



CIRCULAR ECONOMY AND GLASS PACKAGING IN ONTARIO

AMO 2019 ANNUAL CONFERENCE AUGUST 18 - 21, 2019

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O-I Brampton

- Ontario's only glass packaging manufacturer
 - Produces approximately 450 metric tonnes daily
 - Approximately \$75 million (CDN) annual operating costs
 - Approximately \$20 million in local economic impact
- 370 highly skilled employees including 325 unionized workers
 - Approximately \$30 million in salary and benefits
- Supplier to Ontario's food and beverage sector
 - Bacardi, Beam Global, Coca-Cola, Constellation Brands, Diageo, Hiram Walker, Labatt, Molson, Sleeman and Lassonde



Circular Economy Principles...

Glass is the perfect partner



THOUGHTFUL DESIGN

- REFILLABLES
- RIGHT-WEIGHTING



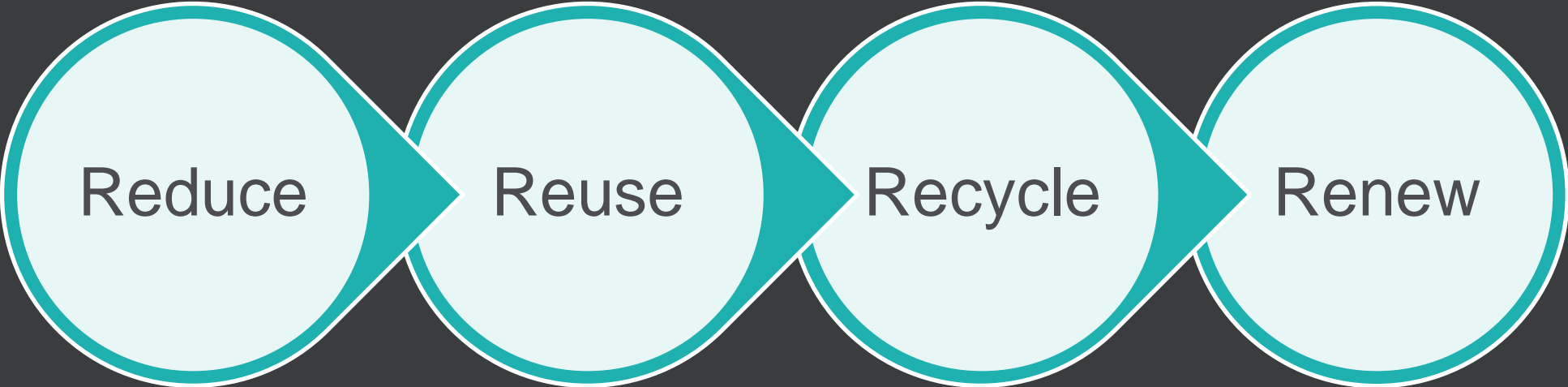
KEEP PRODUCTS AND MATERIALS IN USE

- REFILLABLES
- INFINITELY RECYCLABLE



REGENERATE NATURAL SYSTEMS

- WATER AND ENERGY
- RESPONSIBLE OPERATIONS



Reduce

Reuse

Recycle

Renew

Returnable
Rightweight
Efficiency

Returnable
Refillable

Increase availability
Increase use

Renewable energy
Bio-fuels



Reduce....

- Reducing carbon footprint through resource efficiency
- Advances in glass science and manufacturing processes in new R&D center at O-I
- Rightweighting reduces the need for raw materials and transport related GHG emissions
- O-I has reduced global GHG emissions by 24% from 2007 to 2017



Re-Use...

- Industry Standard Bottles beer (ISB)
 - Beer bottles collected at a rate of over 96 percent
 - Re-used from 12 to 15 times
- Re-using bottles
 - Most resource and energy efficient package in Ontario
 - Avoids production of about 151,684 tonnes of single-use glass bottles
 - Avoids 57,640 tonnes CO₂e associated with single-use glass
 - 10% of the carbon footprint of a standard one-way container



Recycle...

- The Beer Store and LCBO/ODRP deposit-refund systems
 - Beverage alcohol containers recycled in Ontario provide 90,000 tonnes of cullet to the market
- Brampton
 - ~ 50% average recycled content
 - Nearly 17,000 tonnes avoided emissions
- Blue box program
 - Mixed stream requiring investment in cleaning and color sorting



Recommendations

Ontario beverage alcohol deposit-refund systems are a critical to O-I competitiveness

- **Recommendation:** Ensure deposit-refund for beer and Ontario Deposit Refund Program are maintained to ensure reuse and high quality recycling of glass packaging

Aggressive recycling targets Under Extended Producer Responsibility (EPR) will reduces GHG emissions

- **Recommendation:** Non-deposit blue box glass cleaned and processed for container use

