vision to foster the transition to a circular economy through collaborative projects and practical implementation. The focus is on establishing a common and consistent vision for a Circular Economy in Germany by 2030 and developing the necessary recommendations to advance this goal.

Germany is building their circular economy from an advantageous position as an internationally recognized manufacturing leader. In 2019, the [Circular Economy Initiative Deutschland \(CEID\)](#) was founded by Germany's Federal Ministry of Education and Research, to promote Germany's multi-stakeholder approach to transitioning to a CE. The CEID is also funded by the Ministry of Education and Research, however, is independent of the government and is executed under the guidance of Acatech, the National Academy of Science and Research, in cooperation with SYSTEMIQ. CEID and its three working groups of over 130 experts from over 50 diverse sectors synthesized their conclusions for a CE Roadmap for Germany in 2021.

[CEID](#) has defined a vision as the overarching narrative for Germany's CE Strategy: "A systemically conceived and sustainable Circular Economy will make a comprehensive contribution to the EU target of net zero greenhouse gas emissions by 2050, allowing economic growth to be absolutely decoupled from resource consumption. It will ensure planetary limits are respected and sustainability goals achieved and help to enhance quality of life and ensure equitable prosperity through collaborative, inter-company value creation and innovation."

Rationale

[Germany's motivation for creating a CE Roadmap to 2030 is three-fold](#): (1) it is an important mechanism to achieve climate, development, and resource targets, (2) it is a necessary prerequisite to ensure market acceptance in some industries, and (3) in other industries it is key to competitive advantage.

- **Climate, development, resources:** The CE is an opportunity for Germany to bring together economic and environmental policy to respond to the ongoing, universal threat of climate change and make important strides towards achieving the goals of the European Green Deal (e.g. climate neutrality by 2050). A circular economy strategy in Germany offers a holistic approach to addressing the interrelated nature of the climate crisis, biodiversity loss, global health, and overuse of natural resources.

- **Market acceptance:** The importance of a level playing field through equitable market access is underscored in Germany’s CE. This is seen as a critical regulatory instrument that will ensure industries, across the value chain, are motivated to join.
- **Competitive Advantage:** The implementation of the CE roadmap in Germany is not an end in itself; instead it connects the existential threat of the climate crisis and resource utilisation with a fundamental cultural shift. This increases competitiveness and decreases reliance on raw material imports. This will also result in job creation, job stability, and domestic value creation.

Circular Economy Approaches and Development

Following work by SYSTEMIQ, Acatech, and the Ellen MacArthur Foundation to explore the opportunities for Germany to transition to a CE, the SUN Institute, in collaboration with industry, launched the CEID. At its launch, the CEID published a preliminary study called “Pathway Towards a German Circular Economy – Lessons from European Strategies”. This study was a synthesis of other European CE strategies and roadmaps used as the foundation for Germany’s Roadmap process. In 2019, Germany’s Circular Economy Roadmap was developed by the CEID with support from Germany’s Federal Ministry of Education and Research. The CEID continues to be supported by the Wuppertal Institute for Climate, Environment, and Energy.

The CEID engages a diverse set of stakeholders from across the value chain, academia, and civil society to develop and implement the strategy. CEID’s ultimate goal is to establish a collective goal and vision for Germany to transition fully to a CE. This takes place in multiple committees, with working groups forming the core of the work.

Three key working groups were established on “circular business models”, “packaging”, and “traction batteries”, each of which published their own reports on these topics. These working groups were selected for their strategic importance in enabling circularity, addressing plastic waste, and supporting decarbonisation of the transport sector.

The Steering Committee is the leadership team at the strategy level. Finally, the Task Force is made up of company representatives, academic institutions, civil society, SYSTEMIQ, and the CEID office. See Figure 5.1 for a full layout of the CEID structure.

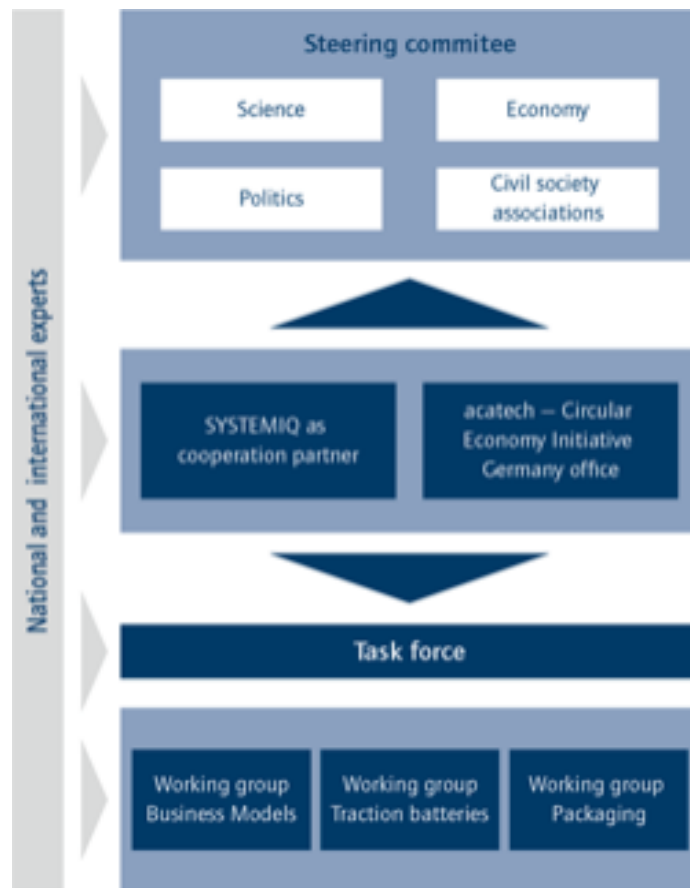


Figure 5.1. Breakdown of CEID Structure

Focus Areas and Targets

The CEID took a three-step approach to developing the clear goals, targets, and objectives of the CE Roadmap for Germany:

1. The first step entailed developing a vision that clearly outlined the environmental, economic, and social objectives of the strategy. This was conducted by the working groups and the task force.
2. The second step involved a literature review and comparison of domestic and international agreements based on the findings from step one.
3. The final step defined process goals to measure the impact of the CE Roadmap. There is a need to develop objectives that achieve their desired outcomes of conserving resources, reducing GHG emissions, a decreased exploitation of ecosystems, and an increased protection of biodiversity.

