The future of transfer stations

Rethinking transfer stations for an energy recovery future

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Who are ARRC?

The Advanced Resource Recovery Centre Gold Coast or better known as ARRC, is a new resource recovery precinct that will turn the Gold Coast's waste into something useful.

Gold Coast's journey — from shrinking landfill capacity to a City-owned resource recovery precinct

1

The challenge

Diminishing landfill is a critical and common issue in SEQ and across Australia – the City's two landfills reach capacity within the mid-2030s

2

The reality

We cannot recycle our way out of this challenge, nor simply pass the problem to the next generation

3

The response

ARRC is a resource recovery precinct for the Gold Coast and SE Queensland – diverting waste from landfill and transforming it into resources, energy and opportunity

4

The structure

In 2025, the City established a controlled entity as a dedicated City-owned resource recovery business

What we’re delivering

Three facilities do the sorting - one for each of the city’s kerbside bins.

GREEN BIN

ARRC Organics

✓ Already operating

Acquired and operational. Planning is underway to expand capacity (currently 60,000+ tonnes p.a) and extend garden and food organics services to other local government areas, maximising diversion from landfill.

YELLOW BIN

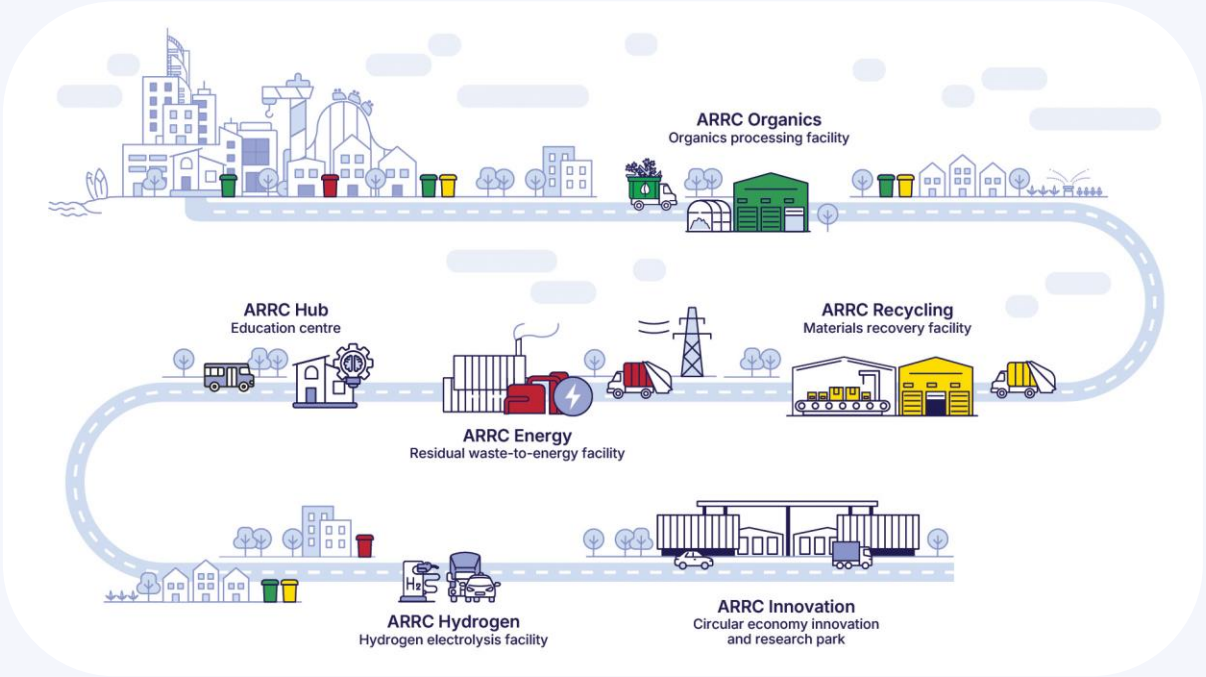
ARRC Recycling

Memorandum of Understanding with Visy Recycling to establish Australia's most advanced recycling and remanufacturing precinct.

RED BIN

ARRC Energy

Designed to process up to 700,000 tonnes per annum. Planning and environmental approvals are in final stages and the reference design is complete.



