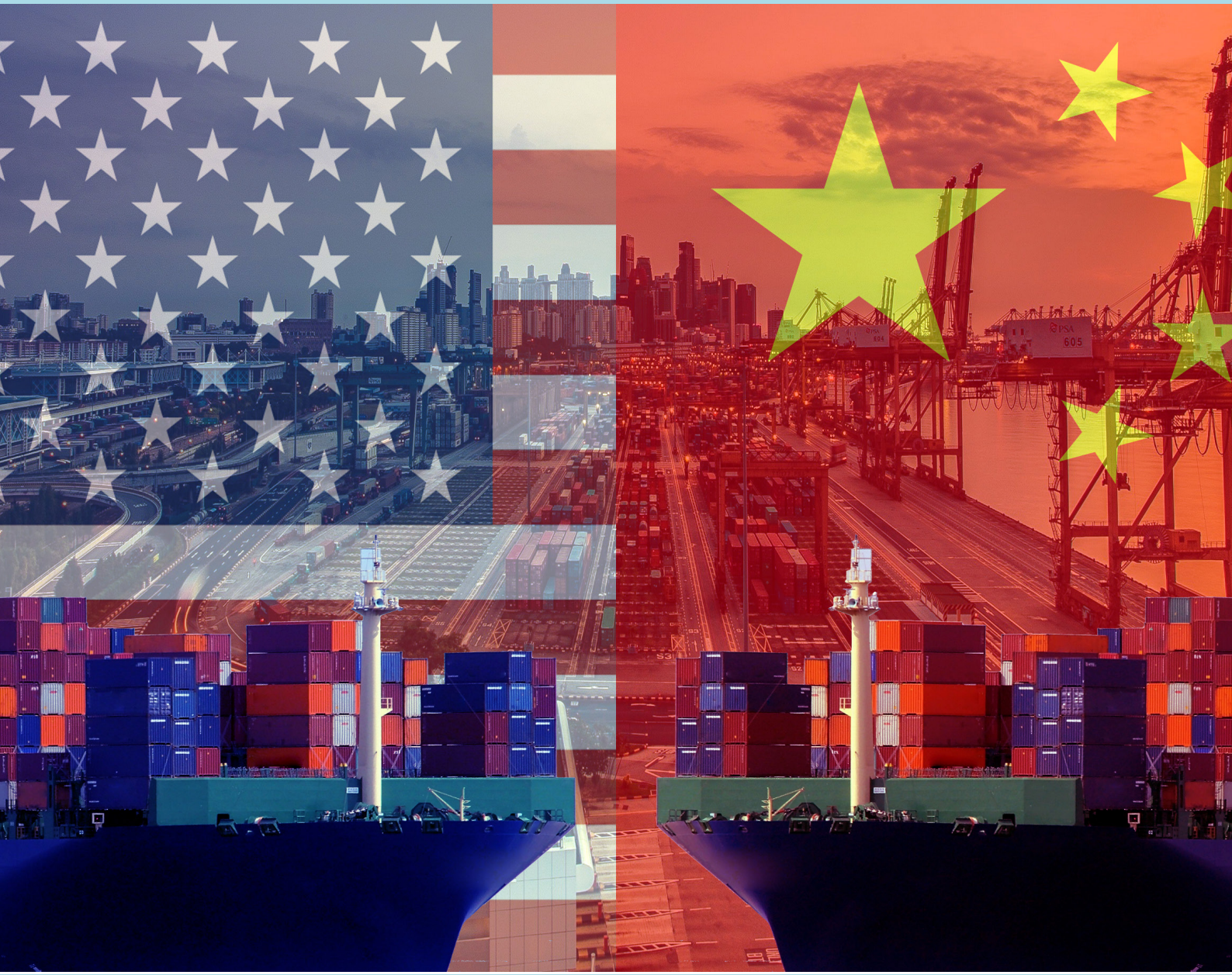
FRONTIER TECH INVESTOR

The One Stock to Buy to Profit from the Trade War



The One Stock to Buy to Profit from the Trade War

Dear Frontier Tech Investor reader,

There are certain things the tech industry simply could not exist without. Some of them are hard to measure precisely: innovation, ambition, belief in progress. Others are easier to quantify, but fickle: think investment capital.