The achievement of the goals laid out by Germany's CE Roadmap, will enable the circular economy to flourish in Germany. The circular economy is viewed as a means to avoid the environmental degradation caused by the existing linear approach to production and consumption. As a result, the **resource related objectives** at the federal level of Germany's CE roadmap are:

1. Minimise the consumption of resources
2. Maximize resource utilization and value retention
3. Avoid waste

A key goal of Germany's CE Roadmap, highlighted in Figure 5.2, is the absolute decoupling of human wellbeing and value creation from resource consumption. Other circular economy objectives for 2030 include:

- improved resource utilization and conservation will result in an overall **decrease in resource consumption**.
- **Waste volumes will have decreased** due to a true circular value retention of materials and products.
- **Resource conservation** will be slow, but there will be a noticeable change in overexploited and damaged ecosystems, resulting in the **preservation and conservation of biodiversity**.
- A **reduction in greenhouse gas emissions** as well as plastics inputs and ecosystem eutrophication, marking a large step toward greenhouse gas neutrality.

Social and political objectives are also highlighted as fundamental pillars to the success of the implementation of Germany's CE Roadmap. Some of these include:

- The development of CE "relevant initial and in-service training provision and increased CE policy advice" will help foster societal and political support
- Cross-cutting environmental and circularity education will create societal awareness of resource efficiency and sustainability
- Social innovations will have been enabled to support the creation of repair initiatives and other collaborative methods for production
- The majority of demand will be for circular products, established through sustainable use patterns
- This will result in an overall improvement in quality of life and will ensure a fair and just prosperity for Germans.

Figure 5.2 outlines the CEID's national level framework that ensures CE objectives meet their desired outcomes.

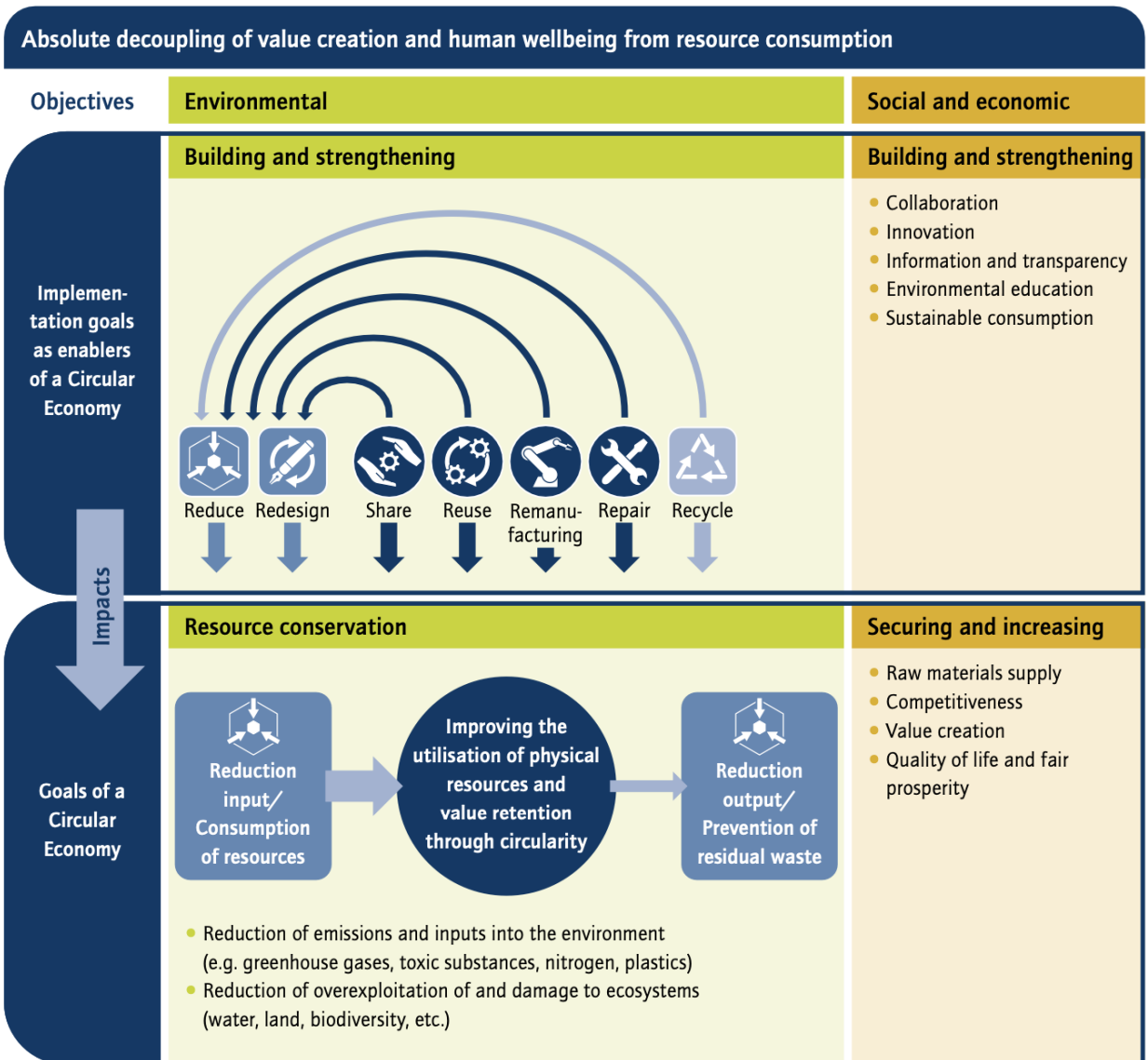


Figure 5.2. The Federal Ministry’s national level reference framework for CE objectives.

