



Textiles Manufacturing

Pathways to a Competitive Low-Carbon Future

Sector Overview

NAICS Codes: 313 – Textile Mills and 314 – Textile Product Mills

The textile manufacturing sector transforms raw fibres into finished textile products used in apparel, furniture, medical textiles, protective gear, and construction materials. In Canada in 2024, the sector included approximately 850 businesses, employed over 13,800 people, and contributed about \$1.02 billion annually to GDP. [2] [3] [4] [5]

Energy Use & Emission Sources

GHG Emissions: 0.2 Mt CO₂eq (0.03% of Canada's emissions) [6]

While most textile manufacturers are not large emitters individually, energy use is dominated by process heat for drying, dyeing, finishing, heat-setting, and bonding. This heat is needed at relatively low temperatures and is usually delivered as steam or hot air from on-site natural gas or oil combustion, making it the largest source of direct emissions. Electricity drives the mechanical stages such as spinning, weaving, and knitting, along with motors, lighting, controls, and facility heating and cooling. Electricity emissions are indirect and depend on grid carbon intensity. Indirect emissions can be considerable depending on the product, particularly from fibre production, freight for inbound materials and outbound goods, waste, and employee travel.

Key Emission Sources & Decarbonization Actions

1

Thermal Manufacturing Processes

Direct Emissions     

Description

Dyeing, drying, heat-setting, bonding, finishing using fossil fuels (natural gas, oil, etc.) or electricity for heating and steam generation.

Key Actions

- » Electrify process heat using electric boilers or industrial heat pumps.
- » Optimize processes and heat recovery.

2

Facility Heating & Cooling

Direct & Indirect Emissions



Description

Space heating, water heating, HVAC systems using fossil fuels or electricity.

Key Actions

- » Replace fossil-fuel heating and cooling systems with electric heat pumps.
- » Reduce building energy demand with efficiency upgrades including improved insulation and building controls.

3

Transport & Shipping

Direct & Indirect Emissions



Description

Freight transport by trucks, ships, rail, and air using fossil fuels for inbound materials and outbound product distribution.

Key Actions

- » Electrify company-owned vehicles where feasible.
- » Optimize routes and loads.
- » Choose low-carbon freight modes and reduce reliance on air freight.

4

Fiber Lifecycle & Materials

Indirect Emissions



Description

Fibre production, material sourcing, and management of textile waste.

Key Actions

- » Use recycled or bio-based fibres from transparent and circular suppliers.
- » Design products for durability and recyclability.
- » Strengthen quality control to reduce defects.

5

Employee Travel & Commuting

Indirect Emissions



Description

Daily commuting and business travel by car, rail, or air.

Key Actions

- » Encourage public transit, walking and biking to facility.
- » Support electric vehicle adoption with on-site chargers.
- » Encourage remote work and virtual meetings.
- » Prioritize rail over air travel for short journeys.

Growth & Competitiveness Benefits

Market Growth

Transitioning to net-zero positions textile manufacturers to capture growing demand from construction, clean transportation, and other low-carbon sectors seeking high-performance, low-emissions materials. Firms that move early can access new markets and command premium pricing as buyers prioritize carbon performance alongside quality.

Brand Reputation & Leadership

Clear targets, third-party certifications, and transparent sourcing build trust with environmentally conscious customers and international partners. Net-zero strategies signal credibility, innovation, and future-readiness, thereby reinforcing brand value in a market increasingly sensitive to greenwashing risks.

Additional Resources

Textiles Manufacturing Net-Zero Primer →

See our full primer developed in collaboration with Environment and Climate Change Canada to get started.

GHG Protocol →

Guidance on calculating Scopes 1, 2, and 3 emissions and communicating results consistently.

ISO 14064 →

International standard to quantify, report, and verify GHG inventories by third parties.

Net-Zero Challenge →

Voluntary net-zero commitment program from the Government of Canada.