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IRU – Innovation in Action Series 2/4

As a leader in higher education and research policy, Innovative Research Universities (IRU) is paving the way in innovation policy to enhance industry and university collaboration in Australia.

[Industry Driven Research](#), published by IRU in April 2015, puts forward policy recommendations that enable industry, universities and researchers to integrate more effectively for the benefit of all Australia; a critical part of the Government's current Industry Innovation and Competitiveness Agenda about which we expect further announcements in the coming days.

'The vast disconnect that exists between research produced by universities and that used by industry is unnecessary. Australia produces a high level of research. It has a low level of take up of the research produced and low levels of industry initiated research', says IRU Executive Director, Conor King.

'The prime focus is to alter the incentives for industry and business to seek out research that can improve their operations and commercial outcomes. The main aim for universities should be exploring ways that existing systems could be changed to integrate better with increased industry demand. Changing the status of industry driven research within academia is crucial," says Conor King, who recommends that transition between academia and industry and back again be made viable for researchers.

Industry Driven Research can be downloaded [here](#).

Examples of IRU innovation in action:

North Australian Centre for Oil and Gas (NACOG) – Charles Darwin University (CDU) and Ichthys LNG Pty Ltd

Corrosion is an issue for any industry, but especially for petroleum production and processing operations located off-shore or near the coast. Many corrosion issues can be prevented or mitigated through appropriate design, monitoring and control systems.

NACOG, based at CDU, was built with support from the Northern Territory Government and the oil and gas industry through INPEX Total and other participants in the Ichthys LNG Project Joint Venture. It uses CDU research and expertise to address issues facing the industry. Through engineering which involves conception, design, implementation and maintenance, NACOG has been providing support to the industry in problems involving selection, repair, and maintenance advice and through failure analysis to inform the system engineering process. The value created by NACOG found that for every \$1 invested, \$4.50 of social and economic value was created over the fifty-year life of the centre, proving a remarkable return.

Using Algae in Water Treatment – James Cook University (JCU) – MBD Energy

Melbourne based company MBD Energy have partnered with Professor Rocky de Nys of the College of Environmental Sciences at JCU to pioneer technology in the use of algae in water treatment. Through this research, algae in prawn ponds is used to absorb nitrogen and

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[Charles Darwin University](#) [Flinders University](#) [Griffith University](#) [James Cook University](#) [La Trobe University](#) [Murdoch University](#)

phosphorus in waste water, creating purified water which can be returned back to the ocean with no negative impact to the Great Barrier Reef. The Great Barrier Reef Marine Park Authority (GBRMPA) stipulates that the level of nitrogen and phosphorus in the discharge water going back to the Great Barrier Reef waters has zero net gain from the inlet water for each new prawn farm – a hefty requirement that has meant that the North Queensland prawn industry has not expanded in the last ten years. MBD Energy is the first company in the world to commercialise algae as a water treatment option. Thanks to the technology developed by MBD Energy in partnership with James Cook University, it is possible for Australia’s largest prawn farm business, Pacific Reef Fisheries to meet this requirement. The technology is currently being extended for use in sugar cane industries in Australia and investigated in other aquaculture industries in Asia.

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