Implementation: Actions, Monitoring, and Evaluation Mechanisms

The German CE Roadmap includes policy recommendations across the working groups established as well as for policy makers, businesses, and academia. The Roadmap also urges that the following steps take place:

1. Embedding the recommendations of the Circular Economy Initiative Deutschland in an integrated, comprehensive circular economy strategy for Germany, including concrete, complementary targets among other things for waste prevention, recycling and overall resource consumption,
2. Establishing interdepartmental coordination of the implementation of measures at the highest possible level overseen by a high-calibre and transdisciplinary expert advisory board,
3. Implementing effective real-world pilot projects, for example the project outlines developed by the Traction Batteries working group (“knowledge of battery life”, “model-based decision-making platform” and “disassembly network”),
4. Exploring, piloting and scaling concrete business models which bring higher-quality circular strategies and use- and results-oriented business models to fruition,
5. Optimising the quantification of Circular Economy measures at the macroeconomic and operational level with regard to their environmental, economic and social impact and analysing the effect of carbon pricing and an overhaul of tax rules to support climate- and resource-optimised economic decision-making,
6. Intensifying the networking with other European initiatives, science academies and research networks initiated in the course of the Circular Economy Initiative Deutschland and
7. Carrying out further leading projects similar to the Circular Economy Initiative Deutschland, in order to generate in-depth insights into further functional areas (such as buildings and infrastructure, foodstuffs, agriculture and forestry, textiles and clothing, electrical appliances) in close cooperation with other (also European) initiatives.

Insights for Canada

The inclusion of social and political objectives are highlighted in multiple case studies above as a best practice that supports the successful implementation of CE approaches. Germany presents a clear example (education, consumption, etc.) of how these objectives can be integrated and leveraged to support a holistic transition that supports quality of life outcomes.

Key Sources

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- <https://circulareconomy.europa.eu/platform/en/dialogue/existing-eu-platforms/circular-economy-initiative-germany-circular-economy-roadmap-germany>
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6. Québec

Governance Model: Bottom-up innovation agenda

Overview

Québec's approach to the circular economy has been a **bottom-up collaborative effort** among diverse stakeholders, spearheaded by academia, resulting in one of the most advanced regions in circularity in North America. The province is now developing its first "top-down" circular economy roadmap for provincial government ministries and agencies, led by the [Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs \(MELCCFP\)](#) within the Gouvernement du Québec, in collaboration with RECYC-QUÉBEC, the Provincial government's waste management corporation (to be expanded to all levels of government in the next phase). The roadmap is being created in conjunction with the Governmental Sustainable Development Strategy 2023-2028 and both resources are expected to be made public by Q4 of 2022-23.

Rationale

A spirit of inventiveness, innovation, and curiosity has propelled Québec in establishing itself as a circular economy leader. Through a core yet dedicated group of researchers and systems-thinkers, efforts to advance the circular economy agenda in Québec have evolved to engaging at the local and political levels - including the circular economy's potential to underpin sustainable development and climate change goals and priorities.

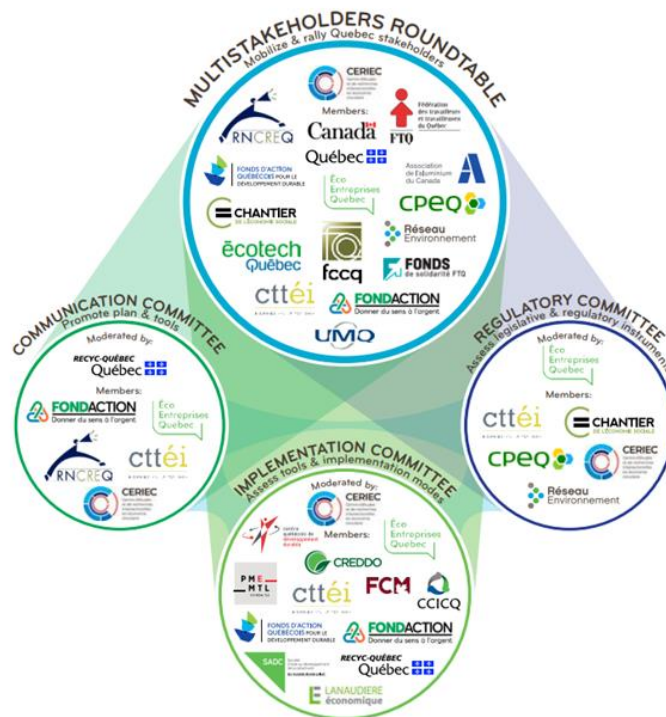
Circular Economy Approaches & Development

Concerted efforts to foster circularity in Québec have revealed extensive opportunities for implementation at various levels, including across value chains and regions, or by strategies. However, it took time for stakeholders to take ownership of the concept and to integrate it into their organizations and practices.

Québec's circular economy is a highly collaborative endeavour, which first emerged through academic (post-secondary institutional) circles, starting in earnest through the establishment of an Institute on Environment, Sustainable Development and the Circular Economy (EDDEC) by researchers from **HEC Montreal, the University of Montreal, and the Montreal Polytechnique**. Established in 2014, EDDEC was created to promote interdisciplinary research on the circular economy. The EDDEC Institute first brought together several researchers from the three universities who were working on sustainable development, who engaged further with the Interdisciplinary Research Center in Operationalization of Sustainable Development (CIRODD) and the Center for Technology Transfer in Industrial Ecology (CTTEI).

From the Institute's foundation to the finalization of its mandate in 2020, EDDEC contributed to foundational research in Québec - mapping the value chains of potential priority sectors and analyzing potential circularity strategies for future consideration. In 2018, a collaborative effort between several organizations produced the [Circular Economy in Quebec Economic - Opportunities and Impacts](#) report.

