



What the Heck Does Circular have to do with the Economy?

RCA RECYCLING COUNCIL
OF ALBERTA

zeroWASTE
NATIONAL ZERO WASTE COUNCIL



zeroWASTE
NATIONAL ZERO WASTE COUNCIL

Canada united in the achievement
of zero waste, now and for future
generations

CIRCULAR ECONOMY

FOOD

PRODUCT DESIGN &
PACKAGING

Linear Economy

The use of resources worldwide is outstripping supply



Image source
Terracycle

LINEAR ECONOMY

TAKE > MAKE > DISPOSE



WASTE

TECHNICAL & BIOLOGICAL
NUTRIENTS ALL MIXED UP



SOMETHING USEFUL

CIRCULAR ECONOMY

TECHNICAL
NUTRIENTS

BIOLOGICAL
NUTRIENTS

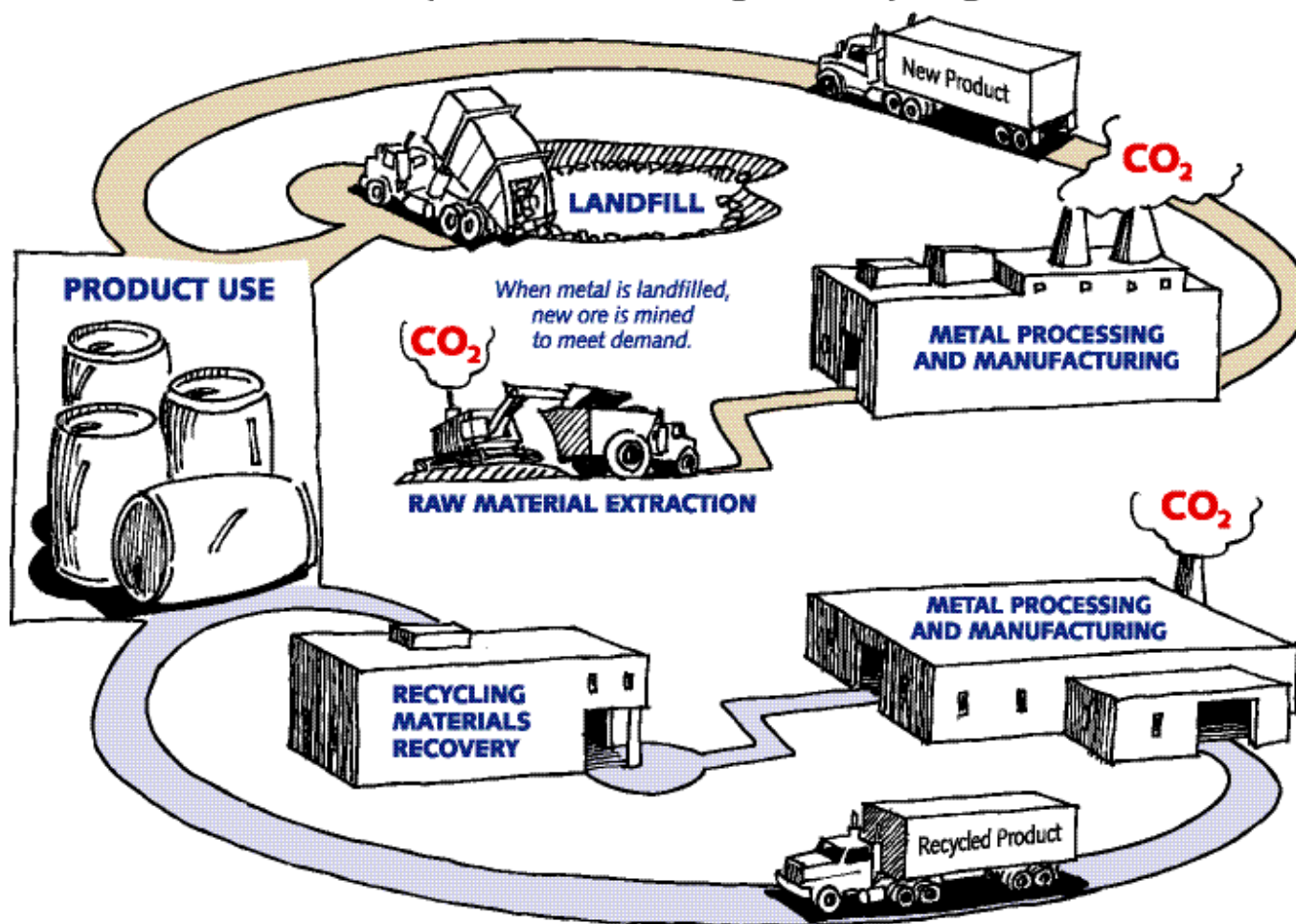


LIVING SYSTEMS

AFTER W McDONOUGH AND M BRAUNGART
www.ellenmacarthurfoundation.org

GHG Emissions for Metals

Life Cycles for Landfilling vs. Recycling





Circular Economy

- Keep products & materials at highest utility and value
- Prevent waste through new business models & improved design
- Lengthen product life through re-use, repair or remanufacture
