

The great hybrid swindle

When asked recently what she is personally doing for the environment, Climate Change Minister Penny Wong said "I drive a hybrid". Peter Vogel* believes Minister Wong has fallen for the hype which threatens to obscure a massive opportunity for Australian science and industry.

Global research has found that in 2008 fuel consumption is foremost in a car buyer's mind. Dieter Becker, head of KPMG's automotive segment says "Fuel consumption of a new car is just as interesting as its build-quality"ⁱ. 80% of consumers worldwide prefer to buy environmentally-friendly goods.ⁱⁱ

Hybrid cars, which use both petrol and electric motors, have rapidly gained popularity due to their perceived environmental and running cost benefits. Three hybrids are available in Australia — Toyota Prius, Honda Civic and the Lexus 400h. Demand for these continues to outstrip supply. Toyota Australia is due to assemble 10,000 hybrid Camrys a year from 2010, supported by cash handouts from the Rudd government.

But the advantages of hybrids are questionable, to say the least. Fuel economy is better, but only under stop-start conditions and even then not dramatically better. On long trips, hybrids can consume more fuel than a modern diesel.

As well as having everything that can fail in a petrol car, hybrids have many electrical parts to go wrong as well. Factoring in the added complexity, the Prius is the most expensive car in its class to runⁱⁱⁱ. Yet it was in the top ten selling cars list in America last summer^{iv}.

The good news is that while consumers are queuing up to buy hybrids, motor vehicle producers are embracing fully electric vehicles as the wave of the future.^v

Most of the major car companies are working furiously to develop all-electric cars. 33,000 Americans have registered their intent to buy a plug-in Chevy Volt when available in 2010.

Spokesman Dave Darovitz expects an initial shortage for the Volt. "I don't know if there is any other vehicle or any other technology that has generated this kind of interest because of the state of the market and gas prices"^{vi}. Mitsubishi have skipped the hybrid step and gone straight to all-electric. They have announced that their fully-electric i MiEV will be on sale in Australia from 2010, priced in the \$30,000 range.^{vii}



Mitsubishi have (sensibly) skipped the hybrid step and gone straight to plugin.

Even using electricity from coal to charge the batteries, electric cars produce far less CO₂ than any hybrid. "Fuel" cost is typically one tenth. Using renewable energy, which is now readily available, they are truly zero emission. Even paying the premium for renewable energy, the running cost is a fraction of a hybrid.

Previous limitations of battery technology have given electric cars a bad image. However, the public's perception of the electric car is about to get a makeover, starting with the Tesla electric roadster which went on sale in August 2008. It goes from 0 to 60 in 4 seconds. You plug it at night, and the next day it can go 200 miles on a charge. There's no fuel tank, no exhaust pipe, no oil changes and certainly no boredom.^{viii} Even at \$US100,000 the first year's production has been presold with 1,100 people having prepaid a \$66,000 deposit.^{ix}



Tesla Roadster – suddenly electric is sexy

Battery makers including U.S. frontrunner A123, are developing a battery upgrade for the Prius. More than 1,000 U.S. Prius owners are on a waiting list for this \$10,000 plug-in conversion kit.^x

What's in it for Australia?

Globally, the drive for fuel-efficient vehicles is a source of renewed optimism and continues to drive new investment in automotive industry.^{xi}

Australia's automotive industry is its largest export earner after mining, generating around \$5bn in export earnings each year. The industry is moving to greener vehicles and the Federal Chamber of Automotive Industries believes there are substantial opportunities for new technologies to be developed and applied in Australia.^{xii}

As global awareness of climate change grows, consumers are becoming more attuned to the environmental impact of their activities, including the vehicles they purchase...In this environment, it is essential that Australian automotive producers focus substantial effort on the development of fuel efficient vehicles for production in Australia.
New Directions Statement, ALP march 2007^{xiii}

The Rudd Government has made a strong commitment that Australia will play a leading role in development and application of green car technology. They have issued the Green Car Challenge, pledging to purchase environmentally-friendly vehicles for the Commonwealth fleet if they are produced in Australia.^{xiv}

The 2008 Review of Australia's Automotive Industry recommended bringing forward the Green Car Innovation Fund to 2009 and doubling the grants to \$1bn. It also proposed the inclusion of transportation in the new emissions trading scheme.^{xv} This carrot-and-stick approach will be a huge boost to local green car initiatives.

Answering today's challenges and seizing tomorrow's opportunities will require new ideas and new policies. That's why we've been talking about the need for a new partnership between government and the sector to attract new investment and to secure the jobs, the innovation, the technical skills which are driven by this critical industry. Our focus has been on green vehicle technologies and green production processes.
Innovation Minister Senator the Hon Kim Carr^{xvi}

The move to electric propulsion has fundamentally changed the game. The car industry of tomorrow will be more "Silicon Valley" than "Detroit". Electrical and electronic excellence will be key to success. Innovation is now possible without needing the billion dollar engineering teams and facilities which Australia lacks.