Most importantly, EDDEC created the **Pôle québécois de concertation sur l'économie Circulaire**, a multi-stakeholder roundtable collaboration mechanism designed to facilitate the province's transition, involving more than 20 stakeholders from various sectors, including industry, associations, environmental non-profits, and government. The originality of the Québec model lies precisely in the diversity of these partners.



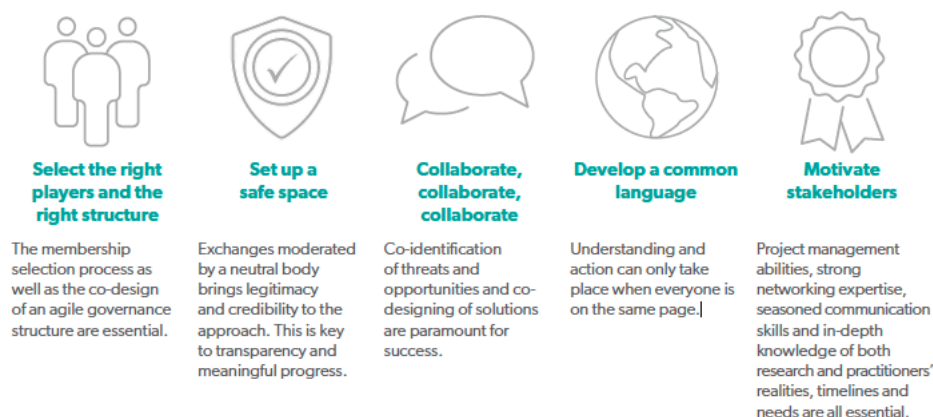
Éco Entreprises Québec, 2020. In collaboration with the CERIEC. Reproduction authorized. Modification prohibited.

Source: [Transitioning to a circular economy – Learning from the Québec experience 2014-2020](#)

Figure 6.1. Le Pôle québécois de concertation sur l'économie circulaire (Québec Centre for consultation on the circular economy).

In 2015, the Pôle created Québec's official definition of a circular economy, reiterating the importance of identifying the conditions necessary for a successful transition. The conditions identified included collaboration, education, and the free flow of information between stakeholders. As a result of the Pôle, CE themes were integrated into the [Stratégie Gouvernementale de développement durable 2015-2020](#). RECYC-QUÉBEC also added the circular economy to its mission in 2015. In addition, the group developed the 12 circular economy strategies distributed by Québec Circulaire, a group resulting from the Pôle. They constitute general models which can subsequently be developed and adapted in different sectors of activity, for example textiles, agriculture, and manufacturing.

In 2017, under the leadership of the Ministère de l'économie, de l'innovation et de l'Énergie (MEIE, formerly MESI) and RECYC-QUÉBEC, a group of representatives from a dozen of the Government of Québec's ministries and state companies was established. This inter-departmental group on circular economy (**Groupe interministériel sur l'économie circulaire - GIEC**) coordinates the efforts of the different Ministries of the Québec Government for a more efficient implementation of the circular economy. Since 2019, with the help of the MELCCFP, the GIEC has been coordinated by RECYC-QUÉBEC, who has been instrumental in relaying the intelligence gathered by members of the Pôle, as well as informing the decision-making process.



Source: [Transitioning to a circular economy – Learning from the Québec experience 2014-2020](#)
 Figure 6.2: Keys to implementing a bottom-up approach via a multi-stakeholder table.

The EDDEC Institute’s five-year financing and mandate ended in 2019. In 2020, prior to the to their mandate completion, EDDEC was approached by the Bureau de coordination du développement durable (BCDD) of the MELCCFP to convene stakeholders ahead of the development of the Sustainable Development Strategy for 2023-2028 and to inform MELCCFP on how to integrate circular economy into the strategy.

Between 2014 and 2020, EDDEC:

- Mobilized over 2,000 researchers, professors, students, and employees on Campus Montréal
- Initiated or supported the development of some 80 research projects
- Developed 14 inter-university collaborations on Campus Montréal
- Created and developed over 40 long-term partnerships and professional relationships, of which 5 were international collaborations.

In September 2020, École de Technologie Supérieure (ÉTS) launched the Center for Intersectoral Studies and Research on the Circular Economy (CERIEC) as EDDEC’s replacement. Building on EDDEC’s foundational work, CERIEC continues to promote and support the transition to the circular economy in Quebec. Currently, CERIEC is facilitating workshops across Quebec at the request of industry stakeholders while Quebec’s formalized circular economy strategy is under development.

Lastly, a multi-disciplinary team from CIRANO hosted a workshop from August 4-6, 2020, in conjunction with MELCCFP, Université Laval, Polytechnique Montreal, and HEC Montreal. The objective of the workshop was to validate stakeholder interests and priorities with respect to the circular economy, as summarized in the resulting [workshop report](#).

Québec Circularity Gap Report

RECYC-QUÉBEC has become a central player in the circular economy in Québec. The organization coordinates the GIEC, supports social economy projects, several of which aim to reuse goods, and finances industrial and territorial symbioses as well as projects to combat food waste or eco-management of construction, renovation and demolition sites.

In 2021, RECYC-QUÉBEC released the first [Report on Québec's Circularity Economy](#). Initiated by RECYC-QUÉBEC and produced in collaboration with Circle Economy, an organization based in the Netherlands dedicated to the global promotion of the circular economy, the report provides an initial benchmark analysis revealing that the Québec economy is currently 3.5% circular.

The report applies key indicators developed by Circle Economy to Québec's economy, which have already been used to measure the circularity of the economies of countries including Austria, the Netherlands, and Norway. This initial reference base provides a starting point, while also enabling Québec to benchmark itself.

To produce this analysis, an advisory committee and a scientific committee made up of Québec experts from academia, business, civil society organizations and government departments also collaborated to ensure that the process was as representative of Quebec reality as possible.