Three facilities planned to support the future of resource recovery

ARRC Hub
A space for the community to learn

ARRC Innovation
A place to test new ideas

ARRC Hydrogen
Cleaner fuel for the City’s trucks

Master planning for future needs

A precinct master planned to grow with the region’s waste needs

A regional precinct

A regional resource recovery precinct serving SEQ’s residual and recyclable waste streams

Open to industry

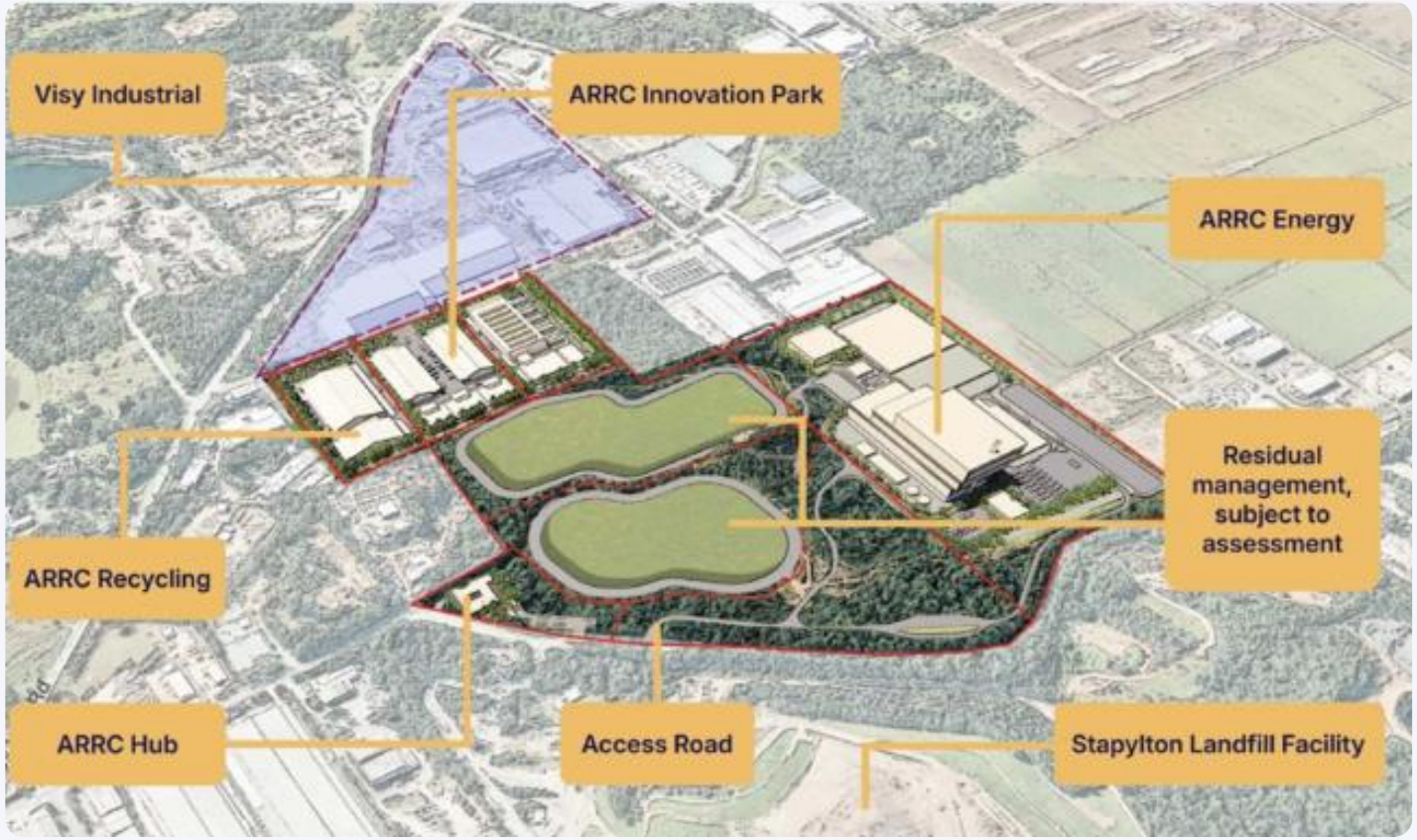
Open to industry partners with solutions for problematic and hard-to-treat streams

Staged growth

Industrial lots available to partners from mid 2028, with staged growth into the late 2030s