- Improve end of life processing and recovery



THE WORLD STAGE

Scaling the Circular Economy

“Like all major transitions in human history, **the shift from a linear to a circular economy** will be a tumultuous one. It will feature pioneers and naysayers, victories and setbacks. But, if **businesses, governments, and consumers** each do their part, the evolution of innovative business models and closed-loop concepts like **remanufacturing, refurbishing and parts harvesting**, will put the global economy on a path of sustainable growth. Many years from now, people will look back on it as a revolution.”

Frans van Houten, CEO, Royal Philips
November 13, 2014

European Union

Ambitious Circular Economy Package

- Revised legislative proposals on waste
- Boost global competitiveness, foster sustainable economic growth and generate new jobs



Ontario

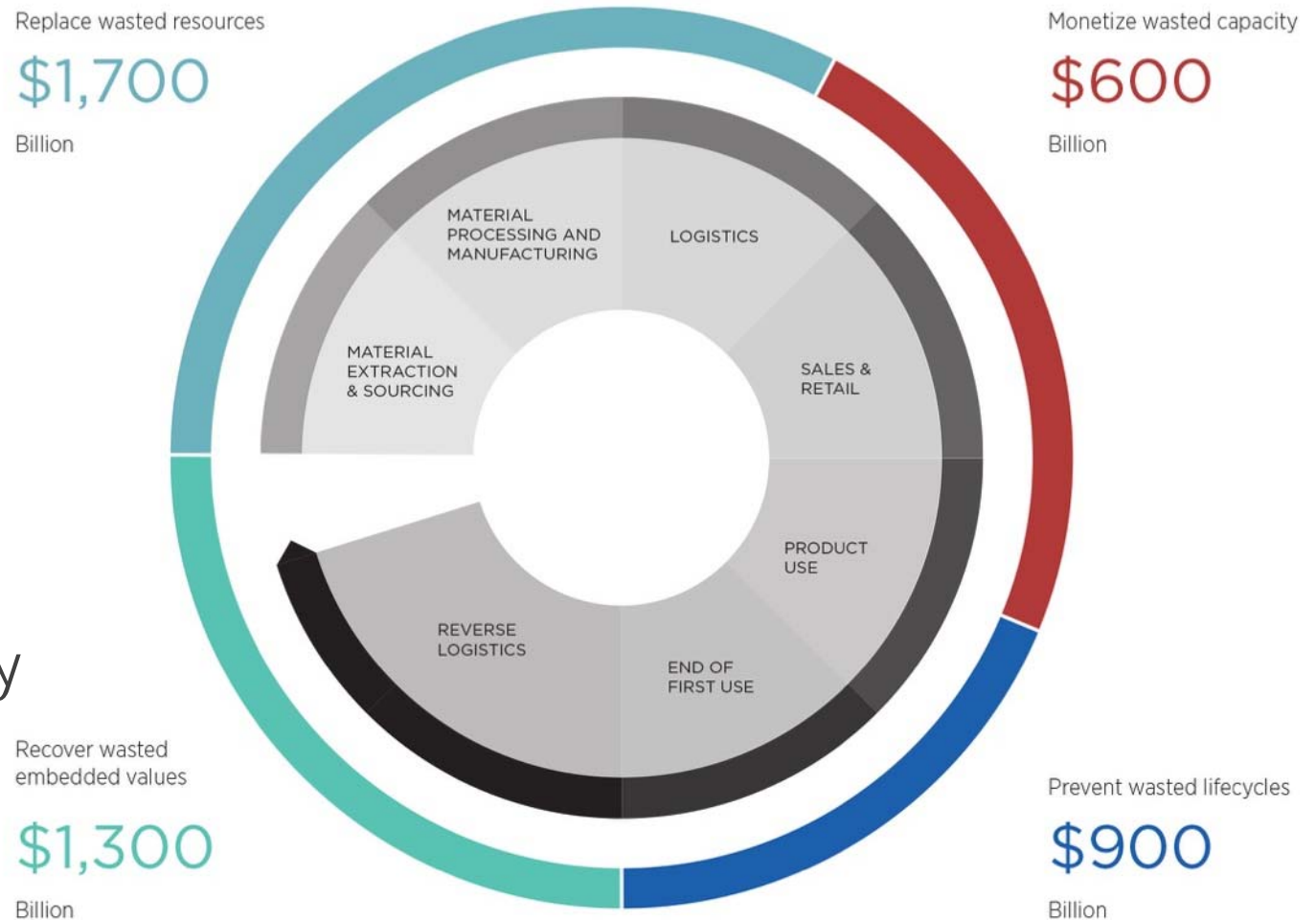
Strategy for a Waste Free Ontario: Building the Circular Economy

