

The Great Wall of China and the Critical Minerals Shortage

written by Peter Clausi | January 24, 2023

There are some facts that we just know are true. Lewis Carroll wrote *Alice in Wonderland*. You can see the Great Wall of China from space. The Earth rotates around the sun. And we're suffering from a critical minerals shortage.

Except none of these 'facts' is true. Lewis Carroll wrote *Alice's Adventures in Wonderland* and *Alice Through the Looking Glass*, but never did he pen *Alice in Wonderland*. As for the visibility of the Great Wall, NASA disproved that 'fact' in 2004 with a photo from the International Space Station. The Earth actually rotates around the centre of our solar system's mass, not the sun. And no, there is currently no critical minerals shortage.

The thesis for the critical minerals shortage is this. The world is facing a climate change disaster (agreed, and part of the cause is anthropomorphic). Humans need to change the things we can change to mitigate that disaster (again, agreed). Migrating away from fossil fuels is part of that mitigation (again, agreed). Migrating to Green Energy is the only rational solution (partly agreed). Green Energy needs lithium, cobalt, our friends 59 and 60 on the periodic table, uranium, zinc, cesium and others. There aren't enough of those critical minerals to enable the Green Economy, so therefore we are suffering from a shortage of them.

Until recently that seemed like a self-evident truth. Then I listened to Dr. Jon Hykawy. He and I were on a panel together recently at the [Critical Minerals Institute](#) Summit in Toronto. Dr. Hykawy's thinking is that there are no budgets, no hard

targets, no actual real-life numbers from mining companies or governments for the production and consumption of items like EVs and other rechargeables. There are thoughts from brokerage firms (and we've seen from their predictions for the cannabis industry how accurate those thoughts can be), and there are thoughts / corporate presentations from explorers for critical minerals. There are government vague statements of goodwill and targets twenty years out, but there are no hard numbers. There is no actual data.

Instead, we get [prognostications](#) like, "By the year 2035 the world will need..."

If there is no data, how do we know if there is a shortage of critical minerals? Perhaps we're actually in a surplus situation. Perhaps the supply and needs are balanced.

Pretend I'm building a house. We all know there is a shortage of lumber, right? So how will I build the house without lumber? If I need 800 2x4's, and there is a shortage at the local DIY shop, what do I do? I search other shops. I drive around. I put in orders at various stores for delivery to the job site. If I have to I'll make my own 2x4s. There is no shortage of lumber – I just have to work harder to get what I need. The bottleneck is in the supply chain, not in the lack of lumber.

Maybe the critical minerals 'shortage' is similar. As Mark Chalmers from [Energy Fuels Inc.](#) (NYSE American: UUUU | TSX: EFR often says, "Rare earths aren't that rare." There are a multitude of rare earth and other critical mineral deposits around the world. Any geologist with any experience can point to good deposits of critical minerals, begging for further work and exploitation. I'm only a lawyer and I can think of 5 critical mineral deposits in Canada deserving of advanced geologic work. Why doesn't that work get done?

Because it's not the deposits that are in shortage. What the world lacks is the processing capabilities to exploit those deposits. The world lacks enough metallurgists to work them all. We lack engineers and chemists who can figure out a way to economically separate the good stuff from the host rock to create saleable product.

The world doesn't have a critical mineral shortage. The world has a critical mineral processing shortage.

I applaud the North American approach, albeit recent, to defend its mining assets from 'bad actors'. Those assets are available to be developed domestically, with their output to be consumed by the domestic supply chain. What we need now is investment into mining schools for more and better highly [skilled talent](#). We need investment into new research, knowing full well some research will result in successful new processes and some will not. That's the nature of science. We need the mining assets working together to create processing facilities to eliminate the bottleneck of a lack of technology, not in competition. We need true leadership on these complex issues, from government and First Nations and mining companies, all working together for the benefit of all.

And with advances in processing technologies, some of what we think today may be in shortage in 20 years will actually be in surplus or not be needed at all. The need for lithium in the electrolyte may be reduced or even replaced by a much more accessible element.

You can't see the Great Wall of China from space and the world does not have a shortage of critical minerals. The world has a shortage of critical minerals processing capabilities. Let's not have governments waste money asking the wrong question or even worse believing the wrong fact.