Avoiding A Critical Technology Metals (Lithium, Cobalt and Nickel) Disaster in the Real World

written by Jack Lifton | August 12, 2021

Mineral economists advising the U.S. government make mathematical models to predict real world outcomes even though they do not know if they have failed to include an important, even critical factor, or if they have the right data, until the model, as it always does, fails to reproduce real world measured results. Even then they do not know what is missing, because if they did, they would have included it in the first place. Because Cancel Culture now dominates the increasingly authoritarian and intolerant (of "different" ideas) world view of academic administrators, even physical scientists have succumbed to the nonsense of calling out, as biased, and refuting, various data, and its interpretation, which in the past was regularly included in models, thus distancing the models' results even further from reality.

The mistakes this incomplete or even just false modeling makes in the social sciences are bad enough, but in the case of mineral economics it could be fatal to the continuation of American global military hegemony.

Earlier this week, a publication called the "Rare Earth Observer" put it quite well. The author said that "… the Green New Deal utopians have no idea of the cost and difficulties of creating an entire new infrastructure. Nor do they understand that a new infrastructure would generate enormous carbon emissions by itself. ***Nor do they understand that the minerals***

and materials that go into electric power and batteries and new electricity grids and so forth are simply not available to the United States at the present time….”

American Federal bureaucrats are almost uniformly drawn from the academic or governmental staffs’ worlds. Hands on experience is rare although STEM degrees are not.

The models used by the United States’ Geological Survey, once the mineral world’s gold standard, today describe known, developed, mineral deposits (aka, mines) by calling them “resources.” But a resource is on a ticking countdown clock. The “life” of a mine is the length of time it is projected to deliver a mineral, profitably. This means in practice how long the mine’s ore grade will be high enough to make recovery and extraction profitable with known technologies. The minerals that might be able, someday, to be recovered ***economically*** are called “reserves.”

A mineral not in parts of the earth that is currently accessible physically or technologically or both is known as a reserve, a very fluid term. The ocean or an asteroid can be styled as a deposit and then the economically unobtainable minerals become “reserves.”

The only minerals that matter are those that can be extracted economically with proven technology.

Here is the reasoning of an American bureaucrat, or, sadly, a procurement officer at an American OEM car maker: To produce 50% of our product line as BEVs, battery powered electrics, will require enough lithium, cobalt, and nickel to make 10,000,000 100 kWh lithium ion batteries per year. This will require 160,000 tons of lithium annually. **That is twice as much lithium in total as was produced in 2019.** But the learned mineral economists at several New York and London based banks have

written that lithium production by 2030 will be 14 times today's level, so using this wisdom plus my reading of the global lithium "reserves" at millions of tons in government (drum roll) official publications, such as the Federal Reserve's "Dick and Jane Can Produce Anything You Can Dream Up at No Added Cost," I, the bureaucrat or sourcing executive, conclude that I can make as many BEVs as my President directs, so there. By the way, as the production of lithium increases and is increasingly expensive the cost will go down due to "economy of scale."

In summary, to make the world green simply suspend rational thinking, real world data, learned expertise, and, last, but not least, common sense.

If this nonsense persists all critical technology metals are going to be very very expensive as resources are used up.