

# Access to Lithium in North America Will Determine the Success of EVs and Hybrids

By **Jean-Sébastien Lavallée**

Lithium is a key component of lithium-ion battery packs that power electric vehicles (EV) and hybrid vehicles. A recent report from Pike Research forecast global sales of EV charging equipment will grow from 200,000 units sold in 2012 to nearly 2.4 million in 2020, representing a compound annual growth rate of 37%. With lithium a key component to the EV and hybrid market, it is crucial that North America has adequate supply to this critical element minus any geopolitical conflicts.

Credit Suisse has forecast a 10.3% annual growth in demand for lithium between 2009 and 2020. Global lithium demand has tripled over the past decade, and the global market price of lithium carbonate has tripled since 2001 to its current level of around \$6,500 per metric ton (mt). An industrial research report by David & Company forecasts the global market for lithium-ion batteries will increase to \$43 billion by 2020 compared to an \$11 billion levels in 2010 with the primary catalyst the increased demand for electric cars.

Most lithium today is mined in Australia, Argentina and Chile. The largest known deposit is in Bolivia, but political turmoil has hampered production. In the United States, there is a

Nevada mine with geo-thermal power plants that extract lithium as a by-product near the Salton Sea in southern California.

China remains the leading importer of lithium minerals and compounds, and the leading producer of value-added lithium materials. Critical Elements' Rose tantalum-lithium project, in the James Bay region in Quebec, is slated to start production by 2014 and is free of any geopolitical turmoil. It will be a valued global source for conflict-free tantalum.

High purity lithium is required for a variety of electrical storage needs; from batteries that power electric and hybrid vehicles, or that provide large scale storage of renewable and conventionally produced power, to the batteries that power electronics including those found in smart phones, laptops and gaming systems. Having proven a purity of 99.9% for its lithium makes the Rose project one of only five deposits globally that meet the rigorous specifications for lithium-ion batteries.

North America does not want to lose the global race to be the leader in green energy solutions that include access to high quality conflict-free lithium. The contest of the new millennium is being waged on a monetary and labor scale

across the globe with China, the market leader for rare earth metals, with about 97% of the world's supply. Next on China's plate is renewable energy integration. Ironically, as environmental pollution in the People's Republic of China runs rampant, the country has steadfastly focused on securing leadership status in the renewable industry. The Chinese government has set a goal of China securing 11.4% of its energy from non-fossil sources by the end of 2015, up from 8% today.

The U.S. government's commitment to supporting both the renewable energy and EV industries underlines the need for the rapid development of rechargeable batteries, and has thrown the spotlight on domestic lithium supplies. It is critical that North Americans understand the importance of assuming a leader stake in the alternative energy market.

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Precious Metals (\$/oz)		Base Metals (\$/mt)		Minor Metals (\$/mt)		Exchange Rates (U.S.\$ Equivalent)	
Gold	\$1,674.40	Aluminum	\$2,079.00	Molybdenum	\$25,300	Euro (€)	1.3593
Silver	\$31.76	Copper	\$8,226.00	Cobalt	\$25,500	U.K. (£)	1.5721
Platinum	\$1,698.00	Lead	\$2,443.00			Canada (\$)	1.0028
Palladium	\$760.00	Nickel	\$18,600.00	<b>Iron Ore (\$/dmt)</b>		Australia (\$)	1.0426
Rhodium	\$1,175.00	Tin	\$24,945.00	Fe CFR China	\$154.79	South Africa (Rand)	0.1126
Ruthenium	\$85.00	Zinc	\$2,141.00			China (¥)	0.1590

Gold and silver prices provided by KITCO Bullion dealers (<http://www.kitco.com>). Platinum group metals prices provided by Johnson Matthey (<http://www.platinum.matthey.com>). Non-ferrous base and minor metal prices provided by London Metal Exchange (<http://www.lme.co.uk>). Iron ore prices provided by Metal Bulletin Iron Ore Index. Currency exchange rates were provided by the GoCurrency.com.

