

Cairns

Smart Green

Economy



CASE STUDY: CIRCULAR ECONOMY

TNQ Plastics Proposal

RDA TN

The global challenge of plastic waste is particularly acute in Cairns and Far North Queensland, where only 1.5% of plastics are recycled locally compared to the national average of 9.4%. To address this, the Regional Development Australia Tropical North (RDA TN) has initiated the TNQ Plastics project to develop a robust plastics recycling industry in the region.

This initiative, supported by federal, state, and local governments, seeks to transform Cairns and the wider Far North Queensland region into a model of sustainable waste management and circular economy practices. While feasibility studies show positive returns, this opportunity is waiting for a private investor to make it a reality.

5,500 TONNES OF PLASTIC

The TNQ Plastics project focuses on creating a recycling ecosystem that addresses the full lifecycle of plastics from collection to remanufacture. The project is designed to divert approximately 5,500 tonnes of plastic waste per year from landfills, increasing the regional recycling rate to 17.1%.

The introduction of a local plastic recycling facility would also significantly reduce embodied greenhouse gas emissions by 5,000 tCO²-e per year.

Plastic waste in Far North Queensland is currently sorted and transported to Brisbane for processing. Recycled products are then bought back to the region, incurring further freight costs and emissions.



“The TNQ Plastics project has delivered substantial work to help the private sector establish a recycling industry here in Far North Queensland. With support from the Queensland Recycling Modernisation Fund (QRMF), several recycling projects in the region are in development.

In addition, we’ve also produced a Replicable Pilot Template available on the RDA TN website. The template enables users to understand the feasibility of a recycling facility within an LGA or region based on plastic types and volumes.”

Sonja Johnson, Chief Executive Officer, RDA TN

HOW IT WORKS

The project employs a multi-faceted approach to recycling and waste management:

Collaborative engagement: RDA TN works with local councils, businesses, and community organizations to establish collection and processing infrastructure. This includes upgrading waste transfer stations and new collection points in remote areas using a hub and spoke model.

Feasibility studies: Extensive feasibility studies have been conducted to assess the viability of various recycling technologies and business models. These studies have shown that setting up a plastics recycling hub in FNQ is economically and environmentally viable.

Pilot programs: The project supports investors in setting up plastic recycling facilities, with co-contribution funding options available from time to time, from both Queensland and Australian governments.

Innovative solutions: The project focuses on recycling high-value plastics like PET and HDPE, commonly found in beverage and shampoo bottles. It also explores the potential of waste-to-energy solutions and the recycling of other plastics.

This integrated approach ensures that the project addresses the entire plastic waste lifecycle, providing economic and environmental benefits to the region.

WHY IT MATTERS

A plastic recycling facility within the Cairns and Far North Queensland region would provide a multitude of benefits:

Environmental impact: By recycling plastics locally, the project reduces the amount of waste sent to landfills and plastic pollution in waterways and coastlines, helping to protect local ecosystems and wildlife.

Economic growth: The recycling industry generates jobs and economic activity. For every 10,000 tonnes of waste recycled, 9.2 jobs are created compared to 2.8 jobs if the same amount of waste is sent to landfill.

Community development: The project supports community involvement in recycling efforts and sustainable practices. It also provides educational opportunities to raise awareness about the importance of recycling.

Leaders in innovation: The RDA TN's Replicable Pilot Template can be used to validate the feasibility of similar schemes in other regions.

The TNQ Plastics project aligns with global sustainability goals and is committed to environmental stewardship and economic resilience.



"We produce a lot of plastic bottles for our products. When bottles have imperfections caused by the blowing process, they can't be used and, therefore, become a waste product. While it is virgin plastic that hasn't been used and could be recycled to become a perfect PET bottle - but we have no way of capturing the plastic that could be recycled."

Beth Watson, Marketing – Mungalli Biodynamic

5,500

Tonnes of plastic waste diverted from landfill per year

1.5% to 17.1%

Increase the recycling rate from 1.5% to 17.5% in the Cairns region

5,000 tCO₂ -e

Reduction of greenhouse gas emissions

14%-25% IRR

Predicted investor returns

Cairns

Smart Green

Economy

RETURN ON INVESTMENT

The TNQ Plastics project presents a compelling case for investment with significant financial returns:

Economic impact: The facility is projected to deliver a net benefit to Queensland of \$50.6 million in Net Present Value (NPV) and a benefit-cost ratio (BCR) of 3.1.

Job creation: The project will create up to 83 full-time equivalent (FTE) direct and indirect jobs during construction and up to 6 FTE jobs during operation.

Investor returns: The potential return to investors is between 14% and 25% Internal Rate of Return (IRR), with a payback period of approximately 4 years.

Grant funding: The initiative has secured \$1.7 million in grant funding from the Queensland Recycling Modernisation Fund (QRMF), which attracted additional private sector contributions, totalling over \$1 million.

These financial metrics highlight the project's viability and attractiveness to investors looking to support sustainable development and achieve substantial returns.

REPLICABLE PILOT TEMPLATE

As part of this project, the RDA TN has produced a Replicable Pilot Template, which is freely available on their website.

The template allows councils, RDAs, and other economic development agencies to input data regarding the types and quantities of plastics, transportation distances, and demand for each type of plastic. This helps understand the feasibility of establishing a facility within the LGA or region.

PROJECT SUCCESS STORY

One of the successful proponents of the Queensland Recycling Modernisation Fund (QRMF) is a new plastics recycling plant in Mareeba. The plant helps prevent plastic in the banana industry from going to landfills. The wash plant pelletises the plastic bags used on banana farms so the material can be on-sold as recycled plastic.



"Just from two farms, we've collected over 100 tonnes in twelve months, so we know a lot of plastic is being used in the region. And it's not just banana bags, there's shrink wrapping, plastic straps, fertiliser bags, and the twine used to hold the banana trees up. It all adds up."

Marc Jackson, Director – Enviroplas Recycling

Disclaimer: This case study showcases an innovative approach in Cairns' Smart Green Economy. While this project is not owned by Cairns Regional Council, and the presentation of this case study does not imply Council endorsement, it is our aim to highlight some of the exciting initiatives in our region and inspire positive change within our community.

SUPPORT THIS PROJECT

The TNQ Plastics project presents a unique opportunity for investment in sustainable development. Governments, corporations, philanthropists, and individuals are invited to support this initiative, which not only addresses pressing environmental issues but also delivers significant social and economic benefits.

For more information visit
rdatropicalnorth.org.au

Cairns
Smart Green
Economy

