



Small steps to a hydrogen powered climate solution



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The Intergovernmental Panel on Climate Change (IPCC) is going to spark a new approach to research on lowering non-carbon energy costs.

And what has happened in fuel cells and hydrogen may be a global and Australian model.

In Australia, the removal of the Gillard/Rudd governments mean that in Australia, we can start to use our brains instead of being alone in the world in being lumbered with a high carbon tax.

The Abbott government's aim is to reduce carbon and at the same time improve our productivity, which is exactly what the rest of the world will do ([Abbott's 12-point plan to transform Australia: Part 2](#) [1], 10 September).

A lot of Australian companies need to relook at their strategies. In the light of the IPCC report ([Take five on climate change and use your brain](#) [2], 26 September) I am going to relate an inspiring global story – Horizon Fuel Cells.

A decade or so ago a large number of big corporations believed that, given the abundance of hydrogen, it was the ideal material to replace much carbon usage via fuel cells. But after hundreds of millions of dollars in global fuel cells research expenditure, no one has made money made out of hydrogen and fuel cells – that is except Horizon.

And it succeeded because it thought small and specialised – exactly what we are going to have to do in Australia.

The Singapore company developed small scale fuel cells to use hydrogen to replace carbon and batteries.

And now the use of hydrogen/fuel cells looks like boosting the bottom line of a great many mobile telecommunication companies like Telstra.

Horizon is an example of how to undertake successful research either in Australia or abroad.

It started with a team of researchers lead by George Gu who were working at the Eastman Chemical Corporation on the best way to conduct research. Gu and his Eastman researchers believed that the best way to conduct research was to start with small and manageable targets. It was not the Eastman way and Gu left Eastman and started what became Horizon Fuel Cells The staff own between 35 and 40 per cent backed by other shareholders led by the Piëch family who made a fortune out of the Porche business. But

the capital raised was under \$40 million.

By contrast, the majors sprayed money and aimed big, seeing hydrogen as a fuel source for major energy users like cars but, so far hydrogen has proved too difficult in large scale projects. Horizon started at the other end – small scale techniques to extract hydrogen from various materials and to use it in small applications, for low power usage markets like toys, small unmanned aircraft and caravans. Horizon now operates in 65 countries and became the largest maker of fuel cells below 1kw. But now it is targeting systems ranging from 5kw to 100kw.

One particular fuel cell is so large that the Singapore based company may need to raise more capital either via a partner or a public float.

Around the world a majority mobile phone towers have a set of batteries and every six months or so a technician climbs the tower and checks and/or replaces those batteries.

The batteries are required to maintain the mobile networks when power from the grid breaks down. Checking is an expensive, labour-intensive process.

Horizon believes its small hydrogen powered fuel cells will do the job for a much longer period. It is developing similar products to recharge mobile phones for consumers in areas where there is no power.

Australia is good at smaller scale projects and that is where we should be putting much of our efforts.

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