



Parliamentary Joint Select Committee on Northern Australia

14 March 2014

Re: Tropical education infrastructure for feed, fertiliser and fuels

Dear Sir/Madam

We are writing in our role as directors of MACRO – the Centre for Macroalgal Resources & Biotechnology at James Cook University in North Queensland. We represent the single largest team in an education institution working on the production of tropical freshwater and marine algae, with more than 30 staff and post-graduate students engaged in Research & Development projects with an investment of \$12.5 million. The core funding is from the Federal government, primarily the Australian Renewable Energy Agency, the Advanced Manufacturing Cooperative Research Centre and the Australian Centre for International Agricultural Research, with significant co-funding from national and international industry partners.

The strengths and success of MACRO as a research provider owes much to our location in tropical North Australia. We have successfully partnered with industries in the region to provide the foundation R&D for integrating the production of macroalgae with wastewater treatment and environmental services. This has enabled us to develop technologies in real-world scenarios by working with key industries that characterise the North, from mining and mineral processing through to agriculture and aquaculture.

We are now in a position where our multidisciplinary R&D projects have successfully screened and analysed the fundamental data required to make informed decisions about the ability of macroalgal technologies to transform existing industries. The MACRO Centre has also matured at a time when similar interests and concepts are emerging and gaining traction in Asia and throughout the globe. Notably, JCU has the only purpose built infrastructure to take advantage of this niche and is well placed to develop education programs to train workers or conduct commercial R&D for this tropical industry.

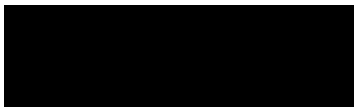
*We put forward to the Parliamentary Joint Select Committee on Northern Australia a need for **education infrastructure for integrated algae-animal production that would be a flagship tropical facility for international research and training at James Cook University. In addition it would support the development of an intensive industry hub to deliver innovative and sustainable tropical agriculture systems.** An “International Centre for Integrated Algae & Animal Production” could be built on a green field site adjacent to existing university teaching and research services. It would deliver R&D and training in sustainable agriculture focussed on feed, fertiliser and fuel for the tropics.*

There is a clear opportunity and capacity to create the first international centre for integrated algae-animal production by leveraging world-leading R&D in algae and animal production at James Cook University and working with existing research collaborators in the North such as CSIRO and DAFFQ. This centre would be unique in its large-scale algae-animal production systems designed specifically for sustainable agriculture and freshwater aquaculture industries in the tropics, and provide an advanced training ground for both domestic and international students. We would also offer industry training and up-skilling that could be tailored to the requirements for government and industry scientists with a focus on partnerships from the tropical Asian region.

Our vision is that the facility would offer training and R&D at each step in this integrated process: from intensive animal production (livestock and fish) to waste water handling (anaerobic digestion and filtration), from algae production (farm management) through to processing and product development, with an over-arching economic program linking each of the steps in the enterprise. The key disciplines would be Biological & Environmental Science (algae production, product development and waste water treatment), Veterinary Sciences (animal production) and Business & Economics (the economics of production), leveraging existing expertise in all of these areas and attracting world-leaders to this unique tropical education and research facility.

In summary, we will continue to represent the North as a renowned R&D centre for innovation in algae. We will also look to play a large and ongoing role in bridging industries in the North through waste water treatment and new product development. However, there is a real and timely opportunity to leverage our technology, skills and expertise to create an education and industry hub for integrated algae-animal production – *in Northern Australia, for the tropical world.*

Sincerely,



Doctor Nicholas Paul



Professor Rocky de Nys

Directors

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