Tawana Bain and ACRG's Drive for a Sustainable American Supply Chain through Net-Zero Mineral Production

written by InvestorNews | February 5, 2024

In a recent Investor.Coffee interview conducted by Jack Lifton, Tawana Bain, the CEO of American Clean Resources Group, Inc. (OTC: ACRG), shared insights into the company's innovative approach to contributing to the American supply chain through the production of net-zero minerals and metals. Bain highlighted the company's focus on utilizing tailings, which significantly reduces energy consumption by 90% compared to traditional mining processes. The venture is set to power its operations entirely off-grid, leveraging renewable energy platforms developed on their property located in Tonopah, NV, a community nicknamed the **Queen of the Silver Camps** for its mining-rich history.

Bain discussed the strategic position of their property near the developing lithium industry hub, emphasizing the potential for neighboring facilities to benefit from the excess power generated by American Clean Resources Group. Addressing potential roadblocks such as permitting and tribal disputes, Bain expressed confidence in overcoming these challenges through the support of a robust advisory group and strategic alliances with relevant agencies.

Reflecting on her background, Bain shared her extensive experience in environmental consulting, strategy, and community outreach, marking her public debut in a leadership role with this project. Lifton praised Bain for identifying a critical need in energy production and for her efforts to educate the

investing public on the benefits of the company's model, beyond political considerations. To access the complete interview, click here

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American Clean Resources Group, Inc. (ACRG) is poised to be a trailblazer in renewable and environmental development within the United States. Committed to strengthening the American Supply Chain and advancing Climate Change Reduction through comprehensive Resource Management, ACRG aims to spearhead the largest renewable energy project in the U.S. located in Nevada's Big Smokey Valley of Esmeralda County, near Tonopah. Our strategic advantage lies in controlling the largest renewable energy site in the country, holding water rights, and possessing vital infrastructure. Over the past 15 years, we've retained ownership despite lucrative offers, aligning with our strategic vision to construct the United States' largest renewable energy park focused on processing Gold and Silver.

Our strategy involves leveraging existing assets and pursuing strategic acquisitions across air, water, and land domains, aligning both vertically and horizontally. Additionally, we aim to lead in reprocessing mineral waste and providing toll, specialty, and custom milling services for precious and rare earth metals.

To learn more about American Clean Resources Group, Inc., click here

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

written by Steve Mackowski | February 5, 2024

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.”

Net Zero Carbon and other “planning dilemmas” Part 2

written by Steve Mackowski | February 5, 2024

In Part 1 of this series, I introduced the concept of going to the plan’s end result and working backwards through the planning process. I recommend this for some of the more difficult planning tasks, as it eases the mental burden. By that I mean, when faced with the challenge of planning for the world to meet a net zero carbon by 2050, the mental challenge is enormous. So, let’s break it down.

A world that is meeting a net zero carbon target by 2050 will have to have achieved many linked but somewhat individual tasks and schedules. There are simply too many individual tasks to list, so I’m going to try and sub-group so that we can at least get a conceptualized overview of the challenges ahead.

1. Physical Resources.
2. Technology.
3. ESG Concerns.
4. Power Requirements.
5. Human Resources.

I’ll try and cover each sub-group and provide linkages as we develop our thoughts. FYI. I have heeded my own advice here and started the process from the end and worked backwards. What you’ll see are my thoughts and impressions formulated over many years in Critical Materials, ESG management, and planning, coming together hopefully with each article to get us all on board and with a clearer, more transparent, an honest view of the Net Zero Carbon issue, a Net Zero future and its requirements.

OK. Let’s start with Physical Resources. You will have all been made aware by various reports that the amount of Physical Resources required for electric cars, wind turbines, solar power farms etc. is enormous. If not gigantic. It is certainly numbers of orders of magnitude bigger than current production levels. It is staggering to try to imagine 10 times (for example) the production of lithium, copper, chromium, rare earths, etc not to mention the steel and aluminum required for associated infrastructure. But let’s put the issue of scale aside for the moment. I want to first dispel the notion that recycling will be the answer. I am not going to say that recycling is not important and should not be avidly pursued, but what I am saying is that recycling is not the “big-ticket” answer to the Physical Resources requirements. I’ll demonstrate with a mathematical exercise.

Let’s look at the current level of batteries (as an example). We need an assumptions list. We need a current output level, let’s use a starting point of 100 units. Each battery will last 10 years. The growth in the need for batteries is positive 10% per year. These absolute numbers are not really important in this discussion. It is the understanding of where they take us that’s important. OK. Question one – how much recycling can you do in year 1? Answer – None. There are no batteries to be recycled. They last for ten years! So not until year 11 are batteries available for recycle and these are the now “dead” year 1 units. 100 of them only. Then 110 in year 12. 121 in year 13.