Then there are the real "hold in your hand" things without which hundreds of tech industries would disappear. Take some of the most important and fast growing tech sectors: wind turbines, electric and hybrid cars, petroleum refinery, TV and computer screens, silicon computer chips, high-end battery technology, computer hard drives, and high-intensity magnets.

All vital. All growing rapidly. And all completely reliant on one particular asset.

This presents a huge opportunity for us. What if I told you that with a single investment you could take advantage of all of those vital technologies… by investing in the one thing all of those industries cannot do without?

It's an extremely high-risk, high-reward situation. But I think it's a good a time as any to make our move on it. So what could be so important to so many multi-billion dollar tech industries?

That's simple. Rare earths.

The tech industry's "secret supplier"

Maybe you've never heard of rare earth metals, so let me share with you why they are important and why you should know about them.

There are 17 "rare earth" elements (REEs) or metals, which include the 15 "lanthanides" plus two chemically similar metals – yttrium and scandium. These metals and some of their compounds have unique properties, which make them vital constituents in a wide variety of modern technology products including catalysts, batteries, high-powered magnets, lasers and ceramics.

Some of the uses for rare earth metals include:

- Magnets: Neodymium, and praseodymium (as well as smaller amounts of samarium, terbium, dysprosium, scandium and yttrium). These are vital in the production of highintensity magnets, which have much stronger magnetic fields than "regular" magnets.

- The US Air Force Materials Laboratory discovered that an alloy of yttrium and cobalt, YCo5 , had the largest magnetic anisotropy constant of any material then known. This might all sound a bit technical – after all how many magnets do you use in your daily life? But a huge variety of electrical items use magnets, such as mobile phones, hard drives and power tools. In industry the uses are even wider. They include wind turbines, medical imaging, electric vehicles and maglev trains.

- Petroleum catalysts: Lanthanum, (and smaller quantities of other rare earths) is

…continued on next page…

part of the petroleum refining process known as “fluidcracking”. The sector could not exist without them

- Polishing powders: If you’re making something that needs a polished, high-quality glass finish, then cerium oxide (and smaller quantities of lanthanum and neodymium oxides) is vital. Examples include your TV screen, high quality mirrors and optical instruments. They’re also used in the manufacture of silicon chips.

- Battery alloys: We’re already playing the rise of battery tech in the Frontier Tech Investor portfolio. I think this industry is going to be one of the all-time major growth stories. So far we’ve played the story through our investments in lithium, but rare earths are key to the industry too – particularly lanthanum (and smaller quantities of cerium, neodymium, and praseodymium).

- Phosphors: Europium, yttrium, and terbium, (and smaller amounts of lanthanum, gadolinium, cerium, dysprosium, and praseodymium) are key components in the manufacture of phosphors for LEDs, LCDs and fluorescent lighting. Potential growth rate: 5-8% p.a.

You might have gathered from the above list of attributes that the development of high technology solutions, defence and environmentally friendly energy are all dependent on ready access to rare earth metals.

Annual demand for rare earth oxides (REO) is roughly 168,000 tonnes. But to lump all rare earths in together as part of one market is wrong. Each individual element is affected by its own particular supply and demand dynamic. Certain elements may often be found together – and used for similar things – but we have to be careful and look at things in more detail than that. As you can imagine, that level of detail complicates our analysis of the industry as a whole.

Clearly, rare earths are vital to scores of different technologies – many of which are expected to grow at double-digit percentages over the coming decade. That signals we can expect rising demand for rare earths over the long term.

So who is supplying the world with rare earths currently?

Well, that’s where this story gets even more compelling…

Rare means rare

Meaningful deposits of rare earths – ie, deposits that are large enough to be economically mined – are, as the name suggests, rare. There are trace elements of rare earth metals in many places but there are very few places on the planet that produce them in meaningful quantities. In fact, to all intents and purposes, China has a monopoly on rare earth production because it also dominates the infrastructure for refining them.

The story of how China became the world centre for rare earth metal production is tied to the growth of the environmental movement in the US and Europe. China only became a significant rare earths producer in the mid-1980s. Until that time, production was dominated by two Western companies but increasingly stringent environment standards forced a shift to China where even today there are still lax environmental regulations:

- Rhone-Poulenc of France processed and refined REEs from monazite concentrates sourced from various parts of the world.

