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# Titan Hydrogen has partnered with QUT to develop what it claims is a “revolutionary hydrogen fuel cell”

There are no hydrogen-fuelled trucks or buses in commercial use across Australia yet but that's about to change.



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## PLUGGING INTO HYDROGEN

There are no hydrogen-fuelled trucks or buses in commercial use across Australia despite growing interest in the renewable energy source.

That could change later this decade if a start-up company has anything to do with it.

Titan Hydrogen, which aims to raise up to \$1m ahead of an impending IPO, has just announced a partnership with the Queensland University of Technology this month to help develop what it claims is a “revolutionary hydrogen fuel cell”.

Chief technical officer Andrew Dicks said the firm is already seeking patent protection for a new kind of fuel cell which it believes will allow for much greater uptake of hydrogen in commercial vehicles.



Dr Andrew Dicks, chief technology officer at Titan Hydrogen.

“Titan holds the patent application to a revolutionary technology that improves the efficiency and reduces consumption of hydrogen of existing fuel cells, making their use much more viable,” Dr Dicks told us.

“Not only will we be able to manufacture a more efficient fuel cell for trucks and other large engines, we will be able to license our technology for use by car manufacturers.”

Eco-friendly hydrogen, which is produced from clean sources such as water and biomass, generates only water as exhaust.

While most of the growing sector focuses on reducing the price of hydrogen, Titan hopes to generate more energy from the same amount of the element.

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The current efficiency of fuel cells is low, typically converting less than 40 per cent of the hydrogen into electricity. That’s a non-starter for trucks and buses, which frequently have to travel vast distances across Australia.

Titan hopes its technology will effectively double the driving range of vehicles by allowing fuel cells to churn out more electricity from the same amount of hydrogen.

The company is also working on a hydrogen injection system for internal combustion engines that it believes could cut emissions by 30 per cent and boost fuel efficiency by 20 per cent.

A peak industry research group estimates that hydrogen may be as cost competitive as existing transport options by 2030.

They believe up to 4.5 million of the “fuel cell electric vehicles” could be on the road by then, with especially strong demand coming from China, Japan and Korea.

Titan’s tie-up with QUT makes sense because the uni has been operating a \$7.5m pilot plant at a research facility in the Redlands since late 2018.

The following year, in a joint venture with the University of Tokyo, it took part in the first production and export of green hydrogen sourced from solar power.

Proponents of a “national hydrogen strategy” believe Australia could build an export industry worth \$1.7bn by 2030.

Some estimates suggest global demand for hydrogen could swell to \$1 trillion by 2050.

## **ONE DREAM DIES, ANOTHER IS BORN**

One retail dream died for Michael Fox two years ago and another was born just days later.

The Sunshine Coast-based entrepreneur was a co-founder of promising fashion start-up Shoes of Prey when it launched in 2009.

The company, which allowed customers to customise their footwear online ahead of delivery, eventually attracted more than \$40m from investors and had about 200 employees.

Among those tipping in cash were Mike Cannon-Brookes, the billionaire co-founder of software giant Atlassian, and now-defunct Blue Sky Alternative Investments based in Brisbane.

But the business started to unravel in 2018 and, by March 2019, it fell into liquidation.

Company records reveal that, just 11 days after Shoes of Prey collapsed, Fox registered a new entity, Fable Food Pty Ltd.





Fable Food co-founder Michael Fox.

That firm is now surfing in on the fast-growing trend of plant-based alternatives to meat, churning out a line of products sourced from shiitake mushrooms.

Although Fox is listed as the sole director and owner of Fable, he co-founded the venture with Jim Fuller, a chemical engineer and self-described “BBQ lovin’ whiskey swillin’ Texan,” and Chris McLoughlin, an award-winning organic mushroom farmer.

The trio has already got a foothold in the sector, with about 1500 retail outlets, including Coles and Woolworths supermarkets, as well as more than 150 cafes and restaurants, now featuring their foods.

The “tribe of mushroom-loving rebels,” as they call themselves, just got another break thanks to a high-profile collaboration with burger chain Grill’d and British celebrity chef Heston Blumenthal.



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cranking out 4000 of them.

Michelin-starred Heston, who has appeared on MasterChef and runs several primo dining spots in London, sees the mushroom-based meals as a serious culinary counterweight to beef.

“The Fable patty has a rich, satisfying mushroom flavour that tastes just like slow-cooked meat, complemented by the plummy and spiciness of hoisin sauce, fresh texture of Japanese slaw and lightly grilled tofu,” Blumenthal said.

“It has all of the umami, all of the satisfying things that you would expect from a burger but there’s no meat in it. Mouth-watering, 100 per cent natural, satisfying and just delicious.”

Consumers appear to be coming around to his way of thinking.

Australians forked out \$185m last year for plant-sourced meat substitutes and that spend could soar to \$3bn by 2030, according to research carried out for independent think tank Food Frontier.

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The group found that retail sales surged by 46 from US per cent in the year to June 2020 as shops more than doubled the number of products to in excess of 200.

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