I know I have simplified the situation but as I will repeat throughout this series of articles, it’s the overall impact that needs to be understood, not the detail as such. Look at the following table of units needed to meet demand, the resources needed versus the effectiveness of recycling capacity.

Year	Batteries Demand	Additional Capacity to supply	Recycle Available	Cumulative Additional Capacity	Utilize Recycle to get new Capacity
1	100	0	0	0	0
2	110	10	0	10	10
3	121	21	0	31	31
4	133	33	0	64	64
5	146	46	0	110	110
6	161	61	0	171	171
7	177	77	0	248	248
8	194	94	0	352	352
9	213	113	0	465	465
10	234	134	0	599	599
11	258	158	10	757	747

So, it’s not until year 11 that recycled batteries have any effect. The battery demand and the resources required will have increased between 6 and 8 times by then. In fact, it won’t be until at least year 15 that any noticeable effect of recycling will be noticed. So, recycling may be a small part of an eventual solution, but it is not the saviour. Only increased output is. And increases in mining, processing, refining and manufacturing of this scale is to say the least challenging. And to meet the time challenge of 2050?

Well, let’s muddy the waters of our planning process a little more and introduce the complication of co-dependence. And by that I want you to think about the example of making electric cars. To make one car you need enough of the various components to do that. Obviously! But what happens if you do not have any of component X? (Think of the current microchips issue for

example). The whole schedule stalls until the production level of component X meets the needs for that volume of production. Now think back over the last ten years at the junior rare earths space. Why haven't they developed the capacity to meet the predicted needs? Well, the end user, the car companies in this example, didn't expand as fast as first thought (or is that hoped?) and the explorer couldn't get market contracts to justify getting the development capital. So, the co-dependence of the car company and the junior explorer, stalled the junior's development. In fact, it shut down many of the juniors. Those that managed to stay alive are now facing more years to get back up and the co-dependence will again surface as the slow ramp up of rare earths output will directly impact the growth of the output of electric cars! What is the impact of this co-dependence of mining development for the rare earths in the magnets needed for electric car output requirements in 2050? It will take some planning. Especially when you throw in the mix the co-dependence of all the other resources required, particularly those critical materials with a long timeline to development.

Another term I use is cross-dependence. Again, in the electric car example, the vertical supply chain for each element or assembly, or whatever, can be influenced by a separate although essential vertical supply chain. Let me explain. If you need as an example to create a vertical supply chain for each of three new components, say, the magnets (from rare earths), the batteries (from lithium) and microchips (from silica), will the planning process allow for the indefinite delay in one or more of the components? That is to say, can the rare earths development timeline needed for the magnets be affected by an extensive delay in the creation of a process, or development of the resource, for say, lithium? Or silica? Of course, it can. The justification for the planned development of one is impacted

by the achieved development timeline of the others. The car needs a number of successful developments in critical minerals in separate supply chains (and other components) to reach the final stage, producing the required number of vehicles by the timeline stated. And they have to have matching timelines otherwise the imbalance will cause a market condition where the component being developed the fastest may be stalled by the delay in the component being developed the slowest. Although co-dependence is taught in most Economics courses, as it is standard supply chain logic, cross-dependence has become much more odious today as the need for new components comes to light. And this is only the Physical Resources. Can you see this isn't a simple "Supply Chain" issue. Its not one component we are looking at here. It's many. It's a "Supply Array" issue!

Now we are getting started! Now consider the implications of the Republicans' defeat at the last USA elections. Did that have implications for the 2050 target? You betcha! As will the EU response to the looming energy crisis across Europe this winter. I'll call this dependence Geopolitical or GP-Dependence. So, we now have added another dimension to the planning process. The planning dilemma has to deal with a "Supply Matrix"! Wasn't in my Economics 101.

Now, that's just for electric cars! You now have to throw in co-dependence, cross-dependence and GP-dependence with all those other required developments that together meet the 2050 target, some of which it has been stated that the technology does not yet exist! And remember, all of these developments are competing for the same resources! The Critical Minerals at least. This "Planning Dilemma" is on a scale probably never seen in the Western World. Well, not since World War II.

I think that's enough on the Physical Resources issue. There have been many articles, reports etc on this topic from others,

but don’t forget the reasoning behind the issues of recycling, co-dependence, cross-dependence and GP-dependence. It will come back later.