- Molycorp, in the US, mined and processed bastnaesite ores from the Mountain Pass

...continued on next page...

mine in California

Monazite (a rare earth phosphate) is a by-product of two things: mineral sands and alluvial tin mining. But there's a problem. It often contains thorium. If you're unfamiliar, thorium is radioactive – which means monazite production caused all sorts of problems in Western nations during the 1990s.

Molycorp's bastnaesite ore didn't have that problem. It started production in 1951. It wasn't until the 1990s, when China began to develop its rare earths operations and drove prices down, that the business began to struggle. Neither Mountain Pass nor Rhone-Poulenc, could compete. By the end of the 90s, China had cornered 90% of the rare earths market.

This brought about a collapse in US production, which fell from 22,200 tonnes (REO equiv.) in 1995, to 10,000 tonnes in 1998. Mountain Pass stopped mining completely in 2002.

Moving on to more recent times, you may well remember the major boom in interest for rare earth metals in 2010 when the Chinese cut off supply in an effort to force companies to site high-tech manufacturing within its borders. That set off a speculative frenzy as Western companies attempted to bring new mines online and opened up long mothballed refining operations. It was no longer about price but national security, and prices exploded on the upside.

Here is a chart of the price of neodymium, which is essential to the production of wind turbine magnets. The metal is quoted in Chinese renminbi/tonne but it rallied from a low of CNY68,500 in early 2009 to a peak of CNY1.475 million in mid-2011; a gain of 2,153% in less than two years. The subsequent decline was almost as abrupt.

Source: Bloomberg

The crash came as China realised it had overplayed its hand and resumed supplying the world with rare earth metals in an attempt to maintain its market share by driving prices to levels that would squeeze out competition. This resulted in a cataclysmic crash for prices, and it took just about every related mining company with it.

The end result was that the reopened Molycorp mine and Great Western Minerals operations are all but bankrupt. Insecurity of supply set off a purge of rare earth metals

...continued on next page...

where they could be eliminated from the production process. The biggest example of this was in the quick transition from fluorescent bulbs to LEDs. However, as I pointed out above, there are a large number of applications where rare earths cannot simply be withdrawn from the manufacturing process – and in fact because prices have been so low, demand has gone up.

The upshot of all this is simple. The tech world needs a safe supply of rare earths in a politically secure part of the world. This means someone has to break China's chokehold on the sector. Enter Alkane Resources, my rare earth metals recommendation.

What metals are more attractive on a cost per ounce than gold?

Answer: The metals that you can't do business without.

Alkane Resources is an Australian company that makes money from gold mining but spends all its profits on developing a heavy rare earth metal mine. You might ask why? Well the answer is simple enough. Rare earth metals are expensive so producing them has the potential to be a major money spinner. Add in the geopolitical aspect and they are sitting on a very attractive asset.

In fact it is one of only two Western rare earth metals company that make money and it is on the cusp of the construction of a billion-dollar light and heavy rare earths mine to add to their business.

Alkane Resources ticks the boxes of having time in the industry, a high-probability asset and importantly it is one, of a very small number of companies, which can realistically bring supply to market.

It is pouring every available penny it generates from gold mining into developing the Dubbo Zirconia Project in New South Wales, close to where it already has successful operations. One of the reasons it concentrates its efforts in one area is so that it has experience with dealing with the local bureaucracy, ensuring it gets the permits it needs to conduct business. The Dubbo Zirconia Project has light and heavy rare earth metals, zirconium, niobium and hafnium – all of which are essential to various high-tech industries in their own rights.

Right now, the company is attempting to raise capital, through offtake agreements, which will help to secure the final funding to bring the mine to a production ready state. The urgency of this attempt is being amplified by the risk of a Chinese moratorium on US exports. That improves the potential bargaining position for the company and increases the potential that it will be able to negotiate favourable terms. The intention of the company to refuse to deal until they get the terms they want is a positive and suggests the mine will be built within budget.

The Tomingley gold mine produces between 60,000 and 80,000 ounces of gold per annum which has allowed Alkane to pay for the pre-build, testing and operational expenses at the Dubbo Zirconia Project since 2014. This has lessened the load on shareholders and also at least partially, insulated the company from the decline in rare earth metals prices that killed off much of the competition. The company has been working on the site for the better part of a decade and it now has a successful flow sheet in operation.

