CCES 2025 Session Summary

SME Showcase: Canada's Circular Economic Engine

Small and medium-sized enterprises (SMEs) are the backbone of Canada's economy. They contribute over 50% to the nation's GDP, employ most of our workforce, and act as critical innovation enablers. SMEs are also collectively responsible for a significant share of the country's carbon emissions and waste.

Canada's successful advancement to a circular economy will largely depend on the participation and strength of its SME sector. Resilient SMEs of the future will need to respond to market demands and regulatory pressures for low-carbon goods and services and reduce the risks and costs associated with business models built on linear supply chain models.

This session featured various Canadian SME leaders who successfully employ circular practices and deliver environmental value while growing market share and profitability. Delegates learned about innovators leveraging circularity to raise capital, mitigate risks and costs, and develop their competitive edge.

Date / Location Tuesday, April 15, 2025 | Montreal

Speakers

- **Andrew Telfer**, Director, Circular Innovation Council (moderator)
- Rashmi Prakash, CEO & Co-Founder, Aruna Revolution
- Rob Napoli, Chief Financial Officer, Cascadia Seaweed
- Mohika Tremblay, CEO, Tred'si
- Daniel Martinez, Co-Founder, Cyrc
- Barbara Campbell, Regional Director, Atlantic Canada, Natural Products Canada

SUMMARY

The SME Showcase at Canada's Circular Economy Summit spotlighted small- and medium-sized enterprises (SMEs) as the nation's circular economic engine. Representing over 98% of Canadian businesses, SMEs contribute over 50% of GDP and employ 88% of the private sector workforce. Critically, they are responsible for 39–45% of Canada's total greenhouse gas (GHG) emissions, underscoring their central role in meeting national net-zero targets.

Andrew hosted the session from the Circular Innovation Council, who emphasized that transitioning to a circular economy is essential, primarily since even a complete shift to renewable energy only addresses about 55% of global emissions. The remaining 45% must be tackled through circular approaches in food systems, manufacturing, service delivery, and land management. As such, engaging SMEs is vital to building a truly sustainable, circular economy in Canada.

The format combined short introductions with an open panel discussion and audience engagement. Participants were encouraged to share insights, questions, and success stories in a collaborative, informal setting, reflecting the Summit's belief that everyone in the room is a thought leader and change-maker.

The session also highlighted the importance of community, networks, and knowledge sharing to accelerate circular innovation across regions and sectors. With the support of emerging leaders like students and co-op participants, the future of circular SMEs in Canada looks promising.

Rashmi Prakash, Aruna Revolution

Rashmi Prakash, founder and CEO of Aruna Revolution, shared how her biomedical engineering background and frontline experience during the COVID-19 pandemic led her to tackle the immense waste problem in healthcare, particularly single-use products like face masks, diapers, and menstrual pads that pollute ecosystems and persist for centuries.

Motivated by a personal realization while using menstrual products, she began questioning why people must choose between individual well-being and the planet's health. Her research revealed that most disposable hygiene products are made from plastics, cotton, or bamboo, each posing sustainability issues. Cotton requires massive water use, bamboo processing involves toxic chemicals, and plastics result in long-lasting microplastic pollution.

Determined to find an alternative, Prakash began experimenting with natural fibers—starting with mycelium, then cardboard, and eventually agricultural waste. Her breakthrough came from extracting cellulose fibers from agricultural residues such as stems and leaves after harvesting grain. These are

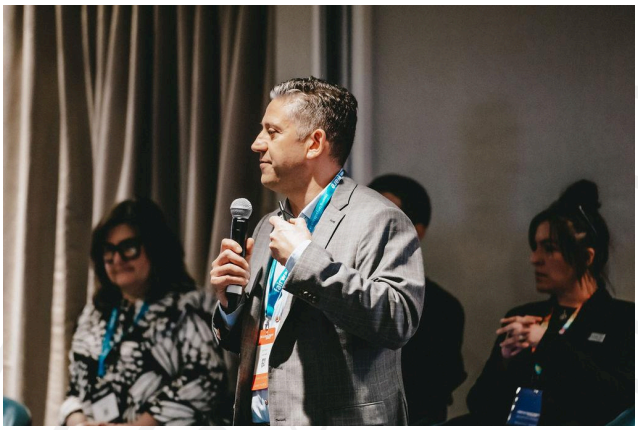
often overproduced and need to be removed from fields, making them a readily available, underutilized feedstock.