Reducing greenhouse gas emissions,
saving resources, creating jobs and
driving innovation

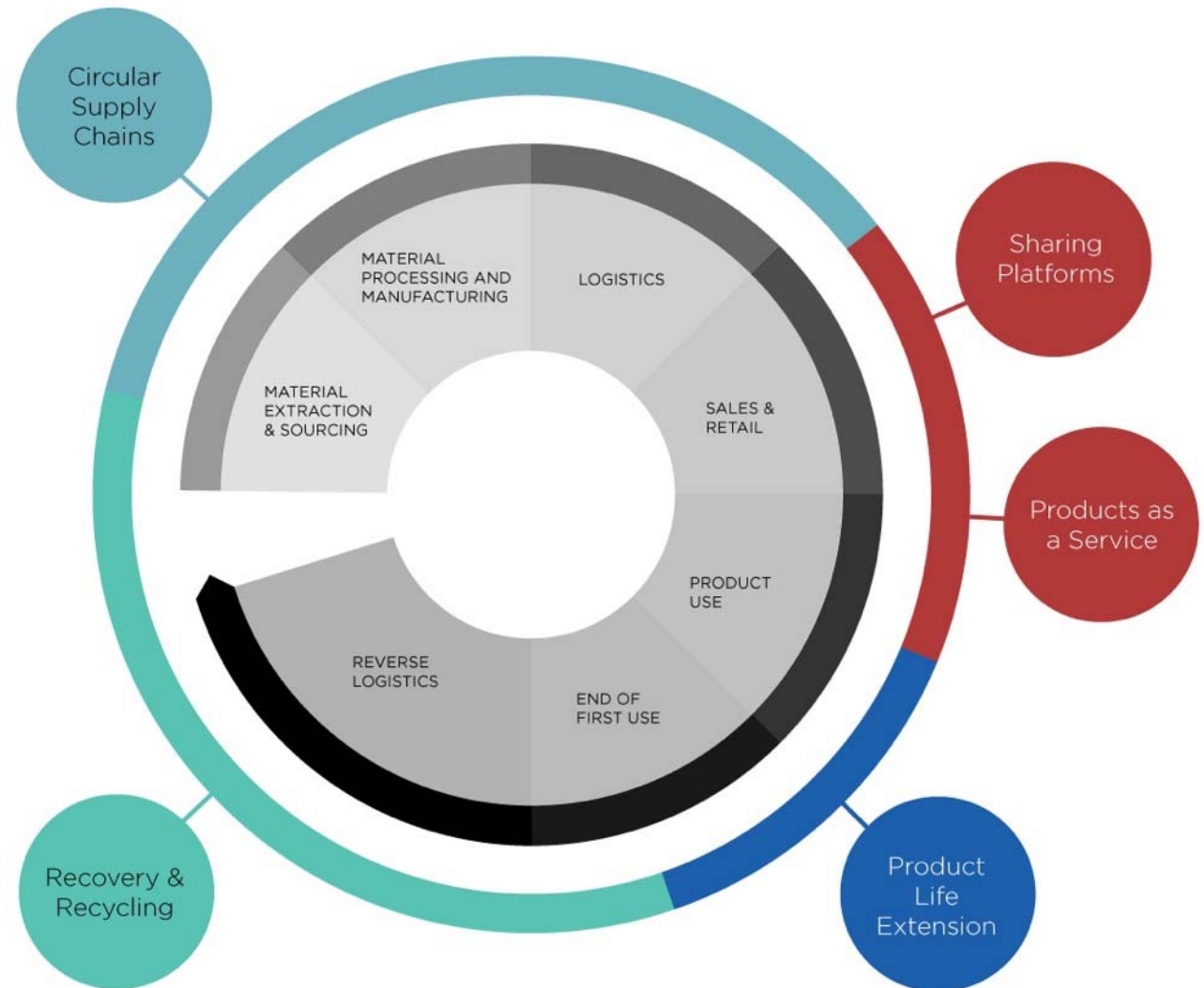


Growth potential to 2030 in four linear economy waste areas

Source: Accenture 2015



Business Model Transformation



Circular Supply Chain

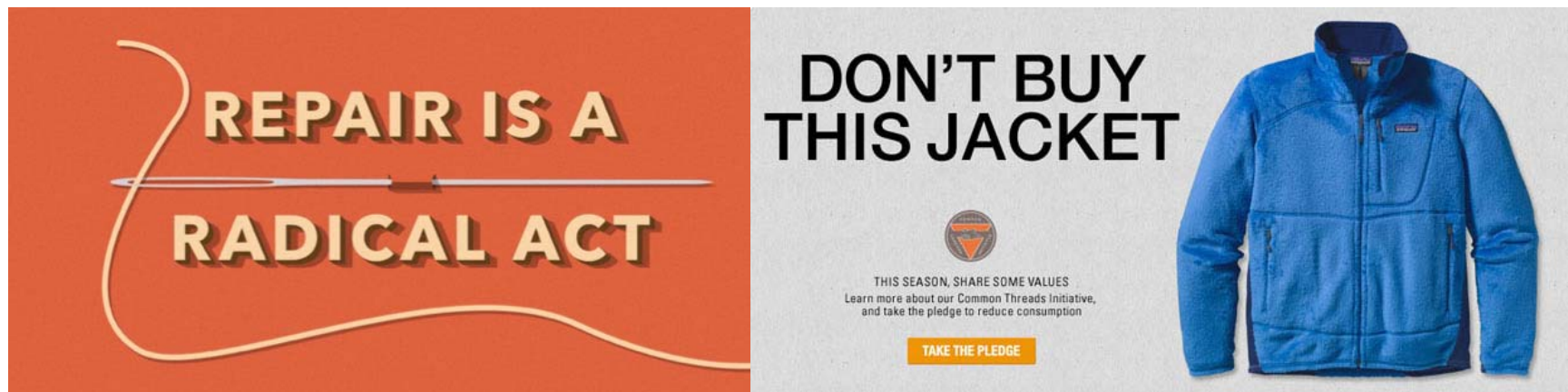


Closing
material loops

Regenerating
natural assets



Product Life Extension



One of the most responsible things we can do is to make high-quality stuff that lasts for years and can be repaired so you don't have to buy more of it.

– Rick Ridgeway, Patagonia

Product as a Service



Customer as user of a service, rather than consumer of a product (pay per use)

Sharing Platform

I do not need a drill.
I need a hole in the wall.



Source: www.torbenrick.euc

Recovery & Recycling



Organic – Enterra



Technical – Novelis

Circular Economy Business Toolkit

Focus on:



Business Strategy



Design Innovation



Stakeholder
Engagement

National Zero Waste Council
Circular Economy Business
Tool Kit



Steps to Starting
Your Circular
Journey



Design Innovation

Designing for circularity
means...

designing for many lifecycles and
users while optimizing the positive
environmental effects of the
materials used and minimizing or
eliminating the negative
environmental effects.

