

Obama, Lithium, Uranium and Rodinia

Obama's Clean Energy Agenda

President Obama has made global warming one of the key issues of his administration and it's an extremely ambitious agenda he's bringing to the table. Included in his agenda is a pledge to eliminate oil imports from the Middle East and Venezuela within a decade and to slash his country's carbon dioxide emissions by more than 30 per cent by the year 2020.

If President Obama is to successfully implement his energy doctrine his administration has to do two things:

1. Wean America off using fossil fuels (coal, oil and natural gas) to produce energy.
2. Develop alternative clean energy sources within the US to avoid energy imports.

This Clean Energy Agenda will be spearheaded by White House Chief of Staff Rahm Emanuel and complemented by hard line green leadership in both the House and Senate. This new committee has stated it will be acting quickly and decisively to reduce global warming and ending US dependence on foreign oil.

Lithium

The following quote makes it very clear two of the clean energy solutions being promoted by this administration are electricity and batteries.

"Today, we have the chance to achieve a real breakthrough: the plug-in hybrid...Hybrid engines save gasoline by switching back and forth from battery to gasoline power.....With a plug-in hybrid, commuters can drive back and forth to work, recharge their cars overnight, and go a month or more without a trip to the gas station." White House Chief of Staff Rahm Emanuel.

To achieve this breakthrough the US is going to need batteries that are cheaper, more durable and more powerful than the current nickel-metal-hydride (NiMH) batteries. Because of groundbreaking research there's already an answer being voiced, lithium-ion. With double the "energy density" of today's standard NiMH batteries lithium-ion cells have emerged as the leading battery technology to power hybrid vehicles.

- Lithium-Ion battery packs are GM's solution for the Volt hybrid
- Lithium-Ion battery packs can be manufactured to any shape or size, thereby making them easy to fit into any car design
- No memory effect, therefore easier for drivers to charge and maintain

- High energy-to-weight ratio, helping increase efficiency and environmental friendliness
- Most new hybrids and hybrid concepts being introduced rely on Lithium-Ion battery technology

This battery is absolutely critical to President Obama's energy plan, he'll need such a battery for energy storage if he's going to replace much of the nation's oil imports with US nuclear, solar, wind and geothermal eco-friendly generated electricity. The demand for lithium will rise many times over present day production with the coming runaway demand for eco-vehicles.

Where will the lithium come from?

As electricity starts to replace gasoline in America the country could very well be running the risk of replacing it's dependence on foreign oil for a dependence on foreign lithium or foreign produced lithium cells.

"We cannot allow ourselves to become dependent on foreign sources of lithium-ion battery cells (or lithium itself) as we have become dependent on petroleum from the Middle East," National Alliance for Advanced Transportation Battery Cell Manufacture's Attorney James Greenberger.

- According to the USGS, overall demand for lithium is growing at a rate of 4-5% per year
- Demand for lithium destined for battery usage is predicted to grow by 20% per year
- Over 60% of mobile phones and 90% of laptop computers feature Lithium Ion batteries
- The worldwide market for rechargeable lithium batteries is estimated to be worth over \$4 billion/year
- The automotive market alone is projected to reach \$337 million in 2012, and \$1.6 billion in 2015

The U.S. contains approximately three percent of the world's Lithium reserves. Presently Chile provides 61 percent of lithium exports to the U.S. and Argentina is the source of 36 percent. Bolivia, at an estimated fifty percent of world supply, has by far, the largest lithium deposits of any country.

President Evo Morales has already nationalized the oil and natural gas industries and now a growing nationalist movement could prompt the head of state to do the same with the lithium fields. "The previous imperialist model of exploitation of our natural resources will never be repeated in Bolivia. Maybe there could be the possibility of foreigners accepted as minority partners, or better yet, as our clients, " head of lithium extraction Saul Villegas

<http://www.aheadoftheherd.com/Newsle...try%20Risk.htm>

Lithium is not traded publicly, instead it's sold directly to end users for a negotiated price per ton or pound of Lithium carbonate (Li_2CO_3). High demand and low supply has recently caused reported paid end user prices to reach US \$6,600.00 ton.

But right now price isn't the issue, rather the issue is one of supply. Demand for lithium is increasing and Mitsubishi Motors Corp. anticipates that demand will increase fivefold to meet the needs of electric vehicles. At present, demand in North America is about 100,000 tonnes of lithium carbonate equivalent.

There's one unit of lithium in a cell phone battery, 3,000 units in a hybrid car and 7,000 units in an electric car; the numbers work out to 9 to 30 kilograms of lithium oxide per car battery. One of President Obama's goals is 1,000,000 built in America hybrid cars on American roads by 2015. The automotive industry needs a secure uninterrupted supply of lithium to ramp up its production of the next generation of hybrid electric vehicles using lithium-ion batteries.