I’m looking forward to reviewing the Battle of the ESG Titans online debate as ESG is a passion of mine. Since the Battle was live at 3am Thursday morning 15th December in my part of Australia, I will change the order of the 5 sub-groups listed above for discussion. I’ll discuss ESG concerns next (article 3), to incorporate thoughts from The Battle, and discuss Technology in article 4.

I’m thinking: have a great time over the holidays, stay safe and see you next time.

Net Zero Carbon and Other “Planning Dilemmas” starting with Rare Earths

written by Steve Mackowski | February 5, 2024

In the last 5 years since I last wrote for InvestorIntel, as they say, there’s been a lot of water under the bridge. But 5 years ago, could you have predicted the actual water flow? Could you have had a target? Where is Macca’s head space at? Well as usual I’ll get there. So the last 5 years have been part of my “eco-retreat” project taking our property to almost pristine Australian forest, complete with all the native wildlife that goes with that. Achieved – yes! To plan – pretty much. Took longer but a few un-planned for health issues slowed me down,

but overall happy. So a good plan? Well yes, but why was that? I'll get back.

So the majority of Western nations are planning for some sort of climate change management by targeting "net zero carbon". Is that a plan? Is that an inspiration? Is that a target? Well, a personal anecdote may help to answer that. Twenty odd years ago I was asked if I could develop a plan to mine and process the resources of an island. "What is the time horizon", I asked. "That's part of your plan", was the response. OK! Background necessary to consider. The island is currently a National Park and has been granted First Nations custodianship. The resource is conventional and processing is not difficult. So what is the plan going to allow for? First point to learn here is do not start at the beginning and progress forwards, i.e. resource definition and all the normal stuff. That will consume a lot of time if you can't get a plan that has any chance of working. Start at the end and work backwards. What must have happened to allow such a controversial project to develop? Remember, this is First Nations and National Park. Was the request by the MD for a plan? A verification of his dreams? A realisation into practice through a lofty target? What is akin to "net zero" when there is no detail, no costs, no resources? In fact, it is worse than that since it has been stated that net zero will need "as yet unachieved technology" to get there.

Let's look at rare earths for a while. Circa one hundred years ago, some enterprising alchemist discovered the rare earths group (I am not going to write a history paper). He dabbled and found out that a mixed rare earth alloy could be used as a flint generator. Misch metal was born. Did he have a dream to produce magnets for electric cars? Not yet! A couple of decades later when catalytic converters were developed for motor vehicles, the use of lanthanum oxide powders was big news. Poor cerium prices went through the floor. Electric cars the dream yet? Not yet.

Not until the development of computer chips and the need for cerium polishing powders, did the rare earths scene buzz again. Electric car dreams? Not yet. Then came magnets in the 90’s and the boom really starts. Boom goes neodymium-praseodymium (Nd-Pr) for magnets, boom goes Yttrium (Yt) for lighting, then boom goes Samarium (Sm), Gadolinium (Gd) and (Dysprosium) Dy for better magnets. Then boom for electric cars? Not yet? Why not after 100 years of technical development hasn’t the dream/plan/target of electric cars (and net zero?) occurred? It needed the western world to commit to the target of net zero with the goal of saving the planet. So, could have the dream of electric cars been planned for 100 years ago and if so what would it have looked like? A series of as yet unknown new technologies with an unknown timescale and an unknown cost? Sound familiar with net zero planning?

Back on rare earths today. We are finally seeing traction on some of the junior explorers of the early 2000’s. Take Arafura Rare Earths Limited (ASX: ARU) as an example. For many years the resource was known, the technology was defined, the way forward was clear, but what were the “planned” construction dates? Three – five years post Bankable Feasibility Study. That was over 10 years ago! What was wrong with the planning? Nothing! The caveats of financing and marketing achievement and timing were not met. Not met until this year when the motor companies finally saw their electric car future (a future they were perhaps forced to see) which led to financiers being amenable to the funds. I want you to see a process here, that is the planning process broken down into individual steps and timelines. Did the mining company meet its resource definition target? Yes. Did they reach their process definition target? Yes. Did they meet their BFS target? Yes. Did they meet their marketing and finance targets? Yes, but it took an extra 10 years. What do you see here? Some targets met as planned, other

targets met but later than originally planned. What is jumping out? Hopefully, you can see that Arafura met the plans that were under its direct control – the resource, the process, the engineering, the costing. The marketing and finance however were not under their control. They could perhaps influence the market and the financier, but they could not control. Hence the delay. So what's the lesson to be learned here? Yes you have to be good at the resource part, the chemistry and the engineering but you have to have the toughness, the hanging-in there, and the ability to stay alive until those uncontrollables that are part of your plan align and the main wheel starts to turn again. You can influence but you cannot control. What has this got to do with net zero planning? I will come to that in my next piece but I know you are waiting to find out about the plan to mine a resource on a First Nations National Park.