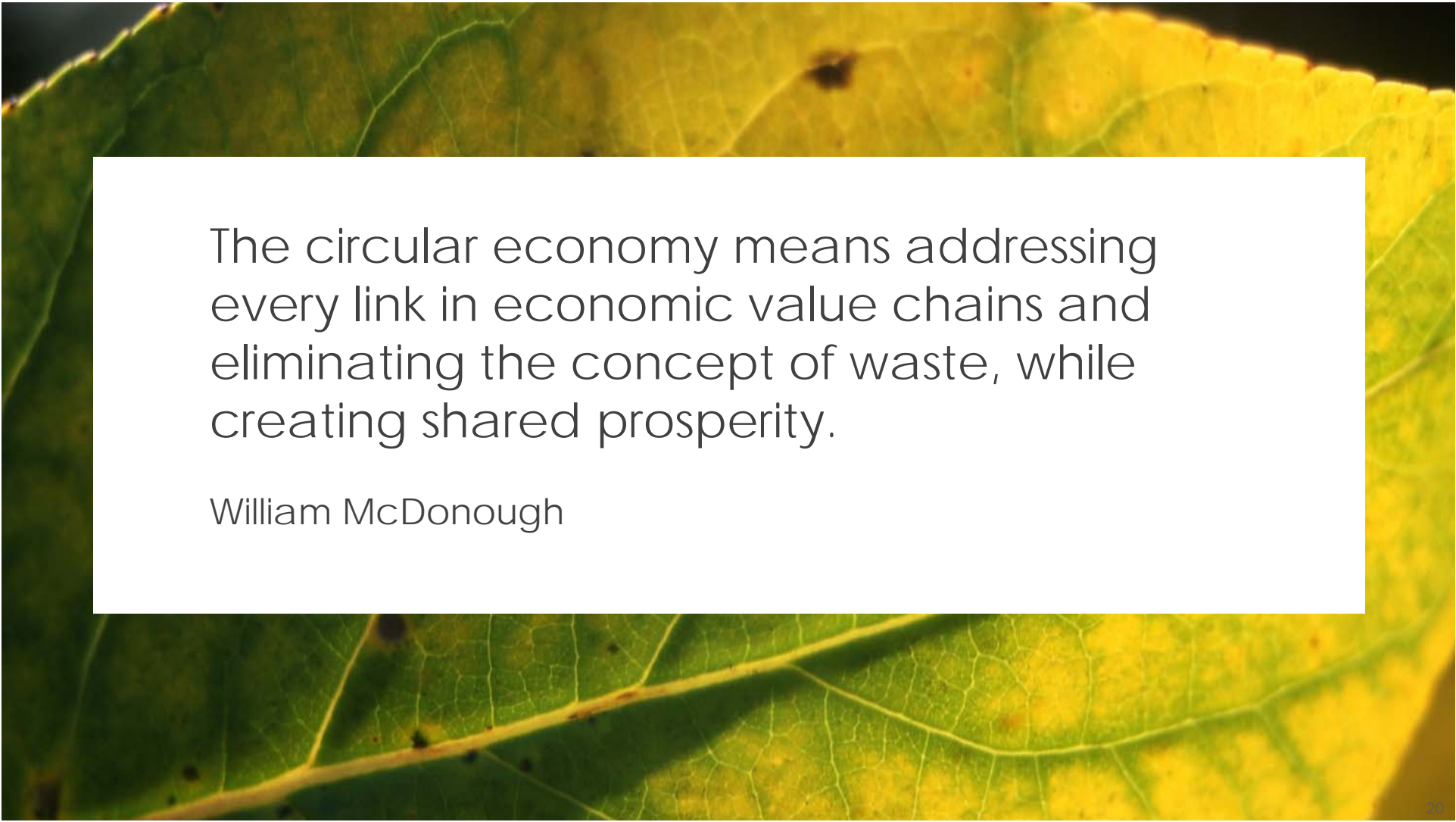


Design Principles

- Durability
- Customer attachment and trust
- Ease of maintenance and repair
- Adaptability and upgradability
- Disassembly and reassembly
- Reuse, remanufacturing and remarketing
- Recyclability



NZWC Design Portfolio Products



The circular economy means addressing every link in economic value chains and eliminating the concept of waste, while creating shared prosperity.

William McDonough

For More Information

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<http://www.nzwc.ca>

<http://recycle.ab.ca>

