

# Profiting from the Inevitable Price Increases of Rare Earths in 2018

The rare earth market will have a tremendous 2018. Position yourself now to profit from that.

There are three key takeaways from this article. The first is that while rare earth elements aren't actually that rare (for example, cerium, #58 on the periodic table, is about as common as copper), REE's are extremely difficult to extract and process.

It is technically complicated to separate them from each other and from the host ore, increasing the cost and risk of mining REE's as compared to something more generic like gold or nickel. While they are easy to find, these metallurgic difficulties makes the REE supply response inelastic.

Second, something to compare it to, and for that we look at cobalt, the dominant element in the cathode of a lithium ion battery. For a primer on why cobalt spiked, please look here and here. In summary, Economics101 predicted the increased value in cobalt. It was clear that demand for cobalt was increasing as lithium ion batteries found their way into our toothbrushes, hedge trimmers, drones, cell phones and most importantly our electric vehicles. It was also clear that supply was at risk due to the concentration of cobalt production in the unfortunate Congo.

Risky supply + increased demand = price increases. When we called about cobalt about 20 months ago, it was trading on the LME at roughly USD\$10 per pound. Today, it's around \$27. We're calling for \$35 by year end.

We are calling for the same kind of reaction in the REE

market, and for the same basic reasons.

Which brings us to the the third takeaway, namely, supply and demand. The REE market already had one major surge this century, coming in 2010, but that was in response to China's state-managed cuts in production. Since 95% of the world's REE's come from China, those production cuts caused prices to jump through 2011, when China changed its mind and prices plummeted (a simplistic summary of a complicated situation). In that case, the supply side dictated pricing.

As with cobalt, and the third major takeaway here, is that the next run in REE pricing will be driven by the leveraged push-pull of global product shortage and increased demand.

The U.S. Department of Energy is anticipating a critical shortage of neodymium, europium, terbium, dysprosium and yttrium necessary for green technology development and construction. (US Dept of Energy, Technology Metal Research). With virtually no production outside of China and with the supply response being inelastic, it will take a considerable amount of time for new mines to come online and begin production.

Part of that shortage will be driven by new demand, with possibly the greatest new demand for REE's in electric vehicles. For proof, consider the thought experiment from UBS in May, 2017. UBS's thought experiment was, let's tear apart a Chevy Volt to see what it's made of, and then draw inferences as to pricing of the vehicles and the pricing of the minerals that go into making a Volt. (As an aside, note that UBS' cobalt conclusion was the same as ours, that cobalt will have a great run should the sale of EV's continue.)

One of UBS' many interesting conclusions was that the market for rare earths, neodymium in particular, could face demand shocks in case of a rapidly evolving EV market. The material is used in the e-motor magnets (see page 8 in the report).

There is one more less empiric measurement to consider here, and we acknowledge it is less scientific and more anecdotal. However, it has been a reliable gauge for us in the past.

That gauge is this: there are more REE deals passing through my inbox than ever before. Investors are asking me to find them to good REE companies, and good REE companies are confidently seeking growth capital rather than coming apologetically hat-in-hand. Those two things happening at the same time is a leading indicator that the REE market will be play within 12 months or so.

So our three takeaways and the anecdotal evidence result in one question: do you as an investor think there will be more appliances with lithium ion batteries sold next year, or fewer? If it's more, then load up on the REE companies. If it's fewer, then go long steel.

Our call is that 2018 will be a big year for REE's. Plan ahead to profit from that.

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## **Dr Dreisinger on extraction technologies for Rare Earths**

David Dreisinger, Director and VP of Metallurgy for Search Minerals Inc. (TSXV: SMY), in an interview with InvestorIntel's CEO Tracy Weslosky discuss the company's rare earth extraction patent. The rare-earth-carrying minerals found in their deposits in Newfoundland and Labrador (Allanite and Fergusonite) are highly reactive to acid. This feature greatly simplifies the extraction process by cutting out the labor and facility demanding technique of flotation, gravity, and magnetic separation. Additionally, this ease of extraction

means that they can scale to the right size and meet market demands.

**Tracy Weslosky:** David, I understand that you are considered one of the top rare earth experts in the world. To confirm you have 21 patents?

**David Dreisinger:** Yes, I have 21 U.S. patents in different areas, including the Search Minerals patent.

**Tracy Weslosky:** Could you please share a little bit more about the Search Minerals' patent with our InvestorIntel audience.

**David Dreisinger:** What we figured out Tracy is that our Foxtrot Deposit in Labrador has 2 types of minerals, Allanite and Fergusonite, that carry our rare earths, which are quite reactive with acid. We have figured out a way to directly extract our rare earths from our minerals without having to go through the usual steps of grinding, flotation, gravity and magnetic separation. We directly treat the mineral, cover the rare earths in the solution and we come out with a rare earth product that goes directly to the refinery.

**Tracy Weslosky:** David, could you clarify this for me and for our InvestorIntel audience members that don't fully understand this patent. Obviously this is a competitive advantage for Search Minerals, yes?

**David Dreisinger:** It's a huge advantage for us because we have the ability to scale to the right size to meet the market. We are planning 1,000 tons a day of ore treatment. We don't have to build a huge mineral processing facility. We can directly treat the ore, and go directly through to this mix rare earth oxide. We are located on tidewater in Labrador and have good infrastructure around us. We have a low capital cost and a reasonable operating cost. We are well positioned to hit the rare earth market as it matures and grows in the years ahead.

**Tracy Weslosky:** For everyone out there in InvestorIntel that

may not be familiar with Search Minerals, this is a company that anyone interested in sustainability is going to love...to access the complete interview, [click here](#)

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