

Net Zero Carbon – “Your Country Needs You!” aka “The Constancy of Purpose”

written by Steve Mackowski | February 23, 2023

That’s right. Your country needs you! Because it is every one of you (us) that needs to contribute to the goal of Net Zero Carbon if there is to be any chance of reaching the goal. Note here that it doesn’t really matter if you believe (or I believe) that the goal is attainable. What does matter is that if the goal is to be reached then the discussion below is how it can be achieved.

Since this is [Article 6 in my series](#) and I am expecting it to be the last, I wanted to do something catchy, hence Uncle Sam. But what I really want to highlight is almost the name of the next James Bond or Mission Impossible film – “The Constancy of Purpose”. The most important aspect of the whole approach. I’ll get back to that.

So, your mission, should you choose to accept, is to be part of the solutions that need to be achieved for the goal of Net Zero Carbon to be attained. This message will not self-destruct after 30 seconds, so you don’t have to hurry. You can re-read before you commit. And when I say to be part of, I mean actively engaged. It’s your part of “The Constancy of Purpose”.

1. Nuclear power. Any new additional power requirements of any size are to be provided by nuclear power. Any replacement power following a fossil-fuelled power station shutting down must be provided by nuclear power. Why? As previously demonstrated there will simply be not enough

[Critical Minerals](#) developed to supply our power needs from the renewables sector. There will also not be enough [STEM graduates](#) to fulfill the resources required. So, you have to be actively engaged in the development or expansion of the nuclear power solution.

2. Solar power. You have to accept that large scale remotely located solar power is a waste of the limited resources highlighted. There is not enough lithium to make enough solar panels. The need to co-develop long transmission systems and battery back-ups is an inefficient use of resources. Rooftop solar is fine as it fits into existing infrastructure, but a solar farm in the center of Australia with 1,000 kms of new high voltage power lines. Methinks not. And using the power to produce hydrogen! Well, let's get it straight. No government subsidies are allowed anywhere in this discussion. If it isn't self-sufficient economically, it isn't a solution. It's part of the problem.
3. Wind power. Another huge waste of limited resources for the same reasons as above. Magnets are better utilized elsewhere. End of story.
4. Electric cars. The symbol of inner city wokeism. I'll only browse here. Just imagine the upgrade to your district's electricity network needed to charge even 20% of electric cars. Just imagine who is going to pay for the upgrade of the apartment block's electrical system to accommodate a significant increase in demand. Many thousands of dollars per apartment! Is it an efficient use of resources to span our countries with additional electricity transmission infrastructure? Resources are short remember! So, stick to your guns (oops, cars). OK. I'll let you have a hybrid!
5. Human Resources. Once we have the issues above well planned and in train, we can then define the [STEM needs](#) to achieve the goal. All levels of our education systems need

to change. And you have to be part of that. Whether as a parent or grandparent, or maybe just a concerned voter influencing our governments, we have to fix this. You have to encourage your children, you have to lobby the governments. The volume of STEM graduates needs to dramatically expand and be focussed. “The Constancy of Purpose” again.

Now sure, everyone has their part to play, but tokenism is not healthy. As [reported](#) in The Australian Newspaper, Sunday, February 12, 2023, by Robyn Ironside, is having the “greenest” airline really that important? When the solution requires orders of magnitude more production of “sustainable”, but still carbon dioxide emitting fuel at increased costs?

These “solutions” are wokeisms in play. Change the definition of sustainability and it becomes OK. Well, that is not acceptable. Net Zero Carbon is a real goal and is not to be fudged. I get pretty enraged when I read that EU power stations are burning purposely grown “wood waste” instead of coal and claiming zero carbon emissions. This is fixing the books, not fixing the problem.

“The Constancy of Purpose”

“The Constancy of Purpose”. Who does this apply to? Well, if the world is going to achieve the Net Zero goal, well then, the world needs to have “The Constancy of Purpose”. LOL sorry, couldn’t help it. The developed world and the developing world are streets apart here. Only the developed world is chasing the goal. The developed world wants the developing world to also chase the Net Zero goal. But how can they? In a resource-constrained world, do you really think that the developed world will allow those limited resources to be deployed in developing

countries?

Maybe they should if the overall balance to Net Zero indicates that is the most resource-effective answer. Methinks not going to happen. Our political classes are too focused on their own political survival (and ideological orientation) to let valuable resources out of their grasp. That got me thinking about how to determine resource utilization effectiveness on a global scale. Another time, another series. But it will come to that distribution question. Why? Because there will come a time when the developing countries will see that they are being starved of resources by the developed world to attempt to meet their own Net Zero goals. And sorry developing world, you can't have any! Not a pleasant thought.

