



ALBERTA INNOVATES

AGRICULTURE AND ENVIRONMENT

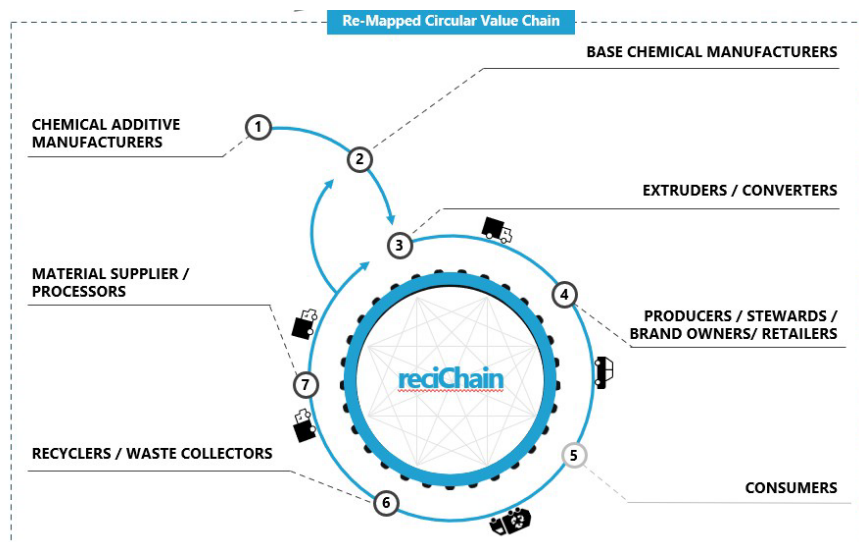
BIOINDUSTRIAL AND CIRCULAR INNOVATION

CIRCULAR ECONOMY

FUNDING DETAILS

Positioning Alberta as a World Leader in Plastics Circularity Through reciChain

ReciChain Canada is a technology-enabled, collaborative ecosystem among value chain players to enable plastics circularity by continuously tracking recyclable plastic products, and incentivizing participation including post-consumer recycled (PCR) content adoption through a credit marketplace. ReciChain's underline technologies are a blockchain-based digital twin and token/credit marketplace and a physical scanner, tracer and / or marker to follow plastic and key features (type of plastic, recycled content, or volume). It is expected that, with the successful scaling, this industry-wide platform will provide Alberta with a first mover advantage contributing to circular economy goals.



RECIPIENT:
Realize Inc.



PARTNERS:
NOVA Chemicals
BASF Canada Inc.
City of Edmonton
Merlin Plastics, among others



TOTAL BUDGET:
\$10,000,000



AI FUNDING:
\$2,000,000



PROJECT DATES:
MAR 2022 –
JUN 2025



PROJECT TRL:
Start: 5
End: 8

APPLICATION

By creating a consortium of stakeholders positioned along the value chain, the solution forces a move away from linear stakeholder engagement, where parties only communicate with their upstream or downstream partners, and instead encourages collaborative discussions and a differentiated amount of credits depending on relative stakeholder investment needed to participate. This will reduce barriers to communication, increase productivity, and encourage innovation.

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PROJECT GOALS

This industry-wide platform looks to unlock trapped value from non-recycled materials, set a global standard for EPR compliance opportunities, and build a circular, participant-led, and scalable solution to tackle four key plastics challenges:

1. Incentivizing the use of recycled materials and designing for recyclability
2. Improving the identification and tracking of plastic types for auditability
3. Improving the sorting of plastics by material type
4. Building circularity to involve the entire value chain

With an aim to incentivize all stakeholders across the plastics value chain to participate via earned 'digital credits', to extend the re-use potential of their products, reciChain can serve as a catalyst for the shift towards plastics circularity, incentivize design for recycling, increase the reuse of secondary plastics, divert more waste from landfill, and thereby generate associated benefits of lowered GHGs.

BENEFITS TO ALBERTA

- reciChain provides a unique value proposition for all stakeholder groups along the value chain. It is anticipated that, with a successful implementation, reciChain could support increase trust in procurement for supply and demand of PCR content in Alberta, support further brand loyalty for Alberta businesses, and support Extended Producer Responsibility programs in the province.
- It is expected that reciChain will generate an increase in plastic collection through greater demand and sorting accuracy. Through advance industrial scale sorting, reciChain will look to address the gap between collected and recycled material, caused by the inclusion of non-target materials (contamination or residuals), to generate higher quality PCR content. In addition, this shift would likely create more jobs due to higher engagement and increased volume of collected plastic for recycling.



Patent- licensing model for the plastics token marketplace & tracer/scanner technology



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Jobs creation due to higher engagement and increased volume of collected plastic



Creation of a blockchain enabled marketplace which 'tokenizes' the stored plastics data and assigns incentives



Collaboration with partners representing each step of the plastics value chain in Alberta



The transition to PCR content in plastic products is expected to reduce GHG emission

CURRENT STATUS

APRIL 2025 – In progress

Milestone 2 Delivered: Achieved key blockchain trial goals, confirming NIR 'Vision with Intelligence' technology despite data access challenges. TRL Progress: Advanced from TRL 5 to 7 for physical tracers. Milestone 3 in Progress: Focusing on designing and executing a consumer trial to integrate consumer behavior insights into the reciChain ecosystem.

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