Lithium Mining

The traditional hard-rock mining of pegmatites containing the lithium bearing silicate spodumene is time, energy and cost intensive. Lithium is the thirty-third most frequently occurring mineral so it's not exactly scarce, but concentrations are generally too low, and extraction too difficult and costly to be viable. The major trend in the lithium industry has been a transition from hard rock mining-based sources of lithium to brine-based ones. The cost-effectiveness of brine operations forced even large producers in China and Russia to develop their own brine sources or buy raw materials from brine producers.

The economics of obtaining lithium carbonate from brine are so favorable that most hard rock production has been priced out of the market. Lithium brines are currently the only lithium source that can support mining without significant other credits from tantalum, niobium, tin etc., (low manganese content within Nevada's Clayton Valley brines significantly reduces recovery costs, unlike Chile's high manganese content brine deposits). Lithium brine resources are now the preferred method of lithium recovery.

The only lithium producing plant in North America is located in Clayton Valley, Nevada, USA. The facility was opened in 1967 and has been producing lithium carbonate from brines ever since.

Recovering lithium from brines is not considered hard rock mining, its classified the same as placer and permitting is much easier and quicker.

Lithium recovery from brines could lead to a huge carbon footprint reduction because of a nearly zero-waste mining method. Once the lithium is recovered the

chemicals used can be recycled, also the by-products include saleable compounds such as potash and/or boron.

The Uranium Solution

To meet President Obama's stated goals of energy independence and a huge reduction in its carbon emissions, the US transportation system has to be electrified. Electricity is an energy source that needs to be produced and stored. The electricity needed for Obama to succeed in replacing fossil fuels, both for transportation and everyday use, will have to come from nuclear generation. There is simply no other logical alternative.

- Coal and natural gas plants emit carbon dioxide emissions.
- Extensive use of hydrogen is not practical due to its volatile nature and lack of infrastructure.
- Solar, wind and geothermal are all niche suppliers and are untried on a large scale. Solar and wind have extremely large footprints and geothermal seems to be limited to a few parts of the country. All three of these technologies are extremely important and each will successfully contribute, in a small way, to America's energy independence.
- High emissions, a negative energy return and severe environmental costs are associated with ethanol and make its use impractical.
- Hydro supplies approximately 10% of US power but going to clean eco-friendly energy isn't accomplished by damming what free-flowing rivers are left.

The US currently uses roughly fifty-five million pounds of uranium a year. The country produces roughly four million. The Russians with their Megatons to Megawatts Program supply half the shortfall but that program ends in 2013.

America produces less than ten percent of its uranium needs and relies on imports and the Russians for the rest of their Uranium. If America never builds another nuclear plant the existing demand is not going to go away or even lessen.

"In all, over 100 power reactors with a total net capacity of almost 120,000 MWe are planned and over 250 more are proposed."

<http://www.world-nuclear.org/info/inf17.html>

To meet Obama's goal of energy independence the US will have to build many more reactors and presently there's proposals for over twenty new plants. To supply these new and existing plants uranium deposits in the US need to be developed.

For investors

The United States is not even close to being self sufficient in Lithium or Uranium. If America is to end its dependence on foreign energy and vastly reduce its carbon footprint it will have to develop its own internal resources of these critical minerals.

Developing countries such as China and India, with 2.3 billion people between them, will, even while going mostly nuclear, drastically increase their consumption of fossil fuels. Oil, natural gas and coal are all going much higher in price. Soon it is going to be imperative that the present US administration is seen to be doing something, as promised, about high energy prices, foreign energy dependence and the US's extremely large carbon footprint.

The Alternative Energy Revolution with its "Yes we will!" slogan has been presented as a major plank in Obama's election platform and there's no question he will follow through. He has to, the coming high price of energy derived from non-friendly foreign fossil fuel suppliers combined with ever increasing competition for limited resources will make it happen.

Lithium and Uranium are two of the best ways to play President Obama's energy agenda. The power of the Office of the President of the United States will be backing the Eco-Energy Revolution and billions of dollars will be given out to develop the technology behind the lithium-ion battery. This energy revolution is a serious investable long-term trend and we, as investors, have to take advantage of the opportunities being presented. We'd be smart to get in early, ahead of the herd, to take advantage of the coming global rush to electricity – generated by nuclear power and stored in lithium-ion batteries.

Rodinia Minerals RM.tsx-v

The increasing demand will be very good for lithium miners and battery makers bottom lines but it may be especially lucrative to the junior exploration and development companies who have had the foresight to lock up large lithium brine deposits IN THE UNITED STATES and actually own the much needed and increasingly valuable lithium.

Uranium is also going to be a much sought after commodity and companies with 43-101 ISR compatible deposits owning permitted uranium mill sites with associated water in the US are going to become very popular with investors and very likely become takeover targets.

