The Oil Drum: Australia & New Zealand
DISCUSSIONS ABOUT ENERGY AND OUR FUTURE

Electric Vehicles: The End Of Australian Manufacturing ?

Posted by Big Gav on March 20, 2010 - 10:56am in The Oil Drum: Australia/New Zealand
Topic: Alternative energy
Tags: australia, electric vehicles, lithium, lithium ion batteries [list all tags]

Alan Kohler had an interesting column in The Business Spectator recently ("The cars that ate Australia") warning that as our car fleet transitions from the internal combustion to electric vehicles, local car manufacturers need to start looking to manufacture EV's or they (and all their suppliers) will end up shutting down.

Yesterday's announcement of an electric car trial by the WA government means that at least some politicians in Australia are at last taking seriously what is shaping up as the next great industrial revolution.

But unless something changes on the east coast, electric cars will be a disaster for Australian manufacturing. At this stage it looks like no electric cars will be made here – Ford, GM, Toyota and Mitsubishi are all gearing up rapidly to make them somewhere else.

Yesterday the man in charge of the Perth trial, Professor Thomas Brauni, said: "It's quite likely that you have a significant percentage of all cars being electric in 10-20 years time".

> If he's only half right, Australia has a big problem. Manufacturing industry rests on the car industry and is already in trouble because China's demand for raw materials is pushing the currency higher. If Australia doesn't make electric cars, and there is a big switch from petrol to electricity over the next decade or two, manufacturing in this country will shut down.

While Australian manufacturing might not completely disappear along with the car industry (even if globalisation has made much of it vanish already) there wouldn't be much left in South Australia and Victoria - so those states may well decide to try and tempt the multinationals into upgrading their plants to produce EV's once they start to gain significant market share.

Kohler also points out that there will be accompanying booms in clean energy generation and both lithium and copper production - which provides a number of opportunities for local companies.

Kohler had an article in a similar vein at The Eureka Report ("Wheels of fortune") recently, looking at both clean energy companies linked to Better Place and lithium producers that could benefit from the electric vehicle revolution, like Talison Minerals, Galaxy resources and Haddington (another Australian miner - Greenland Minerals And Energy - is hoping to develop a uranium / lithium deposit in Greenland).

> It would be quite pointless to generate the electricity for the new era of transportation with brown coal, or even black coal. The emissions would still be lower than petrol exhausts, but the gains from using renewable energy instead would be enormous. In fact, electric cars can underpin the development of viable renewable energy industries in most countries.
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> Better Place plans to buy only renewables and expects to become Australia's largest buyer of wind power. This is likely to a boon for Origin, AGL and Infigen from about 2013.
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> Seventy percent of the world's mineral lithium comes from the Greenbushes mine in Western Australia, owned by a Canadian company called Talison Minerals. The company announced in November last year that it planned to list in both Canada and Australia during 2010 but nothing has happened yet.
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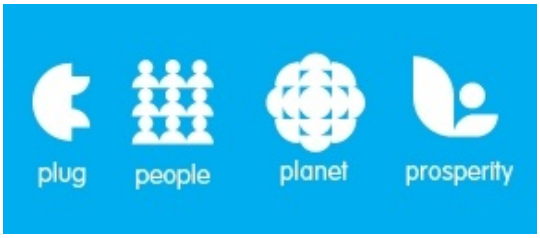
> Another local producer is Galaxy Resources, an ASX listed company that owns a lithium/tantalum deposit near Ravensthorpe in WA. Galaxy is currently at $1.18 and market cap of $178.4 million. The stock was 25¢ a year ago and peaked at $2.21 in September last year because of a flurry of interest in lithium batteries around the time that A123 Systems Inc listed on Nasdaq, becoming the hottest new listing in 2009.



Australian lithium mines aren't the only ones looking to increase production - The New York Times recently had an article on the surge of interest worldwide in the metal ("The Lithium Chase").

> Toyota Tsusho, the material supplier for the big Japanese automaker, announced a joint venture in January with the Australian miner Orocobre to develop a $100 million lithium project in Argentina. That deal came only days after Magna International, the Canadian car parts company that is helping develop a battery-powered version of the Ford Focus, announced that it was investing $10 million in a small Canadian lithium firm that also has projects in Argentina. ...
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> About 60 mining companies have begun feasibility studies in Argentina, Serbia and Nevada that could lead to more than $1 billion in new lithium projects in the next several years, while dozens of smaller projects are being proposed in China, Finland, Mexico and Canada. ...
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> In the meantime the four biggest current producers, which mine and otherwise gather lithium in Chile, Argentina and Australia, say they are planning to expand long-running projects as future demand warrants.
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> In Bolivia, which has almost half of the world's reserves, the leftist government is building a pilot production plant and is drilling exploratory holes. That Bolivia is a remote, unstable country often hostile to foreign investment has helped spur interest in producing lithium in neighboring Argentina and Chile, in Australia, and in the United States. Several Canadian and American companies are making claims about future production prospects in Nevada, though few analysts foresee large-scale production from that state.
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> While most experts are skeptical that meaningful amounts of lithium can be produced domestically, they maintain that adequate supplies will be available from sources outside of Bolivia for many years to come and note that the biggest producer, Chile, is a dependable American ally.

While the NYT is dubious about increased lithium production within the US, one american company which has garnered attention for its potential to is Simbol Mining, which is looking to extract lithium from the water flowing through geothermal power plants.

Most of the attention for large scale future production of lithium tends to focus on Bolivia, which has the world's largest lithium resource soaked into the coating on the world's largest salt flat, the Salar De Uyuni.

The subject of Peak lithium has been raised from time to time (with recent commentary at Seeking Alpha and The Oil Drum) with Jack Lifton (author of the Seeking Alpha article) arguing that lithium supplies will be insufficient to meet our needs while Keith Evans argues there is more than enough resources available.

World Mine Production, Reserves, and Reserve Base:

	Mine production		Reserves[2]	Reserve base[2]
	2005	2006[e]		
United States	W	W	38,000	410,000
Argentina[e]	1,980	2,000	NA	NA
Australia[e]	3,770	3,800	160,000	260,000
Bolivia	—	—	—	5,400,000
Brazil	242	475	190,000	910,000
Canada	707	710	180,000	360,000
Chile	8,270	8,300	3,000,000	3,000,000
China	2,820	3,000	540,000	1,100,000
Portugal	320	325	NA	NA
Russia	2,200	2,200	NA	NA
Zimbabwe	260	250	23,000	27,000
World total (rounded)	[3]20,600	[3]21,100	4,100,000	11,000,000

World Resources: The identified lithium resources total 760,000 tons in the United States and more than 13 million tons in other countries.

Cross posted from Peak Energy.