That's no mean feat since Alkane is mining metals that are very similar. Being able to differentiate between them at the mine site, instead of paying to have them separated during refining, is a major achievement and speaks to the long-term goal of getting the mine up and running. That makes sense when we take into account the fact the Dubbo Zirconia Project is situated on one of the largest concentrations of rare earth metals globally and, when eventually on line, is expected to process upwards of 1,000,000 tonnes of ore per annum .

...continued on next page...

Considering how far rare earth metals have fallen, it is worth asking what the breakeven of the Dubbo Zirconia Project is expected to be. The definitive feasibility came out in June last year and concluded that if the Dubbo project, is approved by the state, it could generate A$4.7 billion in undiscounted free cash flow. That estimate is spread over an initial 20-year mine life and it would transform Alkane into a significant world producer of rare earth metals.

That's the good news, the bad news is it is going to take approximately US$1 billion to build the mine. That could be either from a capital raise which, depending on how it is structured, could be dilutitive to current shareholders. It could also be arranged through offtake agreements. In 2016, the company signed agreements with Vietnam to have its production refined there.

Vietnam processed approximately 400 tons in 2018 which was a doubling from the year before. The country is both a producer of rare metals in its own right but is also a destination for smuggled product from China. The country is setting itself up as a competitor to China's dominance. Toyota already recycles batteries from hybrid vehicles in Vietnam. As a result, a rare earth processing industry is rapidly evolving. Back in 2016 Alkane signed a letter of intent with Vietnam Rare Earth JSC (VTRE) which has seen the company process Alkane's ore and help sell it on to Asian magnet buyers.

Rare earth metals processing is rare outside of China. So securing processing facilities ahead of production is a major coup for Alkane because China not only dominates rare earth metal mining but has close to a monopoly on processing the ore. Securing a partner outside of China is the only way to make sure the business gets off the ground and is symbiotic for VTRE because it will free the company from relying on Chinese supply. The VTRE letter of intent is another example of the groundwork having been laid for production to begin.

From a valuation perspective if we look at Alkane's market cap of AU$156.8million, there does not appear to be any allowance for its gold mine. That might be because investors are expecting the operation to be spun off once the Dubbo Zirconia Project is up and running, or maybe it is because people believe the Dubbo Zirconia Project requires a discount. However, it could just as likely be because the rare earths sector has been persona non grata for so long that few people are still looking at it.

In 2018 the Tomingley mine met its full year guidance in July taking its full year production to 78,533 ounces of gold.

I'll grant you it's a small company, but the reality is the Western world needs an independent source of critical metals to build the technological future we have dedicated this letter to**. That is why I recommend Alkane Resources as a buy with a buy up to price of 40c**. I'm placing it within our moonshot category (I think moonshot is self-explanatory but these are plays with the biggest risk but also the greatest reward) because it is a high risk, small company and the competition from China is steep. However, if it can just stick to the strategy it has followed over the last few years without taking unnecessary risk, then it will succeed in becoming only the second company in the Western world to possess a high-quality rare earth element resource and the ability to supply it to global markets at a competitive price. That suggests the current price is modest compared to the potential.

I believe a target of 60c is achievable within the year, and potentially more than that if gold prices successfully find support and rebound. Over the next five years, Alkane Resources should move into a mature product and in that eventuality a price closer to AU$1.50 would be more appropriate. However, the important point is that the company has optionality to the potential for China to try to manipulate the market again – in which case, moonshot might really be an apt moniker.

The risks are that the company fails to secure the partners required to build the Dubbo

...continued on next page...

Zirconia Project. Alternatively, China and the USA could make amends and interest in this opportunity would decline once more. That would cause the price of the metals to trade back down to a lower basis. Considering the volatility of the geopolitical situation, nothing can be fully discounted. The price of gold is also a major component in the company's ability to drive its development projects, and if gold prices decline it will have a deleterious effect on Alkane's share price.

Action to take: Buy Alkane Resources
Ticker: ALK:AU
Price as of 06.06.2019: 0.31c
Buy up to: 40c
Market cap: 156.8 million
52-week high/low: A$ 0.18/ A$ 0.35