Key findings

At 3.5%, the circularity index for the Québec economy shows that most of the resources the economy uses to satisfy its needs and desires are not used in a loop. Although the province does better than Norway (2.4%), it remains far behind the Netherlands (24.5%) in its ability to reintroduce consumed resources into its economy. The rate recorded in Québec is partly linked to the fact that its economy is largely linear (extract, consume, throw away) and accustomed to high rates of extraction, production, trade, and consumption. Québec's economy consumes 271 million tonnes of resources per year, or 32 tonnes per capita.

This high rate of consumption of natural resources and raw materials entails an enormous amount of extraction of virgin resources, as well as generating a significant quantity of residual materials. Housing, manufactured goods, and agriculture are the three biggest consumers of resources.

By adopting new behaviors, stimulating local economies, reducing its dependence on external economies, and prioritizing actions in certain key sectors, the report suggests it will be possible to increase the circularity of Québec's economy and its performance, while respecting the environment.

Focus Areas and Targets

In the [Circular Economy in Québec - Economic Opportunities and Impacts](#) study conducted by EDDEC and the Research Group on Globalization and Management of Technology (Polytechnique Montréal), four key sectors were identified for their economic importance to the province and high growth potential in the circular economy. While this selection is not exclusionary, it represents the areas of most significant projected growth:

1. Agri-Food
2. Energy
3. Construction
4. Metal Products

Noting that organizations often require signals to act, the report also identifies six additional policy levers, grouped into three types of levers (Figure 6.3).

Regulation	End-of-life regulations	Residual materials management	<ul style="list-style-type: none"> ▶ Using the life cycle approach ▶ Ban on landfill and incineration sites ▶ Ban on waste exports
		Resource efficiency	<ul style="list-style-type: none"> ▶ Reuse and recycling ▶ Biodegradable materials processing ▶ Chemical fertilizer elimination/reduction ▶ Water management ▶ Extended producer responsibility (EPR)
	Environmental management	Industrial production	▶ Process, product and service improvements
		Hazardous substances	<ul style="list-style-type: none"> ▶ Reduction in use ▶ Increase in control
		Renewable resources	<ul style="list-style-type: none"> ▶ Increase in renewable energy sources ▶ Energy efficiency
	Standards	Ecodesign	▶ Setting minimum requirements
		Labelling	▶ Validation of product origin
		Standards	▶ Minimum quality guarantee
	Procurement policies	Public procurement	▶ Purchasing by government authorities based on responsible or green procurement policies
	Tax system	Tax measures	Residual materials management
Taxation			<ul style="list-style-type: none"> ▶ Landfill tax ▶ Ecotax (e.g. taxation of non-renewable resources)
Government support	Support and funding	Information	<ul style="list-style-type: none"> ▶ Determination of best practices ▶ Awareness building among stakeholders
		Funding	<ul style="list-style-type: none"> ▶ Direct funding ▶ Support in the search for funding ▶ Research and development support ▶ Waste exchange

Source: [Circular Economy in Quebec – Economic Opportunities and Impacts](#)
Figure 6.3. Levers to foster circular economy in Quebec

In *L'économie Circulaire Au Québec: Quelles Options Pour La Stratégie Gouvernementale En Développement Durable 2022-2027?* stakeholders validated these four priority areas. However, stakeholders also noted that a sectoral approach limits the implementation of CE across the entire value chain. Stakeholders propose three actions to implement a more cross-sectional approach:

1. Define cross-cutting objectives for the 4 sectors
2. Map materials flow between the sectors
3. Add waste management and recycling as the 5th sector

In addition to the four priority areas outlined above, the Circularity Gap Report for Québec suggests that the province could nearly triple its circularity index to 9.8% by implementing six scenarios and 37 strategies. The six preferred scenarios are:

- Integrate circularity into its goods;
- Prioritize responsible purchasing;
- Encourage sustainable and circular agriculture;
- Integrate circularity into public or government procurement processes;
- Manufacture in a circular way; and
- Transform its mobility.

These are additional areas of focus. The Gap Report also identifies a number of strengths in Québec's economy that point to a rapid increase in its performance within the next few years: access to clean, renewable energy; a skilled workforce; and a strong, structured network of circular economy partners.

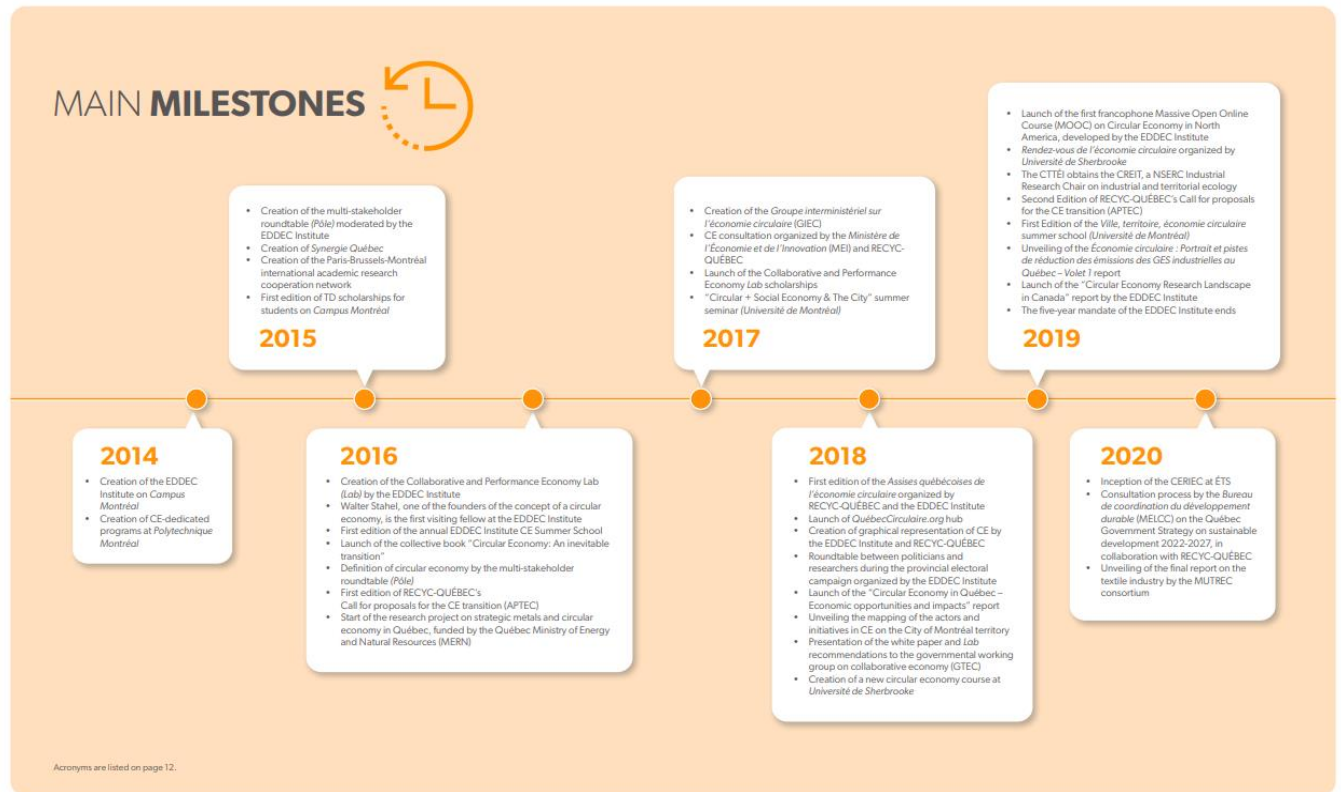
As a sign that Québec is on the right track, several government initiatives will contribute to improving performance in the short term: the 2019-2024 Québec Action Plan for Residual Materials Management, including major reforms to the deposit and selective collection systems, the Organic Matter Recovery Strategy, the 2030 Green Economy Plan and the Québec Plan for the Recovery of Critical and Strategic Minerals.

