



The Panel developed a model to estimate the impact of circular approaches on the flow of materials in the Canadian economy. Four scenarios were considered to better understand the implications of advancing or not advancing a CE in Canada over the next 20 years. The scenarios include (1) no change in circular practices, (2) adopting the practices of the EU27, (3) adopting the practices of France as a leader in CE, and (4) adopting the practices of the EU27 combined with a net-zero greenhouse gas target for 2050.

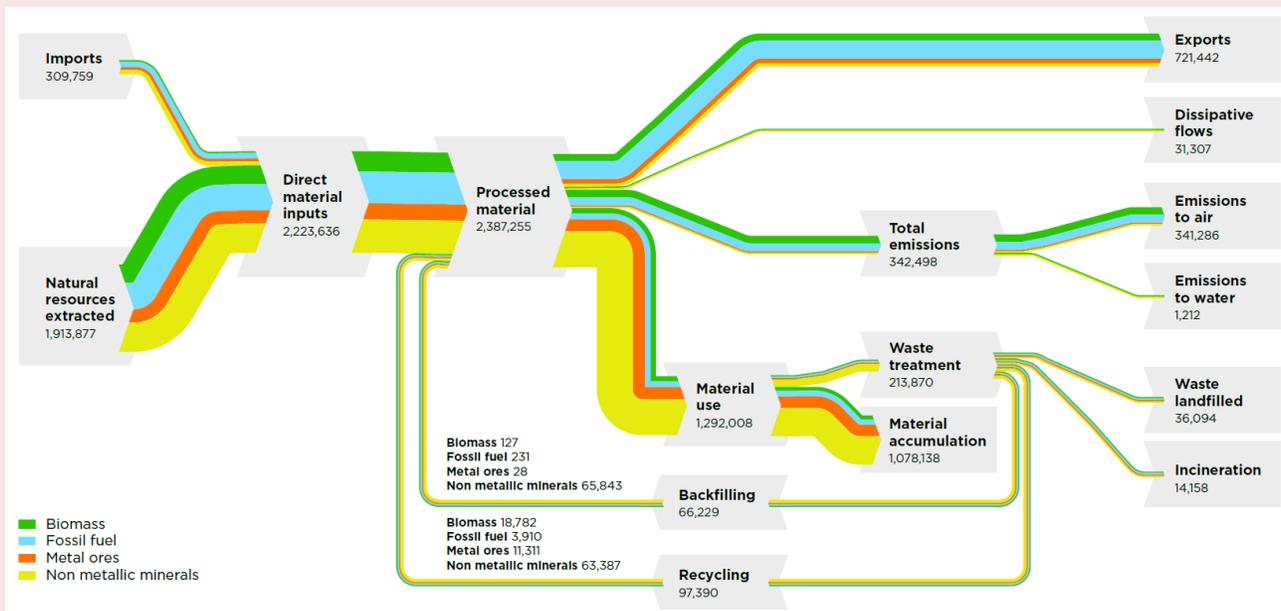
## CIRCULARITY SCENARIOS

The results of the four scenarios are illustrated using Sankey diagrams. See the **Turning Point** report for more details on the model input and assumptions. Scenarios 1 and 4 are presented below to illustrate the implications of not adopting CE approaches in the future and to highlight the implications of adopting a net-zero target on fossil fuels and metal ores.

### SCENARIO 1

#### THE BUSINESS-AS-USUAL (BAU) SCENARIO

- Canada's current pattern of material use and level of circularity (6.1%) continue for the next 20 years.

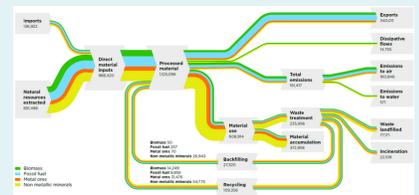


See p. 31 in **Turning Point** to view full scale model.

### SCENARIO 2

#### THE EU27 SCENARIO

- Canada transitions over 20 years to the average performance of the EU27 in 2017.
- Product durability, sharing, and production efficiency are set at a 30% increase.

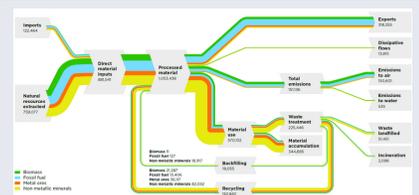


See p. 33 in **Turning Point** to view full scale model.