Imagine an island. A paradise. A National Park that has had its custodianship legislated to the First Nations people. It has a resource, a very valuable resource that you have been tasked to define a plan for its development. So what did I do. I started at the end. Asked the question: "What are the conditions that would need to be satisfied to achieve the goal". (Keep the net zero in the back of your mind. All will be revealed.)

Condition 1. The First Nations custodians must be happy. Condition 2. The Governments and their bureaucracies must be happy. Condition 3. The multitude of ESG focused groups must be happy.

I'll stretch the word happy and settle for appeased. What would appease these groups? Well my first thoughts were around a serious military conflict justifying a Commonwealth takeover of all resources and territory, but I thought that was stretching the justification too far out of my tasked planning horizon. So a few examples. Doesn't matter how real you think they are, they

are just possibilities. The important bit comes after.

1. An animal of world significance is on the island and is looking at extinction unless some serious and expensive actions are taken. Or.
2. A similar situation with the whole ecosystem. Or.
3. First Nations heritage is under severe threat.

All issues require significant funding, but there is no money available. Only the development of the resource and the satisfactory rehabilitation will provide the funds to continue. Never mind the reality part, that’s out of my control. But what is in my control is why should the government select my company to be trusted to do the development. These are the things that you can control. These are the things that you can do now and in the future that will develop your toughness and increase your chances – while hanging-in there, and staying alive until those uncontrollables that are part of your plan align and the wheel starts to turn again.

How much water did I plan for to go under my bridge, in my retreat rainfall, catchment and erosion plan? The 1 in 100 year rain event was my guide. But got 2 such events in 2 months. An event out of my control. I am still recovering/upgrading and yes, changing my plan. See you next time for more on the “Net Zero” planning process.

What’s this about Johnson-Matthey exiting the EV battery cathode business?

written by Jack Lifton | February 5, 2024

The legacy carmakers and their supply base both face bankruptcy if they make the wrong decisions on entering the “transition to EVs” markets. This is because the OEM automotive industry is, along with semiconductor manufacturing, one of the most capital-intensive industries in the world. Just like with a 200,000 ton DWT ship, inertia being the problem on the one hand and prior deployment of massive amounts of capital being the issue on the other, the OEM automotive industry cannot change course in a short time, and so must be careful to choose the right path (allocation of capital) before starting the voyage.

The battery materials’ *processing* markets were surprised yesterday by an unexpected announcement from the UK’s most prominent technology metals’ processor, Johnson-Matthey Ltd. (JM), that it was withdrawing from the battery materials’ processing market due to its estimation that the return on capital from manufacturing lithium-ion battery cathodes would be too low to justify the allocation of capital required to do so. JM’s stated reason for this decision was that the battery materials’ business is becoming “commoditized,” so that JM’s hoped for competitive advantage based on its specialized cathode manufacturing technology would either not materialize or not be good enough to be competitive.

But, even if so, It is the timing of this announcement that seems puzzling.

Both CATL, China’s largest integrated battery manufacturer and

Umicore, Europe's largest battery materials *processor* have poor returns on capital in their respective battery business sectors, and this has been going on since both entered the battery business, so JM cannot have been surprised by this factor, and, in fact, should have taken it into account on day one of its foray into the battery materials' business.

So, what's it all about?

Large companies with either diversified products or vertical integration can distribute costs. Legacy OEM automotive EV makers, for example, like Germany's Volkswagen, which had a 5 billion Euro profit last year, can afford to lose some money introducing its EVs to the market at a loss per vehicle, while it tests both market acceptance and the lowering of manufacturing costs due to scaling up production.

Let's set aside my continuing accounting of battery raw materials' resources as woefully insufficient to support a transition to EVs, and concentrate on the OEM automotive industry's costs of bringing a new vehicle with any type of power train to market.

It is always multi-faceted crap shoot, and the history of government intervention in the car market is not one to inspire confidence.

Designing a new car and preparing to produce it costs billions of dollars and takes 3 to 6 years.

Government intervention in this market is always a compendium of what you can't do, not what you can. The U.S. and EU government's favorite regulatory intervention in the OEM automotive industry is the required "average miles-per-gallon" range for an OEM's output. This "standard" was first introduced to reduce the emissions of hazardous gases and then added the

reduction of the emission of particulates to its mandate. The current EV craze was actually the result of California's 1990's experimental legislation requiring the slow phase in of zero-emission vehicles. General Motors brought out a battery electric vehicle, the EV in the late 1990s, and Toyota introduced its "hybrid" Prius into the US (mainly California) market in 1997 to meet that mandate. The Prius, a hybrid, using, at first, a nickel-metal-hydride (the metal being a mix of rare earths) battery prospered. The EV with its lead-acid batteries and short range, 90 miles before needing a recharge, did not (It helped that GM lobbyists got California to suspend enforcement of the zero emissions mandate). GM had only leased its EVs; they were recalled and scrapped.

