Phase II

Textile Transformation Nova Scotia

Part 3 of 3

End-Use Pathways Brief | Summary

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NACTR

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What should we do next?

WHERE SHOULD NOVA SCOTIA INVEST TO MAXIMIZE TEXTILE LANDFILL DIVERSION?

KEY BACKGROUND INFORMATION

The Time for Action is Now

A downstream rupture is underway across Nova Scotia: collection channels that previously moved surplus out of thrift stores have disappeared, and organizations have nowhere to send the overflow.

The landfill tipping fee is $135.50 per tonne in HRM

a growing cost for charities to bear, but cheaper than other options, making landfill the current default.

Halifax Regional Municipality, 2026

Textile waste is nearly 1/5 of NS's landfill composition

at 18% and rising, a dramatic increase from a decade ago.

Divert NS, 2023

Export markets are deteriorating

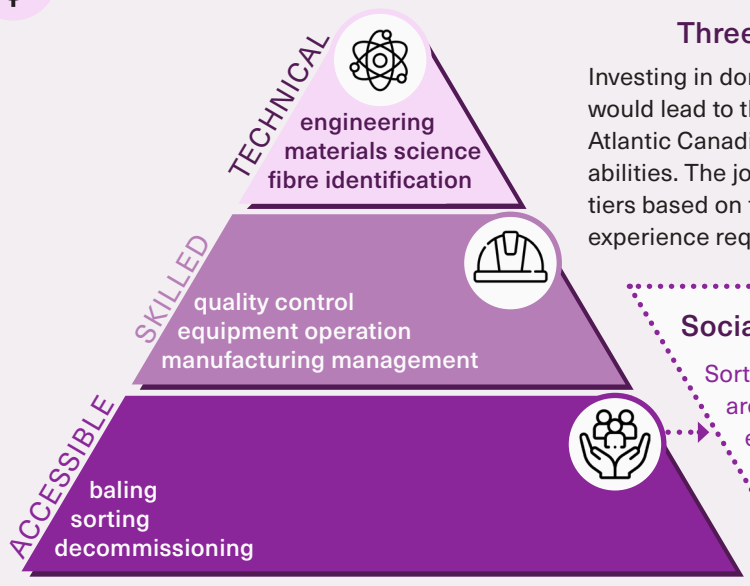
due to factors like geopolitical disruption and tighter import restrictions, causing a backlog.

Hussain et al., 2025; Shah, 2026

The Economic Case

Three Tiers of Job Creation

Investing in domestic sorting and recycling infrastructure would lead to the creation of essential new jobs for many Atlantic Canadians spanning a wide range of skills and abilities. The job paths can be categorized into three tiers based on the level of pre-existing knowledge or experience required: **accessible**, **skilled**, and **technical**.



Social Enterprise Potential

Sorting and decommissioning roles are well-suited to supported employment programs.

Nova Scotia's social enterprise ecosystem network could be integrated from the outset.

~100.6

average jobs per AFTeR member organization in Nova Scotia in 2020 – without any dedicated recycling infrastructure.

Genge, C., 2021

$1.43M

average annual wages per AFTeR member organization across Atlantic Canada in 2020.

Genge, C., 2021

$3.2B

projected value (CAD) of Canada's insulation market by 2033, supporting the near-term market case for denim insulation.

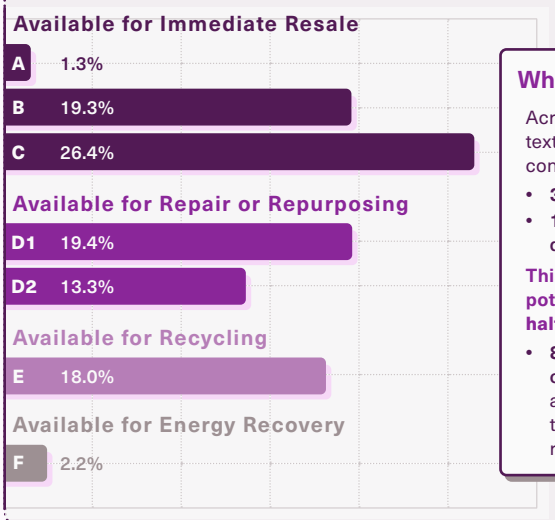
Grand View Research, 2025

What are the opportunities?