So, what chance Net Zero? [An article](#) from The Australian newspaper, also on Sunday, February 12, 2023, by well-acknowledged editor, Greg Sheridan, seems to present the argument that is most often proffered.

Net Zero Carbon?

Again. Very negative. My views on Net Zero Carbon? The Critical Minerals developments needed can be addressed. Will take a major shift in Government approvals timing though. The choice of power technology to be nuclear focussed is again achievable but will take some guts from some governments. The Human Resources issue is again achievable, but it would mean the end of the woke revolution in our education system. Achievable yes, in practice – No!

Net Zero Carbon by 2050 on a global scale? No chance! The emissions from the developing world will continue to grow. They will not have access to the resources needed. Well, how about on a local scale, by Country say? In the US or Australia, or the

EU? “The Constancy of Purpose” test gives me no confidence. Twenty-five years of focussed efforts to achieve a goal that not even a majority of the population understands, acknowledges, or prioritizes? Methinks not.

We will just have to advance at a pace that results from ignoring the requirements that could move toward the answers. No wonder the Cheshire Cat has such a wide grin!

However, if you still want to do your bit in the Net Zero challenge, remember. “The Constancy of Purpose” may be coming to a theatre near you. So, thanks to movie-world for the license and to Forrest for the end quote: “Well, that’s all I have to say about that.”

Alphamin set to benefit from the ‘staggering’ 22.76% rising tin prices over the past month

written by InvestorNews | February 23, 2023

One of the bigger trends of 2023 looks like being the reopening of China following 3 years of the COVID-19 pandemic. There are several ways to play this thematic – Chinese funds/ETFs, iron ore, but how about tin? The tin price is up a staggering [22.76%](#) over the past month (at the time of writing).

Trading Economics [states](#): “Tin futures were trading around the \$30,000 per tonne mark, a level not seen since June 2022, as top consumer China made efforts to reopen and support its economy, thus lifting the outlook for demand.”

The 10 year tin price chart shows tin prices recovering in 2023 now at US\$29,536/t

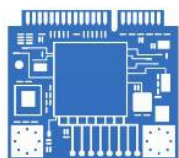


Source: [Trading Economics](#)

Tin is a key metal for the green energy transition as it is used in electric vehicles and solar panels. This is mostly because tin is used in solder ([49%](#) of tin demand comes from solder). Solder is used in practically every electronic product in the world today. As production and demand for consumer electronics recover in China that bodes well for tin prices.

Tin is the hidden green energy transition and consumer electronics metal of today and the future

Energy and technology will drive future tin demand



Computing and
robotics



Energy
generation



Autonomous and
electric vehicles



Energy
Storage



Energy
Infrastructure

Source: [International Tin Association](#)

Alphamin Resources Corp.

[Alphamin Resources Corp.](#) (TSXV: AFM) (Alphamin) currently produces ~[4%](#) of the world's tin (Sn), or [~12,000tpa](#). Alphamin [state](#): "At a tin grade of roughly 4.5%, Mpama North is the world's highest-grade tin resource – about four times higher than most other operating tin mines in the world."

Alphamin is a low-cost tin concentrate producer from its high-grade deposit at Mpama North at their [84.1%](#) owned Bisie tin mine

in the DRC.

The 2022 Resource estimate is an Indicated Resource of [0.84 million tonnes at 2.53% Sn](#) (21,400 contained tonnes of Sn) and an Inferred Resource of 4.99 million tonnes at 2.5% Sn (124,750 contained tonnes of Sn). Alphamin has recently managed to increase the Mpama North Resource as you can view in the video [here](#).

The exciting part is that Alphamin is a low cost producer so is nicely leveraged to tin prices. Even better is that Alphamin intends to expand the mine's production from 12,000tpa Sn to [~20,000tpa](#) Sn from FY2024, which would equate to about [7%](#) of the world's tin supply.

As [announced](#) in October 2022, Alphamin's Mpama South development project is progressing according to plan. Alphamin [stated](#): "The project is progressing on schedule for targeted commissioning in December 2023. Overall project completion is at 18.6%, and 84.3% of the procurement requirements have been finalised and ordered. The project is not expected to exceed its total cost estimate of US\$116 million."

Alphamin's milestones and goals and Mpama North & Mpama South shown below

KEY MILESTONES ACHIEVED



Exploration to production in less than 6 years – now targeting production expansion and resource extensions



Source: [Alphamin company presentation](#)

Alphamin exploration continues

In addition to drilling for resource extensions at Mpama North and Mpama South, Alphamin is exploring for more tin deposits on its license areas. The Bisie Ridge Phase 1 new discovery has been accelerated with ~90 drill holes planned on six highly anomalous targets, following which a Phase 2 campaign will delineate any discoveries or else in fill the most prospective targets.

