

Australian politics, wind and batteries....

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The media coverage of the latest round of climate related legislation in Australia has been hysterical to say the least. Emissions intensive industries will emigrate to carbon-friendly countries, coal fired power stations have already stopped long term maintenance causing power cuts in the height of summer, exports will be slashed, jobs will be lost and the country will generally go into a steep and unavoidable economic decline.

The voice of the cleantech industry is not as loud, but is not dissimilar – potential green jobs will be lost, the country will be left behind etc etc. I'm sure there is nothing unique about the Australian debate.

The legislation that has been passed establishes a Renewable Energy Target (RET) of 20% of stationary power to be generated from renewable sources by 2020. This will increase the annual generation from its current 9,500GWh to 45,000GWh. The legislation is enforced through energy retailers having to submit sufficient Renewable Energy Credits (RECs) as compared to their total energy sold. As the RECs can be banked in advance, it is believed that most of the target will be taken up onshore wind farms constructed over the next five years or so. This could lead to over 10,000MW of installed wind capacity being constructed at a cost of over A\$20 billion. Forecast forward REC prices vary, but may end up at around A\$40 with a REC being roughly equivalent to 1 tonne-CO₂e.

Another piece of legislation that was defeated in the Upper House and will be re-introduced into the parliament in November is the Australian Emissions Trading Scheme, which the Government has called the Carbon Pollution Reduction Scheme (CPRS). This was voted down primarily by conservative politicians worried about impacts on both rural communities and emissions intensive industries. There was also a resurgence of climate scepticism and a view that there is no point making any decisions until after Copenhagen. The scheme, in its current form, is a heavily watered down version of the first draft. It proposes a fixed carbon tax for its first year of operation starting in July 2011 and then a tradeable carbon commodity thereafter. The targets are modest at only a 5% reduction on 2000 levels by 2020 and the

carbon price is not expected to exceed A\$25/tonne-CO₂e during this time. There are aspirational targets that are bigger but the conditions are sufficiently onerous to preclude their consideration. There are carve outs for petrol and for most of the emissions intensive and export industries, so, even if passed, the CPRS will not appear to drive significant behaviour change. The draft allows for unlimited import of credits from CDM projects but no export of credits from Australian projects. This has met with disappointment from investors looking towards developing local projects and seeking to trade credits on other markets with tighter targets and the potential for higher carbon prices.

There has been significant debate here on the impacts of this legislation on the cleantech industry in general and which subsectors will be most impacted. Over the longer term, the technology winners will be those technologies that provide required solutions at the lowest costs. In the short term however, there will be a huge impacts on individuals, companies and investors.

A quick look at which of the sub-sectors of the Australian Cleantech Index have performed well in the last six months demonstrates the correlation between policy and investment returns. The ACT Solar Index has increase by 119% in the 6 months since 31 January, driven entirely by the increased demand for rooftop solar photovoltaic panels resulting from government rebates for small scale pV installations. For instance, investors with \$1,000 invested in Quantum Energy on 31 January 2009 could have cashed in \$3,750 if they had sold out six months later.

Over the same period, the ACT Wind Index increased by 33.1%, roughly in line with the overall index. The RET legislation had not yet been passed and investors were clearly not yet confident enough in its passage to inflate the share price of the likely beneficiaries. There is a strong expectation that these enhanced returns will now materialise.

Big solar also appears to be set to make significant progress through a A\$1.5 billion Government funding program to be rolled out from 2010. Winners from this may include companies such as Wizard Power, Acwasol and Solar Systems.

A valid question is whether the investment in wind will exhaust the investment appetite for cleantech and leave nothing for the other sub-sectors. Will sub-sectors

such as water, waste, vehicle technologies, energy efficiency and energy storage simply stagnate in Australia whilst their cleantech cousins in clean energy boom?

Looking at the fundamental drivers of cleantech, the answer is clearly 'no'. The other sub-sectors may not accelerate as fast in the short term and maybe the investment returns will not be so strong. However, the demand for increased resource efficiency, reduced waste and improved environmental performance will ensure that technologies across the Australian cleantech spectrum will succeed even in the short term.

Given the focus of this edition is on electric vehicles (EVs), it is worth providing an overview of the current activity within this sub-sector in Australia. *Better Place* has recently announced its first Australian project in the nation's capital, Canberra, with financial support from Macquarie Bank.

There has however been little progress on the domestic development of electric vehicles, with talk more of trials of imported vehicles from the likes of Mitsubishi and Renault. To demonstrate the status of the Australian car industry, the local GM subsidiary, GM Holden, made a big announcement in late 2008 that, with significant and vocal Government support, it would start to manufacture a four cylinder car within a few years as a significant energy efficiency on its standard six cylinder model!

Battery technologies are however progressing well and some of these may find homes in EVs manufactured elsewhere. technologies such as Cap-XX's supercapacitors, Cougar Energy's and V-Fuel's vanadium based batteries and ZBB's and RedFlow Energy's zinc-bromide batteries are all progressing well. There are also some exciting battery technologies coming out of research institutions such as the CSIRO, although many of these struggle to secure sufficient seed funding.

In summary, the Australian legislative agenda is progressing, although more slowly than many had hoped when the current centre-left government was elected in late 2007. The biggest winner from policy settings to date have been household solar and it seems that wind may well be the big winner over the next few years. Australia is a long way behind on EV developments although its battery technologies have significant potential, if they are able to attract sufficient early stage funding.

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