The result is a high-performance, compostable fiber that's 300% more absorbent than standard materials used in menstrual products. These fibers are made from agricultural by-products (not purpose-grown crops), involve no deforestation, plastic, or monocropping, and degrade in home, industrial, and marine environments. Aruna's process also removes heavy metals like lead and arsenic, which can be absorbed from the soil.

While Aruna is launching with compostable menstrual pads, demand rapidly expands to other sectors—diapers, incontinence products, hydroponics, cosmetics, and textiles. Their scalable, feedstock-flexible process can work with numerous plant materials.

Aruna's go-to-market strategy mirrors the "Intel Inside" or Gore-Tex model: Introduce branded products to build recognition, then scale through licensing partnerships with manufacturers to circularize hygiene products at an industry level. It targets a $211 billion global market with a better solution for both people and the planet.

Rob Napoli, Cascadia Seaweed



Rob Napoli, CFO of Cascadia Seaweed, introduced the five-year-old British Columbia-based company focused on using seaweed as a regenerative, sustainable biomass for agriculture, food systems, and climate solutions. Seaweed offers a rare advantage in sustainability—it grows in the ocean without requiring land, fresh water, or fertilizers. When farmed sustainably, it restores ocean ecosystems by absorbing excess nutrients like nitrogen and phosphorus from agricultural runoff.

Cascadia Seaweed operates ocean-based farms with five First Nations, who own the water tenures and farms. The company cultivates seed in a nursery, grows the seaweed in marine farms, and processes it into biostimulants and feed additives. They expect to grow from 1,000 to 1,500 tons next year.

Their core agricultural product—seaweed-based biostimulants—enhances crop resilience to weather-related stress like drought, helping crops reach their full yield potential. This is a critical advantage since over 50% of crop loss is due to weather. In trials, soybeans treated with their product saw a 21% increase in yield. Cascadia sells to farmers in California, Oregon, Washington, and the Midwest, covering crops from soybeans to almonds and tomatoes. Though biologicals currently hold only ~10% of the global fertilizer market, Cascadia is positioned to grow within this trend, especially as jurisdictions begin mandating chemical fertilizer reductions.

Another initiative in development is a bovine feed additive to reduce methane emissions from cows, which contribute ~5% of global carbon emissions. Early research aims to reduce methane output by adding 1–3% seaweed to bovine diets.

Cascadia offers nature-based solutions, applying its kelp expertise to projects like kelp forest restoration and biodiversity monitoring. Internationally, they're partnering with Plan International and Global Affairs Canada on a project in Kenya, helping women seaweed farmers adapt to climate change, improve yields, and enhance income through value-added processing.

Cascadia's model prioritizes impact-first outcomes—from ocean health and climate action to Indigenous economic participation—while maintaining a path to profitability. They are scaling a circular, regenerative business model rooted in Canadian waters and global partnerships by advancing seaweed as a versatile climate and agricultural solution.

Mohika Tremblay, Tred'si

Tred'si is a Quebec-based company specializing in wood salvage and recycling, specifically on utility poles. For over 27 years, Tred'si has operated under a fully circular business model, recovering and repurposing decommissioned utility poles to extend the life cycle of this valuable resource.

Canada has approximately 11 million utility poles, primarily made from pine (valued for its length, fast growth, and straightness) and Western Red Cedar (prized for its strength and natural durability). Each year, around 1.5% of these poles are removed—roughly 165,000 poles annually—typically due to safety upgrades or network maintenance.

Tred'si intercepts these discarded poles, diverting them from landfills and ensuring they are reintegrated into productive use. The company's process involves:

- Collecting and transporting removed poles
- Sorting and characterizing the wood
- Processing it for new uses

This approach supports carbon storage and maximizes material efficiency. Because wood naturally sequesters carbon, keeping it in circulation longer prevents premature carbon release. Each utility pole has a typical lifespan of 65 years. Through Tred'si's methods, much of the material can serve additional decades in secondary applications, such as landscaping, agriculture, or other construction uses.

The generational value of this circular process is emphasized: wood harvested when a grandfather was young may now be recycled for use during his grandson's lifetime, preserving natural resources, delaying the harvest of new trees, and contributing to forest regeneration and carbon sequestration goals.

