



Infinitely Recyclable

HOW QLDC MAKES GLASS LAST AGAIN AND AGAIN

Glass is everywhere. But once we're done with it in our own homes or businesses, many wonder: where does our glass go?

Glass recycling is a multi-step process, with its final destination hundreds of kilometres north of our little part of the world. It's a long – yet, in the long run, environmentally-friendly – trip that means our glass lives to see another day.

Just last week the government endorsed the benefits of separate glass collections as a way to reduce contamination and recover more glass. No wonder why: when done correctly, glass is infinitely recyclable in New Zealand.

Last July, Queenstown Lakes District Council (QLDC) mixed it up with a new three-bin system, including a bin for glass only, rolled out to residents across the district. The purpose? To ensure glass bottles and jars could be separated from other recyclable material so it could be used again. The blue bin was reserved for clean recyclable glass, which means glass bottles and jars only. Every other form of glass still needed to be put in the rubbish bin, including window glass, broken wine and drinking glasses, Pyrex and other ovenware, mirror glass, and windscreen glass.

But why? Glass is glass, right?

Not so, QLDC Waste Project Officer Kath Buttar says.

"What many people don't realise is these other glass items all have a different chemical composition and melting temperature to bottles and jars, meaning they can't be easily processed together," she says."

"We work closely with onshore glass recovery specialists 5R Solutions and glass manufacturers O-I New Zealand who have incredibly strict quality requirements for the glass they accept for recycling. Being able to send our glass to O-I is a fantastic achievement, especially for such a small district, but it's important for our community to understand that contamination of our glass recycling puts the potential to reuse all this glass at risk."

Every piece of glass from a bottle or jar can be recycled again and again. Achieving this isn't just about providing a separate glass bin. The success of the process relies heavily on people using the bin correctly and keeping contamination out.

But what exactly is contamination and why does it matter?

When it comes to glass recycling, contamination is anything that isn't a clean glass bottle or jar that once contained food or drink. It's that simple. Some of the more common contaminants include non-recyclable glass items, food and liquid, bottle tops, rubbish and other recyclable materials meant for the yellow bin.

"It's really important to remember we all have a part to play in making glass recycling happen. Even the smallest amount of contamination can jeopardise our ability to recycle glass, so we need to make sure we are putting the right things in the right bins," Ms Buttar says.

Now that we've covered contamination, let's get back to what happens to the glass and how the recycling process works.

Once glass is picked up from the kerb it's taken to the glass bunkers at the local Material Recovery Facility (MRF) in Frankton, where any obvious contamination is manually rooted out by hand and the glass is cleared for dispatch.

"It's often forgotten that there are hardworking people sorting the items we're recycling. Using our bins correctly not only ensures we have the right glass to recycle, but it also makes the recycling crew's job a lot more pleasant," Ms Buttar says.

The next step in the process sees the glass heading across to the South Island's main glass aggregation hub, Christchurch's 5R Solutions, where it's given a further manual inspection before being consolidated for its big trip north to Auckland.

Shifting a product from Queenstown to Auckland may be a bit of a haul, but it actually works out to be more environmentally friendly overall: carbon costs are kept as low as possible by loading glass into containers and on to ships in Christchurch for the journey north, and creating glass bottles and jars from recycled glass requires a lot less energy than making them from scratch. In fact, for every 10% increase in recycled glass used in the production of new glass products, a 3% reduction in energy consumption and 5% reduction in carbon emissions is achieved.

Once arriving in Auckland the glass heads to the Visy beneficiation plant where metal bottle rings are removed, the glass is colour sorted and it is crushed into cullet ready for re-melting.

Then it's off to O-I (Owens Illinois) for the last step in the process. O-I is New Zealand's only glass bottle and



jar manufacturer and has been operating from its site in Penrose since 1922. The plant is open 24 hours a day, 365 days a year turning clean, recycled glass into brand new bottles at the startling rate of 85,000 containers an hour. We talked to Penny Garland, Visy Glass's Cullet Manager, about the benefits of glass packaging and recycling.

"As a form of packaging, glass is a favourite for both consumers and brands particularly because it has some obvious environmental advantages over other materials and can be recycled back into the same kind of item over and over. It's great to see local councils and communities showing a commitment to recycling and environmental issues. We have glass sent to us from councils all over New Zealand, including QLDC," she says.

"As glass is infinitely recyclable it's important to ensure it isn't treated as a single-use or disposable product destined to end up in a landfill. Here at O-I we turn clean recycled glass into new products, saving on waste and helping the environment. And by buying your products in glass and then recycling that bottle or jar you're supporting a sustainable, onshore circular economy."

In as little as 30 days a glass bottle can go from the recycling bin back to the store shelf.

The end process to turn recycled glass bottles and jars into brand new ones is fairly straightforward: along with sand, limestone and soda ash, recycled glass is sent to a furnace and, once there, melted at 1500C and turned into molten glass. Using recycled glass in this process reduces the amount of raw materials needed, with 1kg of recycled glass replacing 1.2kg of virgin raw materials.

Once it's removed from the furnace it's cooled, moulded into new shapes, strengthened and inspected. Then it's good to go for another round.



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It just goes to show that by taking a few simple steps – primarily by making sure you are only putting clean glass bottles and jars in the right bin – glass can keep on going forever, with minimal waste. O-I New Zealand

achieves an average recycled container content of 69% through its use of recycled glass or cullet.

Since last July over 3,000 tonnes of glass have been recycled out of our district. That's the equivalent weight of 30 blue whales or 15 Boeing 747s.

A new era of sustainability is rising and its reach is global

Growing concerns for the environment are seeing consumers more motivated to be environmentally conscious when it comes to their purchasing, and as one of the most sustainable packaging materials, this is where glass shines.

So next time you're taking those empties out to the recycling bin, take a few seconds to double check that your bin is in tip top shape so that as a district we can really harness the environmental benefits of infinite glass recyclability.