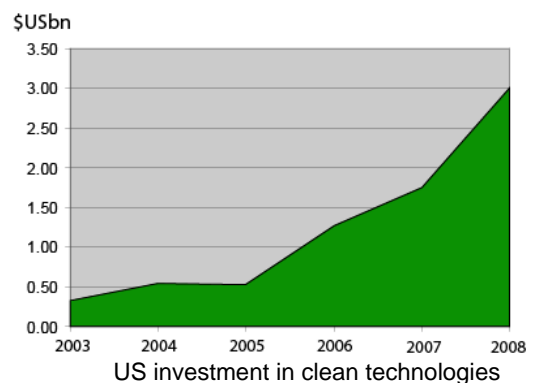
It is significant that Google founders Larry Page and Sergey Brin, and PayPal co-founder Elon Musk have invested in Tesla Motors. It is no accident that the company is based in Silicon Valley. "Tesla Motors grew from a bunch of software and engineering experts who had no car design experience", founder Martin Eberhard says. "As a result, they weren't held back by conventional wisdom."^{xvii}

This is where Australian technology excels — we have high levels of innovation and expertise, particularly in solar energy, and we are notoriously unconstrained by convention.

Global investment in clean technologies

The clean technology sector has been attracting much interest and investment in recent years.

The United Nations Environment Programme reports that 2007 saw global investment in sustainable energy climb 43 per cent in 2006 to \$70.9bn and projects as much as \$600 billion by 2020.



Most of the growth opportunity for the automotive industry is in the developing nations, particularly India and China. As their wealth increases, these vast populations will consume huge numbers of vehicles, however environmental concerns and rising cost of oil mean petrol power is not an option. Electric cars are cheap and clean to run and don't require the fuel supply and maintenance infrastructure of petrol cars.

Another fast moving technology is anything concerning solar power. There is already a

world-wide shortage of engineers with expertise in renewable energy.^{xviii}

Battery technology, critical to both solar power and vehicle applications, has attracted significant investment in recent times. A123 has raised over \$100m in the last two years and this month has announced an IPO to raise a further \$175m.

Dow Jones VentureSource predicts the boom is likely to continue.^{xix}

"It [clean tech] feels like a steady wave that's just beginning. Not a bubble that's about to burst."^{xx}



***Peter Vogel** is a Creative Technologist with consulting group Vogel Ross Pty Ltd. Peter has invented, patented and commercialised a number of ground-breaking technologies, starting with the Fairlight sound sampler in the eighties. He specialised over the last decade in "new media" and was a founder and CTO of IceTV Pty Ltd before moving into a broader consultancy role.

About Vogel Ross Pty Ltd

Vogel Ross provides contract executive management for small to medium size companies, particularly those involved in technology, electronics and ICT.

Our unique blend of technical skills and commercial experience bridges the gap between the 'suits' and the 'boffins'.

To learn more see : www.vogelross.com.au

Further Information: **Peter Vogel**
+61 410 192 006 (Australia Direct)
peter.vogel@vogelross.com.au

Duncan Ross
+61 417 555 525 (Australia Direct)
duncan.ross@vogelross.com.au

Sources

- ⁱ Dieter Becker, head of KPMG's automotive segment.
- ⁱⁱ Largest Global Study of Consumer Response to Climate Change Puts the Onus on Brands, Reuters May 2008
- ⁱⁱⁱ Whole of Life Vehicle Operating Costs NRMA June 2007
- ^{iv} Could The Electric Car Save Us? CBS News Sept. 16, 2007
- ^v Review of Australia's automotive industry July 2008
- ^{vi} Reuters 13 August 2008
- ^{vii} News Ltd July 2008
- ^{viii} Could The Electric Car Save Us? CBS News Sept. 16, 2007
- ^{ix} Tesla Motors Unveils Jaw-Dropping Menlo Park Showroom, Techcrunch July 19, 2008
- ^x Leslie Goldman, A123 June 2008
- ^{xi} KPMG, 2008 Global Auto Executive Survey
- ^{xii} Federal Chamber of Automotive Industries chief executive Andrew McKellar
- ^{xiii} New Directions Statement ALP march 2007
- ^{xiv} Innovation Minister Senator the Hon Kim Carr Apr 2008.
- ^{xv} Hon Steve Bracks, Leader, Review of Australia's Automotive Industry July 2008
- ^{xvi} Innovation Minister Senator the Hon Kim Carr, July 2008
- ^{xvii} Could The Electric Car Save Us? CBS News Sept. 16, 2007
- ^{xviii} Blooms in solar power will create shortage of labor July 18, 2008
- ^{xix} BusinessGreen, 29 Feb 2008
- ^{xx} Erik Straser Cleantech investment team leader, Mohr Davidow Ventures