



Government White paper

RegenAqua: Unlocking Housing,
Protecting the Reef, and
Reducing Costs for
Local Government

Executive Summary

Executive Summary

Australia faces three interconnected challenges:

Housing supply bottlenecks caused by wastewater capacity constraints.
Great Barrier Reef (GBR) water quality pressures from nutrient runoff.
Financial strain on councils and utilities facing rising infrastructure costs.

Pacific Bio's RegenAqua technology, proven at scale through the Burdekin Wastewater Bioremediation Facility, directly addresses these challenges. RegenAqua uses native macroalgae to purify wastewater, cutting tertiary wastewater treatment costs by up to 75%, reducing energy use by 80%, and removing more than 80% of nitrogen and 90% of phosphorus from effluent.

The result is cleaner water, lower emissions, and wastewater infrastructure that supports new housing while protecting the Reef.

Alignment with Government Priorities

Housing Supply: Queensland has committed to 1 million new homes by 2044, with wastewater treatment infrastructure identified as a critical enabler.

Residential Activation Fund (RAF): RegenAqua projects are readily deployable wastewater solutions that unlock housing supply.

Reef Protection: Both Federal and State Governments have committed \$4.4 billion to Reef water quality programs, with UNESCO expected to reconsider an "in danger" listing in 2026.

Reef 2050 Water Quality Plan: RegenAqua directly contributes to nitrogen and phosphorus reduction targets.

Council Viability: Regional councils face rising infrastructure renewal costs with limited ratepayer bases. Wastewater plants are among the most expensive assets to upgrade or replace.

Local Government Financial Reform: Lower-cost infrastructure reduces long-term liabilities for councils.

Beyond water, RegenAqua delivers a new domestic supply chain for biofuels — aligning with the Sovereign Industrial Development Fund (SIDF) mandate to develop strategic industries and strengthen Queensland's energy security.

The Solution

Introducing RegenAqua

RegenAqua is a tertiary wastewater treatment system that integrates seamlessly with existing secondary treatment plants.

Key Benefits:

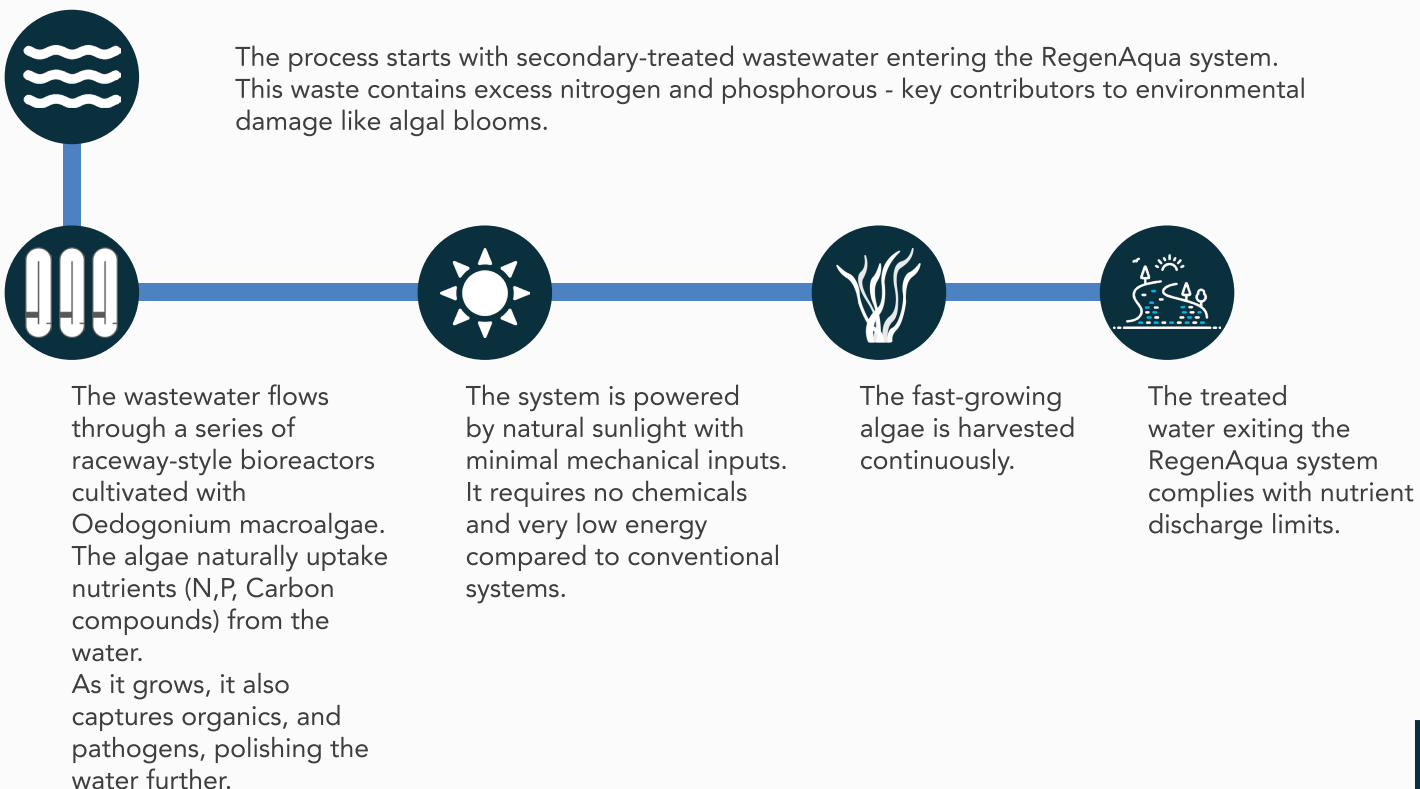
Housing Growth: By freeing up wastewater treatment capacity, RegenAqua has already enabled over 3,500 new dwellings in Burdekin

