
*Rethink Recycling's directors (L-R: Mat Card, Kym O'Shannassy, Tess Ellul, Jim Young) in front of RUSTIE. Photography: Rethink Recycling.*

# THE EVOLUTION OF PLASTICS AND THE CIRCULAR ECONOMY: RETHINK RECYCLING'S APPROACH

***By Kym O'Shannassy, CEO, Rethink Recycling.***

Plastic has been an integral part of modern life since its mass production began in the mid-20th century. It revolutionised industries, providing a lightweight, durable, and cost-effective alternative to traditional materials. However, the environmental cost of this convenience has been immense. Today, we face a plastic crisis, with millions of tonnes ending up in landfills and oceans each year. The solution lies in shifting from a linear 'take-make-dispose' model to a circular economy - one where resources are kept in use for as long as possible, waste is minimised, and materials are regenerated.

At *Rethink Recycling*, we embrace this shift by remanufacturing hard-to-recycle plastics into functional products, educating communities and inspiring future generations to think sustainably. Our education programs and innovative recycling technology offer students and educators a hands-on experience with the circular economy in action.

## THE ROLE OF EDUCATION IN THE CIRCULAR ECONOMY

Educators play a critical role in shaping the next generation's understanding of sustainability. That's why our programs are designed to engage students with real-world applications of the circular economy. Through interactive demonstrations and hands-on learning, we show students how plastic waste can be transformed into valuable resources rather than discarded.

Our mobile education hub, *RUSTIE* (Regenerative Up-cycling Solar-powered Trailer with Interactive Education), is a solar-powered trailer equipped with interactive micro-machines that allow students to witness the recycling process firsthand. Students can shred, extrude, and inject plastic waste into new products, reinforcing the principles of resource recovery and responsible consumption, promoting a generational change and shift in society and our relationship with plastics.

***Below:*** *RUSTIE set up at a sustainability festival, showing injection machines, back of hand shredder, and table.*
***Photography:*** *Rethink Recycling.*


## THE TECHNOLOGY WE USE

The success of our circular economy initiatives is largely due to the technology we employ. Our recycling setup includes three key machines:

**Shredder** – Breaks down plastic waste into small flakes, making it easier to process.

**Extruder** – Melts and reshapes plastic into filament or moulds for new products.

**Injector** – Uses melted plastic to create small, functional objects in custom moulds.

These machines are CE and RCM certified, ensuring they meet safety and compliance standards. By demonstrating these technologies in schools, we provide a tangible example of how discarded plastics can be repurposed, helping students and educators see the circular economy in action, giving value back to our perceived "waste".

At our *MakerSpace* in Springvale, we have additional machines that students and the public can come and use to trial their own product ideas. These machines include:

**Sheet Press** – creates large 1.2x1.2m sheet plastic that can be cut and worked with just like wood.

**Laser** – for cutting and engraving plastic.

## EMPOWERING SCHOOLS TO CLOSE THE LOOP

Schools are pivotal in fostering a culture of sustainability. Through our programs, we encourage schools to take a hands-on approach to waste management by:

- Giving value back to plastic by creating a new resource.
- Generating a circular environment by encouraging schools to collect plastic lids prior to our arrival so students take ownership of their "waste" and see the products it can be turned into.
- If schools would like to continue collecting lids after we leave, we would love them to do so. We offer them the option to purchase sheet plastic we have made from these lids for the students to use in their design and technology departments. This turns their waste into a product they are using after our visit - a lasting impact.

## CIRCULAR ECONOMY AND FUTURE EMPLOYMENT OPPORTUNITIES

The rise of the circular economy is creating new career pathways in sustainability, materials science, design, and engineering. As industries pivot towards regenerative models, there is increasing demand for professionals skilled in waste management, product design, and green innovation. Our programs introduce students to these emerging fields, inspiring them to consider sustainability as a viable career path.

***Above:*** *Students use the injectors to create small, functional objects in custom moulds.* ***Photography:*** *Rethink Recycling.*

## EDUCATION AND EMPOWERMENT ARE THE FUTURE

The transition to a circular economy is essential in addressing the plastic waste crisis, and education is at the heart of this transformation. Rethink Recycling is proud to be at the forefront of this movement, providing students and educators with the knowledge and tools to drive change. Through our hands-on programs and innovative recycling technology, we are not only rethinking plastics but also reshaping mindsets for a sustainable future.

We invite educators to join the journey by incorporating circular economy principles into their teaching, and empowering students to become the sustainability leaders of tomorrow.

Read more about Rethink Recycling via their website: *www.rethinkrecycling.org.au* or email them directly: *hello@rethinkrecycling.org.au.*