Tred'si demonstrates that treated wood, often excluded from typical recycling streams due to its chemical content, can still have a productive second life. Their work addresses a significant waste management

challenge and support climate action by reducing emissions, prolonging carbon storage, and promoting circularity in a sector traditionally dependent on raw resource extraction.

Daniel Martinez, Cyrc

Daniel, co-founder of Cyrc, introduced the Montreal-based design company built on circularity, sustainability, and design-led innovation principles. Founded in 2021 with a designer partner, Cyrc's mission is to lead by example, creating beautiful, functional products while taking full responsibility for their entire life cycle.

Cyrc uses 3D printing as its core manufacturing method. This technology offers significant sustainability advantages: it's low-waste, energy-efficient, and product-agnostic, allowing flexible production with minimal environmental impact. From the start, Cyrc focused on creating home décor and furniture pieces, with plans to scale into larger public-use items.

One of Cyrc's key innovations is its closed-loop model. The company recycles its products, transforming them into new goods through an in-house recycling facility. Products are shredded, reprocessed into filament, and reprinted, creating a circular design process. This system ensures that nothing Cyrc produces ends as waste, addressing the startling fact that 0% of traditional furniture is recycled today.

Cyrc's early sales were through its website. Still, customer engagement at events revealed a surprising insight: people loved the feel and aesthetics of the products, often mistaking the material—recycled plastic—for ceramic or porcelain. This tactile and emotional connection helped shift perceptions around plastic and sparked strong interest from the hospitality and design-forward retail sectors.

Cyrc expanded its reach as awareness grew, partnering with 80 stores across North America and major museums. Their impact includes:

- Over 1,500 kg of plastic recycled
- More than 4,000 products sold
- Thousands of individuals were introduced to circular product design

Cyrc isn't just selling sustainable products—it's changing how people understand and interact with circularity. Their customers become advocates, recognizing the deeper value of materials, accountability, and regenerative design. By turning overlooked waste into lasting beauty, Cyrc is making circularity not just responsible, but desirable.

Barbara Campbell, Natural Products Canada

At the Circular Economy Summit, Natural Products Canada (NPC) showcased how bio-based innovations are crucial to advancing circularity across sectors—from agriculture and personal care to packaging, pet food, and construction materials. NPC supports SMEs developing circular, natural solutions, helping them scale through funding, investment, and strategic advice.

NPC is sector-agnostic but exclusively focuses on bio-based products—innovations that harness nature's regenerative capabilities. With a network of over 1,500 companies and five regional offices across Canada, NPC has invested in and supported 87 companies, contributing to 407 jobs and leveraging a 53x return on public investment. Their success led to the creation of Nadarra, a $20M arms-length private equity fund positioned to lead seed and series A investments for Canadian natural product ventures.

Circularity in Action: SME Highlights

1. Chinova Bioworks
   Upcycles white button mushroom stems into a natural food preservative called Chiber, reducing food waste and extending shelf life without artificial additives. When Chiber didn't work for some food categories, Chinova developed a second preservative derived from cranberry pomace—another upcycled input. Chiber is already in products like beer, bread, and granola bars; the cranberry product will target sauces, yogurts, and puddings.

2. Entosystem
   Uses black soldier fly larvae to convert food waste into high-protein animal feed and frass, a nutrient-rich organic fertilizer. Their circular model loops food waste into feed and fertilizer, reducing emissions and supporting regenerative agriculture. NPC supported Entosystem in hiring a CFO and conducting field trials to validate the frass product.

3. Pure Paint
   Tackles the microplastic crisis (50% of ocean microplastics come from paint) with a natural, plastic-free paint made from Canadian-grown flax, hemp, and sunflower oils. Their proprietary formulation offers vibrant colours and zero off-gassing, creating a safer and more sustainable alternative to synthetic paints.

4. Natures Crops
   A multinational company extracts oil from specialty seeds like Ahiflower. NPC helped them upcycle their seed cake byproduct, previously burned, into high-calcium horse treats and dog food supplements. This circular strategy has turned waste into profit, advancing their zero-waste goal without increasing costs.

These examples illustrate how circularity and profitability can coexist. NPC funds innovation and helps SMEs design systems that reclaim waste, reduce emissions, and add value across supply chains. Through storytelling and investment, NPC proves that bio-based circular solutions are possible and thriving.