### SCENARIO 3

#### THE FRANCE SCENARIO

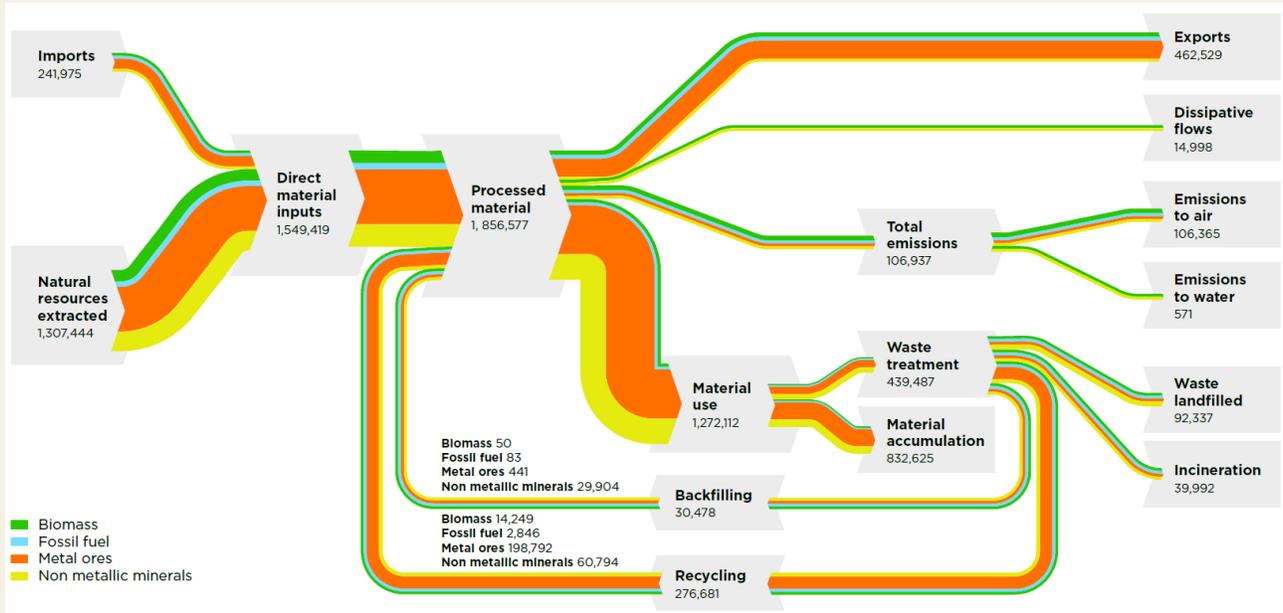
- Canada transitions to the performance of France (a CE leader) in 2017 over 20 years.
- Product durability, sharing, and production efficiency increase by 33% and recycling rate increases by 46%.



See p. 35 in **Turning Point** to view full scale model.

**THE EU27 + NET ZERO SCENARIO**

- Same as Scenario 2 with the addition of a net-zero target for GHG emissions in 2050.
- The replacement of energy derived from fossil fuels to meet a net-zero target implies an increase in metal ores needed to support the production of renewable energy.



See p. 37 in *Turning Point* to view full scale model.

**COMPARISON OF MODELLED CIRCULARITY SCENARIOS**

The results from these scenarios indicate that adopting circular approaches has the potential to substantially reduce waste production and requirements for new material; however, some of the targets will be challenging to achieve. In addition, none of the scenarios are designed to be ideal for Canada. Thus, the scenarios should be seen as an early attempt at scoping the effects of combined circular measures on material inputs and waste to and from the economy, as well as on the circularity of the Canadian economy overall.

The interactive SankeySim model for Canada that was developed by the Panel can be accessed here: <https://exchange.iseesystems.com/public/pe-tervictor/sankeysim/index.html#page1>

2020 CE rate in Canada:	Approach over 20 years:	2040 CE rate in Canada:	
6.1%	<b>Business-as-usual</b> Scenario 1	<b>6.1%</b>	→ 40% ↑ in total material inputs → 40% ↑ total wastes
	<b>EU27</b> Scenario 2	<b>14.4%</b>	→ 40% ↓ in total material inputs → 13% ↓ total wastes
	<b>France</b> Scenario 3	<b>21.3%</b>	→ 44% ↓ in total material inputs → 26% ↓ total wastes
	<b>EU27 + Net-zero</b> Scenario 4	<b>20.3%</b>	→ 2% ↓ in total material inputs → 27% ↓ total wastes