

Cairns

Smart Green

Economy



## CASE STUDY: CIRCULAR ECONOMY

# Materials Recovery Facility

## Cairns Regional Council

Cairns Regional Council is at the forefront of sustainability initiatives in Far North Queensland, exemplified by the newly upgraded Materials Recovery Facility (MRF).

As a crucial component of the Council's commitment to environmental stewardship, the MRF significantly enhances the region's ability to manage and recycle waste, reducing the environmental footprint and promoting a circular economy.

With a vision to be a leader in mitigating and adapting to the impacts of climate change, the Council has four key commitments:

1. Net zero emissions for Council
2. Council electricity supplied from renewable energy
3. Preparing the council and community
4. Support community progress

## IMPROVED RESOURCE RECOVERY AND CAPACITY

The upgraded Materials Recovery Facility, commissioned in 2021, is designed to handle up to 30,000 tonnes of recyclables annually. The facility incorporates state-of-the-art technology to sort and process various materials, including high-quality paper, cardboard, plastics, glass, steel, and aluminium.

The MRF upgrade also included the construction of a glass processing facility that allows the Council to recover as much as 10,000 tonnes of old glass each year.

The amount of rubbish sent to landfills today is less than a decade ago, during which time our population has grown by 17,000 people.



*"Our commitment to blending climate change adaptation and waste management is at the heart of our corporate plan. As guardians of two World Heritage natural wonders, we are dedicated to protecting these treasures for future generations. This MRF project is a testament to our dedication to sustainability and innovation."*

**Mayor Amy Eden, Cairns Regional Council**

## HOW IT WORKS

The project employs advanced technologies and sustainable practices:

**Optical sorting and AI systems:** The facility uses optical sorting and AI technology to identify and separate different materials with high precision. These systems can process up to 300 containers per minute, ensuring efficient and effective recycling.

**Glass processing facility:** The MRF includes a dedicated glass processing facility that recovers up to 10,000 tonnes of glass annually, transforming it into a sand substitute used for non-structural building applications within the region.

**Community engagement:** The Rediscovery Centre, part of the MRF, serves as a community education hub, welcoming up to 3,000 students annually. It provides a bird's-eye view of the recycling process and educates the public on the importance of proper waste management and recycling practices.

## WHY IT MATTERS

The Materials Recovery Facility offers numerous benefits to the Cairns region:

**Enhanced recycling capacity:** With the ability to manage up to 30,000 tonnes of recyclables annually, the MRF significantly increases the region's recycling capacity and efficiency.

**Environmental impact:** The facility helps divert substantial amounts of waste from landfills, reducing the environmental footprint and promoting sustainable waste management practices. The improved technology and processes have reduced contamination rates to less than 3%.

**Economic growth:** By transforming waste into valuable resources, the MRF supports the local economy and reduces the need to transport recyclables to facilities in South-East Queensland. This promotes a circular economy, where materials are continually repurposed and reused.

**Educational value:** The Rediscovery Centre plays a crucial role in educating the community, particularly young people, about the importance of recycling and sustainability, fostering a culture of environmental responsibility.

Cairns Regional Council's commitment to sustainability and innovation ensures that the region remains a leader in the circular economy, setting a benchmark for other councils to follow.



*"The MRF is effectively the home of recycling for the Cairns region. All the materials from residents' yellow-lid recycling bins are processed here. The upgraded facility boasts impressive technology, such as optical sorting and AI systems, which have significantly improved our resource recovery rates from 59% to 85% annually."*

**Scott Paterson, Waste Education Officer**  
Cairns Regional Council

# 30,000t

Annual recycling capacity

# 138

Fewer truckloads going to landfill each year

# 59% to 85%

Improved recovery rate

# 3,000 students

Visit the discovery centre annually

## SUPPORT THIS PROJECT

Please contact us to learn more about the Materials Recovery Facility or to get involved in Cairns Regional Council's sustainability initiatives.

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