Reef Protection: Achieved 40%+ reductions in dissolved inorganic nitrogen and significant phosphorus reductions at scale

Lower Costs: RegenAqua is 60% cheaper to build and up to 75% cheaper to operate than conventional upgrades

Carbon Neutral: Captures 50 tCO₂ per hectare per year, with a circular economy model converting algae biomass into biofuels and agricultural inputs

The RegenAqua Process



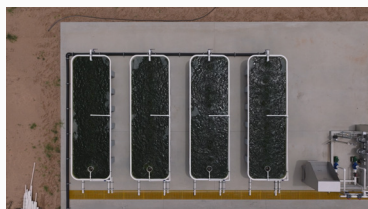


Burdekin Shire Council
RegenAqua Facility
Ayr, North Queensland

Case Study

The RegenAqua Burdekin Site represents a world-first in macroalgal bioremediation, delivering an innovative, nature-based wastewater treatment solution at a commercial scale.

With Commercial Operation Date (COD) now complete, this facility is a proof-of-concept for industries and municipalities looking to enhance water quality, reduce nutrient discharge, and improve environmental sustainability.



Site Details

Scale: 3.3 hectares of macroalgal bioreactors.

Capacity: Treats 2.4 ML/day wastewater.

Timeline: Delivered in just 12 months.

Impact:

Nutrient reduction: Up to 90% cut in nitrogen and phosphorus loads

Housing enabled: 3,500+ dwellings unlocked

Cost savings: 70% lower CapEx compared to conventional upgrades

Community outcomes: Cleaner waterways, enhanced recreation, and protection of fisheries and tourism.

Pathways for Government Partnership

A problem shared is a problem solved

Funding Support

RAF Round 2 (late 2025): Co-funding council-led projects.
Reef Trust & Urban Technology Innovation Fund: Innovative water management pilots.
SIDF: Support for biofuel pathways from harvested biomass.

Policy Integration

Confirm macroalgal bioremediation as enabling wastewater treatment infrastructure in housing delivery programs.
Recognise macroalgal bioremediation as an eligible Reef Credit generator under existing environmental credit frameworks.

Scalable Rollout

Initial focus on Tier 1 sites (Ingham, Condon, Palm Island, Charters Towers, Home Hill, Picnic Bay).
Portfolio approach to deliver multiple projects across Queensland to help achieve the target for 1 million extra homes by 2044.

Funding Pathways

A team of financial and technical experts is developing a dedicated infrastructure funding model to ensure RegenAqua projects are delivered with strong and sustainable investment foundations. The approach is expected to draw on a mix of Local Government and State Government funding, Federal Government support, non-regulated revenue streams, and grant programs, complemented by the generation of Reef Credits as an innovative financing mechanism. This blended model will provide councils and governments with cost-effective, sustainable options to deliver critical wastewater infrastructure.

Delivery can be structured through flexible BOOT (Build–Own–Operate–Transfer) or DBOM (Design–Build–Operate–Maintain) models, ensuring councils and governments have cost-effective, sustainable options to deliver critical wastewater infrastructure.

● Conclusion

RegenAqua represents a world-first Australian innovation delivering triple outcomes:

Unlocking housing supply,
Protecting the Great Barrier Reef,
and
Reducing costs for local government.

With strong alignment to state and federal policy priorities, RegenAqua is ready to scale. We invite government to partner with Pacific Bio to deploy this technology across priority regions—ensuring clean water, thriving communities, and a sustainable future.

The future of wastewater is here.

Circular innovation for Cleaner
Water. Healthier Soils. Greener
Energy and Smarter Data Centres.

Connect with us to learn more...