Co-location benefits

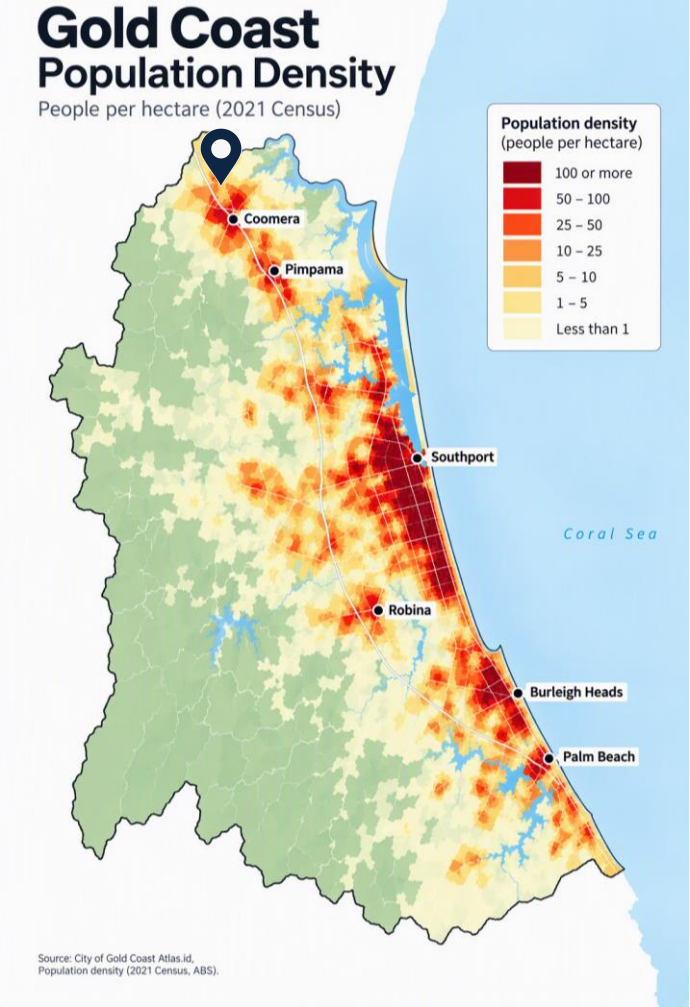
Co-location offers partners shared logistics, lower transport costs and process synergies



ARRC precinct in Stapylton

Why consider a transfer station?

Bulking waste closer to where it is collected



ARRC Precinct

1 Location shift

When the recovery precinct sits away from the population centre, the collection profile changes

2 Network pressure

Congestion and road network pressure make bulking essential to move waste efficiently to WtE

3 Productivity

Bulking wastes lifts productivity and reduces truck movements at the precinct and the WtE facility

4 Feedstock quality

Sanitising and homogenising streams before final disposal improves feedstock consistency

5 Redundancy

A transfer station builds redundancy for network disruption and emergency events

6 Complementary

Works with the public facing WRC's – not replacing them

From linear throughput to a strategic interface

THE LINEAR MODEL – NO LONGER FITS

Receive → **Consolidate** → **Compact** → **Transfer to landfill**

Traditional transfer station design – a holding point on the way to landfill. That linear model no longer fits a waste-to-energy and recovery future.

THE STRATEGIC INTERFACE

Collection → **Transfer station** → **Recovery & WtE**

Optimises logistics solutions and minimises truck movements across the LGA

Not a holding point – an active node in the circular economy, and the interface between collection, recovery and WtE

Allows for interfaces with commercial customers that traditionally used the landfill in this region, which will close in the mid 2030's

Sorting decisions and feedstock quality

At the point of transfer

Deliberate receival, inspection and separation – four decisions made every time waste arrives

Recover	Materials with viable markets diverted to processing pathways
Energy recovery	Residuals meeting WtE specification and calorific requirements
Alternative processing	Problematic or hard-to-treat streams routed to partners
Disposal	Only what genuinely remains appropriate for landfill

Contamination control and quality assurance make these calls repeatable, not ad hoc

The logistics and fleet shift

New destinations

New destinations reshape transport routes, payloads and storage requirements

Different risks

Current fleets are built for landfill faces – WtE brings different risks and priorities

Unloading

Unloading at different end facilities may require different configurations

Changing economics

Rising prime mover and trailer costs change the economics of moving waste

Shared fleet

Configurations that allow trailers to be shared across the wider fleet

Interconnected assets

Potential for stations as interconnected assets, servicing each other during disruption or peak demand

A practical framework for the sector

Plan as a network

Plan transfer stations as network assets, not standalone sites – work with existing assets

Design for quality

Design for feedstock quality from day one – retrofitting separation is costly

First decision point

Treat the transfer station as the first decision point in the circular economy

Align logistics

Align logistics with the destination, not the historical landfill

Build in redundancy

Build in redundancy so facilities can service each other during disruption

Transfer stations are no longer just a waypoint.

When designed well, they become the strategic interface that secures feedstock quality, fleet efficiency and the sector's circular future.

Thank you.

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