I've found a company with both lithium and uranium and a host of other positive attributes:

- 100% interest in 50,000 acres in Clayton Valley, surrounding the only US operating lithium producer

In 1975, I.A. Kunasz of the American Institute of Mining, estimated the mineral endowment of Clayton Valley to be 750 million kg of lithium. A more recent study by Price, Lechler, Lear and Giles in 2000, suggests that significantly more lithium was released into the Clayton Valley catchment by the weathering of high lithium bearing rocks. They suggest that as groundwater enters the basin, it appears to be dissolving lithium minerals accumulated in valley sediment and is partially recharging the lithium content of the brine, while mining operations have been ongoing. *"Replenishment of brines comes from surrounding Rhyolite, which are the most lithium rich in the world. Brines in the area have concentrations as high as 1000 ppm Concentrations as low as 166 ppm have been used in lithium brine pool extraction methods."* - Author

In addition to the claims covered under the Option, Rodinia through its U.S. subsidiary has staked an additional 284 claims (45,440 acres) in Clayton Valley. These mining claims will form part of the Property under an area of mutual interest clause in the Agreement. When combined with the claims under option, Rodinia now has a total of 50,440 acres under its control, accounting for approximately 90% of the valley. Rodinia has planned an aggressive exploration program to target additional layers of lithium bearing brines which may exist throughout the property.

"Recovery of Lithium From Saline Brines Using Solar Evaporation"

Wayne T Barrett & Bernard J O'Neill Jr.
Foote Mineral Company

<http://www.saltinstitute.org/content/download/1089/6304>

Workman Creek

Location: Gila County, Arizona

Resources: 5,542,000 lbs U3O8 (NI 43-101 compliant)

Ownership: Option to acquire 100%

Database from US\$10 Million in Exploration

Workman Creek, first explored by the mineral exploration arm of Westinghouse, is an advanced uranium project with an established inferred resource. Rodinia inherited an extensive database at Workman Creek compiled from over US\$10 million in exploration and development. Since acquiring its option, Rodinia has upgraded the resource to NI 43-101 standards, staked additional claims, conducted extensive soil sampling, completed MMI pits and scintillometer surveys and completed environmental permitting for further exploration.

"Early indications are that the Workman Creek deposit will be amenable to in-situ recovery (ISR). In the United States, you either add CO2 or sodium bicarbonate plus an oxidant, such as oxygen, to the groundwater. Then you re-inject the solution into the sandstone host formation to dissolve the uranium off the

sandstone. Recovery wells suck up the injectant and you leach off the uranium."
Author

Many Targets Left to Explore

Most of the work conducted by Westinghouse was concentrated on or around the Workman Creek deposit. By the time they abandoned the property in 1981, very little work had been performed on other targets—in particular, on the eight other significant radiometric anomalies that were identified. All of these anomalies are within a ten-mile radius of the Workman Creek deposit and have recently been staked by Rodinia. Rodinia has also staked the most significant of the 46 known deposits discovered during the 1950's staking rush.

Red Bluff Mine

Location: Gila County Arizona

Resources: Historic resource (not NI 43-101 compliant)

Ownership: 100% with 3% yellowcake royalty

A Strategic Acquisition

The Red Bluff Mine is located only nine miles south of Rodinia's Workman Creek project in the Dripping Springs Quartzite uranium bearing unit. The project includes two permitted mill sites, an extensive database compiled by Westinghouse and a historic uranium resource. The acquisition agreement also includes the option to purchase, at commercially prevailing rates, water associated with rights owned by the Red Bluff Mine. Considering the shortage of water in the region and the scarcity of uranium mills in North America, the Red Bluff acquisition represents a strategic milestone for Rodinia.

Other Properties

Space constraints prohibit listing Rodinia's other uranium properties, White Canyon, Mormon Lake and Lucky Boy. Please refer to Rodinia's website.

Conclusion

The rechargeable power needs of our modern society has made lithium a serious player in the commodity markets and something for investors to seriously think about getting involved with. Each and every laptop, PDA, cell phone, and iPod sold makes lithium that much more valuable and interesting.

But with President Obama's agenda to end the United States dependence on fossil fuels and reduce his country's carbon footprint soon the main market for lithium won't just be cellphones, iPods and laptops but the next generation hybrid or totally electric vehicle batteries.

Rodinia's uranium and lithium could very well be an unbeatable combination to

have in one company and in your portfolio, either one or both have the potential to be the next break-out investment.

Rodinia's lithium claims are in the Clayton Valley surrounding North America's only producing lithium plant and Rodinia has two permitted uranium mill sites with the right to buy the associated water close to millions of pounds of their own 43-101 compliant uranium resources.

And lets not forget that there are few permitted uranium mills in the United States and during the past twenty years the mill permitting process time has gone from an average of three years to fifteen.

Lithium and uranium might just become the commodity of choice for investors.

Are uranium and lithium the next big thing? If so, then Rodinia shareholders could do very well being as exposed as they are to President Obama's Energy Revolution.

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"As a general rule, the most successful man in life is the man who has the best information."

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