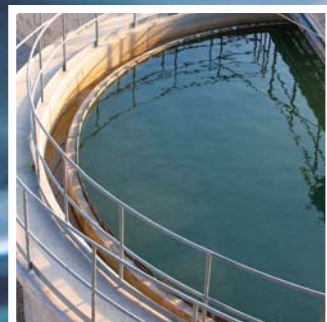
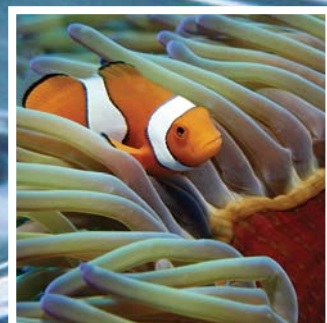


Clean Water

Integrating microalgae technologies for the improvement of water quality



Centre for
Solar Biotechnology



The initiative

Microalgae treated agricultural runoff can help to protect the Great Barrier Reef (Image courtesy of Tourism & Events Queensland).



VISION

The Clean Water initiative is designed to advance solar powered green technologies based on microalgae to purify water.



Microalgae water purification systems are designed to capture environmental pollutants and recycle valuable resources.

This will improve the sustainability and viability of agricultural, livestock, mining and municipal wastewater treatment sectors and ensure freshwater security for our future.



Single cell green microalgae capture sunlight, nutrients and CO₂ and produce clean water, O₂ and biomass.

The Clean Water initiative is focused on the integration of microalgae technologies to enable innovative and sustainable land management and water treatment practices to improve water quality and oxygenation, soil biology, crop health and fertiliser efficiency.

Land use change over the last 100 years has had a dramatic impact on water quality. This has affected the health of many ecosystems, water security for human consumption, as well as the sustainability and efficiency of important industries such as agriculture, livestock, mining and municipal wastewater treatment. Algal water treatment systems offer a low-cost option for water purification and oxygenation.

These clean water projects focus on the characterisation of natural and industrial wastewater streams, systems optimisation, scale up and deployment. Systems can: reduce polluting agricultural and livestock runoff to the Great Barrier Reef; extract certain heavy metals from mine tailing dams (phytomining); and treat municipal and industrial waste water.

The microalgae produced as a by-product of water treatment can be used as a feedstock to produce bio-products such as next generation bio-fertilisers, bio-plastics and renewable fuels.

Top: Access to clean drinking water. **Middle:** Filamentous algae. **Bottom:** Microalgae treatment systems.

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