Implementation: Actions, Monitoring, and Evaluation Mechanisms

Additional details on the seven years of collaborative and consultative work done in Quebec can be found in [Transitioning to a Circular Economy – Learning from the Québec Experience 2014-2020](#). This is the most comprehensive Canadian report to date detailing the journey towards circularity in Quebec.

Insights for Canada

- Québec's approach of supporting collaborative networks among academia, private, and public sectors helped to build momentum through demonstration projects, research and dialogue.
- The Pôle Québécois de concertation sur l'économie circulaire, and the Inter-departmental Group on the Circular Economy (GIEC), comprised of a dozen government ministries and corporations / companies, ensures that a wide range of perspectives will be reflected in the forthcoming Quebec circular economy roadmap.
- Québec's Circularity Gap Report have provided benchmarking data and insights on strategic sectors and areas of focus to improve the province's circularity, improve long-term economic performance, and reduce its environmental impact.



Source: [Transitioning to a Circular Economy – Learning from the Québec Experience 2014-2020](#)
 Figure 6.4. Milestones in the evolution of Québec's circular economy.

Key Sources

- Conseil du patronat du Québec. Circular Economy in Quebec-Economic Opportunities and Impacts. <https://www.quebeccirculaire.org/data/sources/users/2401/docs/circular-economy-in-quebec-study.pdf>
- Québec Circulaire. Transitioning to a Circular Economy Learning from the Québec Experience. <https://www.quebeccirculaire.org/library/h/transitioning-to-a-circular-economy-learning-from-the-quebec-experience-2014-2020.html>
- Circle Economy (2021). The Circularity Gap Report Quebec. <https://www.recyq-quebec.gouv.qc.ca/sites/default/files/documents/rapport-indice-circularite-en.pdf>

Canadian Policy Framework: Pan-Canadian Framework on Clean Growth & Climate Change

Overview

[The Pan-Canadian Framework on Clean Growth and Climate Change](#) (PCF) is a high-level strategy developed with the provinces and territories and in consultation with indigenous communities. It was designed to meeting Canada's emission reductions targets, spur economic growth, and improve infrastructural resilience to climate change

The framework has four main pillars, including: pricing carbon pollution; complementary measures to further reduce emissions; measures to adapt the impacts of climate change and build resilience; and actions to accelerate innovation, technology, and job creation.

The First Ministers tasked four federal-provincial-territorial working groups, under the Vancouver Declaration, to consult Indigenous peoples, the public, and businesses, and to present opportunities to enable clean growth and combat climate change. Ministerial tables were set up to offer advice and provide feedback, including for the Ministers of Innovation, Ministers of Energy, the Canadian Council of Ministers of the Environment, and Ministers of Finance.

Rationale

The framework was designed to enable collaboration and action across Canadian jurisdictions to achieve Canada's 2030 GHG emissions reductions targets. The framework recognizes that climate change is critical and urgent, that the costs of inaction are greater than the costs of action, and that acting on climate change will reduce risks and create new economic opportunities and good jobs for Canadians. It aims to drive Canada's transition to a clean energy, low carbon future - including for homes, transportation, trade corridors, and businesses running on cleaner fuel - resulting in reduced GHG emissions, healthier communities, more resilient infrastructure, and resilience to climatic changes.

Development Approach

In 2015, at the Quebec Summit on Climate Change, provincial Premiers adopted a Declaration recognizing the need to limit global warming to less than 2°C and committed to adopting a long-term perspective to facilitate the achievement of emissions reduction targets. This formed the basis for the subsequent Vancouver Declaration, signed in March 2016 by Canada's First Ministers, which committed all jurisdictions to the establishment of A Pan-Canadian Framework for Clean Growth and Climate Change.

The First Ministers tasked four federal-provincial-territorial working groups, under the Vancouver Declaration, to consult Indigenous peoples, the public, and businesses, and to present opportunities to enable clean growth and combat climate change. Representatives of Indigenous Peoples contributed their knowledge and expectations for meaningful engagement in climate action and provided important considerations and recommendations either directly to working groups or to ministers, which helped shape this framework.