DEFINING THE POTENTIAL ALTERNATIVE PATHWAYS FOR TEXTILE WASTE

EXISTING RESOURCES

Nova Scotia is Not Starting from Scratch



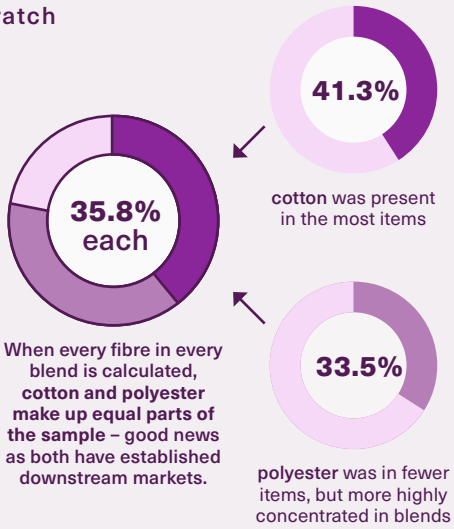
What are we working with?

Across a sample of 4,664 donated textiles, each item was graded for condition on a scale of A-F:

- **32.7%** had repair potential, and
- **18.0%** could be utilized for downstream recycling.

This means there is untapped potential revenue in more than half of the donated textiles.

- **84.8%** of all items contain only one or two fibre types, a relatively simple profile that improves sortability and recycling pathway compatibility.



When every fibre in every blend is calculated, **cotton and polyester make up equal parts of the sample – good news as both have established downstream markets.**

cotton was present in the most items

polyester was in fewer items, but more highly concentrated in blends

The Pathways



Nine end-use pathways were identified and assessed across six dimensions: **feedstock fit, capital cost, job creation, market demand, diversion potential,** and **implementation readiness.**

IMMEDIATE

OPP-1 Surplus Reuse Hub: Centralized sorting, aggregation, and redistribution of surplus textiles – **the essential first node.**

OPP-2 Industrial Rags: Cotton-rich textiles sorted into wiping cloths for industrial use – **already active in NS.**

NEAR-TERM

OPP-3 Technology-Enabled Sorting & Preprocessing: Shared infrastructure to prepare consistent feedstock for **all downstream markets.**

OPP-4 Recycled Denim Insulation: Mechanical processing of denim into acoustic/thermal insulation – **confirmed buyer interest from a Canadian manufacturer** of internal wall systems.

MEDIUM-TERM

OPP-5 Nonwoven Manufacturing: Materials for automotive, construction, appliance, and furniture applications; estimated **$8-10M capital investment.**

OPP-6 Textile-to-Textile Recycling | Mechanical: Sorted fibres respun into new yarns; high feedstock requirements – **NS role near-term is aggregation and preprocessing.**

OPP-7 Environmental Applications: Textile shred as pavement or soil reinforcement additive; char as soil amendment – **early-stage but promising** for blended streams.

LONG-TERM

OPP-8 Textile-to-Textile Recycling | Chemical: Chemical depolymerization into virgin-equivalent fibre; requires 60,000 tonnes annually – **NS role is feedstock aggregation** for external hubs.

OPP-9 Process Engineered Fuel | Residual Only: Energy recovery for contaminated or unrecyclable residuals – local demand unconfirmed; last resort only.

Where should Nova Scotia invest first?

CALLS TO ACTION AND RECOMMENDATIONS

INFRASTRUCTURE, POLICY, AND INVESTMENT WILL SET THINGS IN MOTION

The Material Exists and is Ready for the Next Steps

Governments & Funders

With collection networks, research partnerships, and confirmed market interest already in place, Nova Scotia is ready for investment.

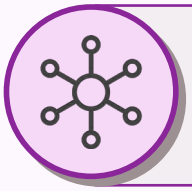
A surplus reuse hub and a denim insulation pilot are actionable now.

Industry & Investors

The feedstock is already here, and we know what kind of sorting and processing infrastructure is needed to utilize it.

A confirmed buyer is waiting for a Canadian supply chain.

Key Recommendations



Establish a provincial Reuse and Sorting Hub as the first-priority investment.
(MKT-1)



Launch a staged denim-to-insulation R&D initiative and pilot, supported by confirmed market demand.
(MKT-2)



Commission a provincial textile capacity and economic baseline study to support future investment decisions.
(MKT-3)



Introduce a green procurement policy that creates reliable domestic demand for recycled textile content.
(MKT-4)



Establish a textile value chain coordination body to set common grading standards, feedstock specifications, and matchmaking between producers and processors.
(MKT-5)



Advocate for and prepare for a mandatory provincial textile stewardship program, building the data and infrastructure above ahead of a future EPR framework.
(MKT-6)

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Environment and Climate Change Canada | Environnement et Changement climatique Canada

Textile Transformation Nova Scotia Phase II | Summaries

1 Waste Characterization Study

2 Donation Etiquette Analysis

3 End-Use Pathways Brief

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