Closing remarks

Alphamin Resources is a pure tin play highly leveraged to the tin price. Being a low cost producer allows Alphamin to remain profitable throughout the tin price cycle. As China reopens early price indications are suggesting 2023 will be a good year for tin, and hence the quality tin miners.

If Alphamin can successfully bring on Mpama South into production and further grow their resource, then the outlook is

very bright for Alphamin this decade.

Alphamin Resources trades on a market cap of [C\\$1.273 billion](#) and a PE of [8.33](#). One to watch out for in 2023, especially if tin prices keep rising.

Get Ready, Get Set, Go – EV Demand Raises the Boron Bull Flag.

written by InvestorNews | February 23, 2023

NASDAQ listed 5E Advanced Materials is building a vertically integrated boron products operation in California to supply growing EV and decarbonization demands

Today we take a look at the chemical element boron and at a NASDAQ-listed boron company with a globally significant boron resource in California. ‘Boron’ is element number 5 in the periodic table and its demand is growing as we move towards a green energy and electric vehicle (EV) future. That is because boron is lightweight, very hard (boron carbide), and has strong heat and corrosion resistance. It is also quite rare, making up just [0.001%](#) by weight of the Earth’s crust.

About 2.5–3.0% of an EVs [weight is boron](#), or put another way there is about 46–50 kg of boron in the form of alloys in a passenger EV. Examples of boron use in EVs include high-strength

boron-infused steel and boron containing magnets used in drivetrains. Boron alloys and compounds are also used in solar panels and wind turbines, in micronutrients and super fertilisers, in nuclear reactors, and in military applications such as boron-infused tank armor plating.

Boron demand is increasing especially in the areas of green energy (decarbonization applications). Boron demand is forecast to grow 10x by 2050, with a supply gap (deficit) forecast to widen from the end of 2022. [~60%](#) of global boron supply comes from Turkey and its state-owned assets and 85% of global supply comes from just two companies (Eti Maden & Rio Tinto).

Note: When you hear about electric motors being made with NdFeB permanent magnets, the 'B' refers to boron.

Boron uses 

Source: [5E Advanced Materials company presentation](#)

Boron supply gap forecast from end 2022 as demand increases and the new pipeline of projects supply is small



Source: [5E Advanced Materials website – Boron 101](#)

5E Advanced Materials Inc.

5E Advanced Materials Inc. (NASDAQ: FEAM | ASX: 5EA) (5E) core business is founded on its low cost, light environmental touch, boron resource in Southern California, USA. [According to](#) 5E: “The Resource is designated Critical Infrastructure by the U.S. government and is the largest known conventional boron deposit globally.”

5E is building a BORON⁺ Advanced Materials business that operates across the value chain from resource extraction, to refinement, to distribution. The business is backward integrated from customer product offering into processing and extraction methods. In other words, 5E finds the customer first and then works backwards from there.

The 100% owned Fort Cady Project in Southern California has a Total Resource of [~327 million tons at 8.22% boric acid content](#) and 323ppm lithium. The Total JORC Code Compliant Mineral Resource Estimate is [120.44 million tons at 6.51% B2O3, 11.57% H3BO3](#) and 344ppm lithium. Either way, it is a very large resource with a high boron content and some lithium by-product.

5E has already achieved an eDFS for Fort Cady and has all substantive permits in place. Next steps in 2022 will include a BFS, a small scale boron facility, and advancing off-take and potential partnerships. Beyond that production is targeted to begin by 2024+, subject to the above steps being completed.

5E's [management and board](#) have a wealth of relevant experience including CEO Henri Tausch having worked for Honeywell and COO Tyson Hall having worked for lithium giant Albemarle.

There are very few near term new boron projects, especially now that the Serbia government has blocked Jadar



Source: [5E Advanced Materials company presentation](#)

Closing remarks

It is quite interesting that an EV has about the same amount of boron as lithium. As a critical technology material boron's use in rare earth permanent magnets is, indeed, critical. As an

essential structural material boron's use in the many alloys and glass in an EV is necessary for light-weighting of the vehicle. While there are 100's of junior lithium miners scrambling to meet future lithium demand, there are very few companies focused on boron. Therein lies the opportunity. Even more important is the fact that 5E has a USA based project. It should not be overlooked, either, that 5E's boron deposit is the largest one known in the world.

5E has recently listed on the NASDAQ under the ticker "FEAM" so this should start to raise more awareness about the company and the 'under the radar' demand boom for boron potentially ahead as the green revolution takes off.

5E Advanced Materials Inc. trades on a market cap of [US\\$801 million.](#)