Ministerial tables were also set up to offer advice and provide feedback, including for the Ministers of Innovation, Ministers of Energy, the Canadian Council of Ministers of the Environment, and Ministers of Finance.

The Pan-Canadian Framework reaffirms principles from the Vancouver Declaration for collaborative efforts, recognizing the need for a science-based approach that recognizes the diversity of circumstances and perspectives across Canada and the need for complementary adaptation policies to build climate resilience.

Focus Areas and Targets

The *Pan-Canadian Framework* proposes actions in alignment with the four pillars and outlines many targets, some of which include:

1. Reducing GHG emissions by 30% below 2005 levels by 2030.
2. Increasing the percentage of Canada's electricity generated from renewable sources to 90%.
3. Reducing the amount of methane emissions from the oil and gas sector by 40-45% below 2012 levels by 2025.
4. Phasing out traditional coal-fired electricity by 2030.
5. Encouraging the use of electric and low-emitting vehicles, with the goal of having 10% of all light-duty vehicles in Canada be zero-emission by 2025 and 100% by 2040.
6. Becoming a leader in the development and deployment of clean technologies and the creation of a strong workforce in this industry.

The framework also outlines climate adaptation measures including investments in infrastructure and improved adaptation plans at each level of government throughout Canada.

In 2016, and reflected in the PCF, the federal government also committed to doubling its investments in clean energy research and technology development through the Global Mission Innovation Initiative. This initiative focused on reducing GHG emission, increasing energy security, as well as creating opportunities for sustainable economic growth through the creation of many new employment opportunities.

Stakeholder Engagement and Involvement

The main stakeholders in the Pan-Canadian framework are the federal, provincial, and territorial governments of Canada. Each level of government is involved in the implementation of the key actions outlined in the framework.

The federal government holds a leadership role in the coordination of the high-level approach and provides relevant support and guidance to the territories and provinces. The provincial and territorial governments meanwhile, are responsible for implementing the framework within their regions and ensuring they meet their emission reduction targets.

The federal government engaged various other, relevant stakeholders including; NGOS, indigenous communities, Canadian citizens, academia, and youth in the development of the framework. One example of an initiative the government launched to gather feedback and ideas from Canadians about how the

federal government should address climate change was the “Let’s Talk Climate Action” website. This was launched in 2016 for five months and garnered over 13 000 ideas.

Multiple levels of government and working groups also hosted various consultations on climate change and clean growth across Canada.

Implementation: Actions, Monitoring, and Evaluation Mechanisms

The 2016 PCF has been implemented through various policies and initiatives at the federal, provincial, and territorial levels. Annual reports have been published [synthesizing progress and challenges and help to inform future actions](#).

1. At the federal level, ambition has progressively increased on actions to reduce emissions. Following the introduction of a price on carbon (2019), the *Canadian Net-Zero Emissions Accountability Act (2021)* enshrined the Government of Canada’s commitment to achieve Net Zero by 2050, and subsequent plans building on the PCF include: *A Healthy Environment and a Healthy Economy (2020)*, *Canada’s National Adaptation Strategy: Building Resilient Communities and a Strong Economy (2022)*, and an updated *2030 Emissions Reduction Plan (ERP) (2022)*.

Each province and territory have implemented unique policies and initiatives to accomplish the goals of the framework. Some of these initiatives include, establishing carbon-pricing systems, investments in clean energy and infrastructure, and introducing regulations to reduce emissions.

The implementation process of the framework has been a collaborative effort including all levels of government as well as, the private sector, civil society, and Indigenous communities. The federal government reiterates through the pan-Canadian framework its commitment to indigenous communities and their efforts to work collaboratively. This is done through continuous communication and the recognition of rights and partnership consistent with the UN’s Declaration on the Rights of Indigenous Peoples.

The framework aims to ensure collaboration through implementation by engaging with multiple, relevant ministerial tables including the ministers’ of the environment, energy and mines, transportation, forestry, agriculture, innovation, infrastructure, emergency management, and finance.

Key Sources

- <https://www.canada.ca/en/services/environment/weather/climatechange/pan-canadian-framework.html>
- <https://scics.ca/en/product-produit/pan-canadian-framework-on-clean-growth-and-climate-change/>
- <https://www.pembina.org/pub/state-framework>
- <https://www.canada.ca/en/services/environment/weather/climatechange/pan-canadian-framework.html>

Canadian Policy Framework: Building a Nation of Innovators

Overview

"Building a Nation of Innovators" is a multi-year **Innovation and Skills Plan** developed to promote innovation and economic growth throughout the country. Released in 2019, the plan is made up of multiple initiatives that seek to foster collaboration and partnerships between industry, academia, and other organizations. The "Building Ecosystems: Science, Technology, and Superclusters" program is an example of one of these initiatives. As part of this program, "superclusters" can be defined as groupings of innovation-based companies that work together to develop new technologies, services, and products. The ultimate goal being to create job opportunities, increase competitiveness, and drive Canadian economic growth.

The Federal Government also supports small and medium enterprises through this policy with various funding and mentorship programs, tax credits for research, and the encouragement of entrepreneurship and innovation. The policy aims to foster collaboration between multiple sectors, levels of government, and academia, in order to expand innovation and support Canadian businesses in the global market.

Rationale

The plan recognizes innovation as a key driver of long-term economic growth and competitiveness in the global economy. Led by the federal government its stated aim is to make Canada a world-leading centre for innovation, to help create more, good, well-paying jobs, and help strengthen and grow the middle class. Programs under the Plan are meant to increase resilience to climate change, address workforce challenges due to an aging population, and safe-guard against global economic instability.

Development Approach

The *Building a Nation of Innovators* plan is federally led by the ministries and agencies responsible for economic growth and innovation. The Ministry of Innovation, Science, and Economic Development (ISED), the National Research Council (NRC), and the Canada Foundation for Innovation have been particularly instrumental.

The plan was viewed as a major redesign of the innovation policy landscape in Canada to invest in building a culture of innovation and a globally recognized brand for Canada as one of the most innovative and competitive countries in the world. By adopting an integrated approach, targeting challenges and opportunities at every stage of the innovation continuum, the plan emphasized partnerships, collaboration and the development of innovation ecosystems. This encourages greater connectivity between firms, researchers, educators, venture capitalists, incubators, all levels of government, non-profits, and other innovation actors. It embraces Canada's diversity, and fosters the participation of traditionally underrepresented groups, such as women and Indigenous people, in the innovation economy.

Development of the plan involved a combination of research and consultation with academia, industry experts, and other key stakeholders through multiple roundtables led by external innovation leaders from across the country. This was complemented by national online consultations and a social media portal

soliciting ideas from the public. Best practices and findings from other relevant countries were also explored in order to effectively identify strategies for fostering innovation at the federal level.

In 2017, the Government also created six Economic Strategy Tables to support innovation, competitiveness and economic growth across the following sectors: advanced manufacturing, agri-food, clean technology, digital industries, health/bio-sciences, and resources of the future. Their advice informed the Plan.

Focus Areas and Targets

The policy outlines multiple goals and targets that are intended to support innovation and economic growth. Some examples of these goals include:

- Increasing business research and development spending, support for the development of new products and services, and increasing competitiveness in the global marketplace.
- Supporting start-ups and small businesses through funding and job creation.
- Promoting science, technology, engineering, and math (STEM) education and training to help Canadians acquire the skills they need to succeed in a knowledge-based economy.
- Attracting and retaining top talent in Canada by developing programs that support the integration of foreign-born entrepreneurs and skilled workers.
- Supporting the development of “superclusters” in key sectors such as clean technology, advanced manufacturing, and digital industries.

Building a Nation of Innovators has four overarching themes or focus areas:

- People and Skills
- Building Ecosystems: Science, Technology, and Superclusters
- Investment, Scale-up, and Growing Companies
- Program Simplification and Reorganization

The *Building Ecosystems: Science, Technology, and Superclusters* theme encourages partnerships among companies, researchers, and other organizations in key sectors to develop new innovation ecosystems. Key programs and initiatives under the theme include:

- Innovation Superclusters Initiative
- Fundamental research
- Granting councils
- Science infrastructure
- National research council
- Intellectual Property Strategy and standardization

The boldest efforts to accomplish this are the Innovation Superclusters Initiative, which invested up to \$950 million in five industry-led supercluster to accelerate the growth and development of large scale business led [innovation](#). Superclusters are defined as geographically concentrated clusters of companies and organizations that work together to develop business models, technologies, services, and products, and to commercialize these activities.

Canada's five superclusters, rebranded as the Global Innovation Clusters program, include:

- **Digital Technology Cluster**, based in British Columbia, is focused on the potential of data;
- **Protein Industries**, based in the Prairie provinces, is increasing the value of key Canadian crops for plant-based meat alternatives and new food products;
- **Advanced Manufacturing**, based in Ontario, is focused on next-generation manufacturing capabilities, such as advanced robotics and 3D printing;
- **Scale AI**, based in Quebec, and spanning the Montreal-Waterloo corridor, is bringing the retail, manufacturing, transportation, infrastructure and information and communications technology (ICT) sectors together to build intelligent supply chains.
- **Ocean**, based in Atlantic Canada, is digitizing and optimizing industries operating in Canada's oceans

Stakeholder Engagement and Involvement

The *Building a Nation of Innovators* plan has a number of key stakeholders involved:

- **Businesses and industry leaders** - They are directly impacted by the policy's initiatives and programs and play a critical role in driving innovation and economic sustainability and growth.
- **Researchers and academics**. They provide the necessary expertise to develop and implement the policy as well as conduct the research that is critical to driving innovation.
- **Start-ups and small businesses**. These businesses will benefit from funding and support programs and play an important role in job creation and driving innovation.
- **Workers and employees**. Workers and employees will be directly impacted by key activities of the policy and will be trained and educated to acquire the skills necessary in the changing economy.
- **Investors**, including venture capitalists and angel investors, are key funders to helping drive innovation through supporting and expanding businesses.
- **Government ministries and departments**. The federal, provincial and territorial government ministries and departments are responsible for developing and implementing the policy.
- **The public**. The general public will ultimately benefit from a more innovative and competitive economy. Including women, indigenous communities, youth, and other traditionally underrepresented groups.

In 2018 the then Minister of Innovation, Science, and Innovation launched national consultations to understand how Canada can foster a data-driven digital economy. Consultations were conducted across the country including academics, NGOs, citizens, and other organizations. These conversations were focused specifically on the "future of work" - looking at new technologies and their impact on the workforce. "Unleashing Innovation" – exploring Canadian businesses' ability to remain competitive and adopt various data-driven technologies. And, finally, "privacy and trust" which focussed on ensuring the balance between innovation and protecting privacy interests was struck.

The federal government continues to encourage and help facilitate conversations between stakeholders on the opportunities and challenges at hand. In 2016 the various stakeholders listed above helped to shape the plan through their participation in multiple roundtables led by external innovation leaders across the country. National digital consultations and an online and other social media portal solicited the ideas of many stakeholders, especially the public.

Implementation: Actions, Monitoring, and Evaluation Mechanisms

The *Building a Nation of Innovators* Innovation and Skills Plan provides direction and a vision, which is implemented through various initiatives and programs. Monitoring and evaluation efforts are program-specific.

To support implementation, a horizontal review of business innovation and clean technology programs across the federal government was undertaken leading to a simplified and reorganized suite of programs. The plan launched a new, easy-to-navigate digital platform (innovation.canada.ca) and four flagship programs each targeting a different critical stage of firm growth. Innovation Canada offered a digital single window, accelerated growth service, and clean growth hub to support firms.

Key Sources

- https://ised-isde.canada.ca/site/innovation-better-canada/sites/default/files/attachments/New_ISEDC_19-044_INNOVATION-SKILLS_E_web.pdf
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