BEVs as a type went into hibernation until 2005 when Elon Musk decided that lithium-ion batteries were ready for prime time. Global Cooling became Global Warming and then Climate Change, and Musk's struggling, capital devouring, OEM automotive venture, Tesla, kickstarted a revival of a serious EV industry, something last seen by the great grandfathers of Detroit's, Wolfsburg's, Paris', and Tokyo's car industry leaders when they decided that Thomas Edison's Nickel-iron batteries were not practical for even their then short range motor cars. They knew that Rockefeller's gasoline and kerosene distribution system in "filling stations" was far more practical than Edison's expensive and hard to maintain DC generating stations except for trolley cars.

So, what's this got to do with JM's decision to pull out of the battery cathode business?

The answer is that JM has (correctly) concluded that the market, though large, is limited, and that very large profitable multi-product and/or vertically integrated or (whisper) state-supported companies are already driving prices down by

competition to get market share.

JM has concluded, again correctly, that most of the cars and trucks manufactured for the next generation will use internal combustion engines and that its core automotive exhaust emission catalytic converter business based on its dominance in the processing and use of platinum group metals is where it has the best competitive advantage and sunk costs.

The reputed costs to JM associated with building a Poland sited cathode plant were twice the industry average.

JM was once also in the rare earth processing business, and it exited that in the 1980s when the first Molycorp was losing its dominance to Chinese low-cost competitors. That was a wise decision then, and getting out of the lithium-ion battery cathode business before getting into massive non-recoverable debt is also a wise decision.

Finally, I would like to repeat my prediction that since the OEM automotive assemblers do not understand or want to understand that the manufacturing of EVs using lithium-ion batteries is limited by the availability of lithium, there will be a cull. The survivors will be those OEMs that can balance the production of their allocation of (raw materials' supply limited) EVs with ICE production profitably. BMW is my choice for the most likely survivor, because it has already announced that it will continue to produce a mix of powertrain choices in its vehicles. The rest, so far, are either going "all-electric" or eliminating ICE production and development. They chose poorly.

Appia’s Frederick Kozak on the role of rare earths and uranium in achieving a global NetZero emissions target

written by InvestorNews | February 5, 2024

In a recent InvestorIntel interview, Tracy Weslosky spoke with Frederick Kozak, President of Appia Rare Earths & Uranium Corp. (CSE: API | OTCQB: APAAF) about Appia’s recent change of name and about the critical importance of rare earths and uranium in the clean energy space as the world commits to a NetZero greenhouse gas emission goal.

In this InvestorIntel interview, which may also be viewed on YouTube (click here to subscribe to the InvestorIntel Channel), Frederick Kozak provided an update on Appia’s recent news release about the discovery of new, massive and semi-massive, monazite zones at the Wilson North area of their Alces Lake, Saskatchewan, project. He went on to say that Appia’s Alces Lake project has the potential to be one of the best monazite-hosted rare earths deposits in the world. Frederick also provided an update on Appia’s recent private placement which had to be upsized due to significant demand.

To watch the full interview, click here.

About Appia Rare Earths & Uranium Corp.

Appia is a Canadian publicly-listed company in the uranium and rare earths sectors. The Company is currently focusing on delineating high-grade critical rare earth elements, gallium and uranium on the Alces Lake property, as well as exploring for

high-grade uranium in the prolific Athabasca Basin on its Loranger, North Wollaston, and Eastside properties. The Company holds the surface rights to exploration for 83,706 hectares (206,842 acres) in Saskatchewan. Appia also has a 100% interest in 12,545 hectares (31,000 acres), with rare earths and uranium deposits over five mineralized zones in the Elliot Lake Camp, Ontario.

To learn more about Appia Rare Earths & Uranium Corp., click here.

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If you have any questions surrounding the content of this interview, please email info@investorintel.com.

US based rare earths processor, Energy Fuels announces a very robust third quarter

written by Tracy Weslosky | February 5, 2024
With COP26 just past its middle mark today, the stock rallies jettison around critical materials such as rare earths, cobalt, and lithium for electric battery materials, we at **InvestorIntel.com** are being deluged by interest from investors due to our editor in chief Jack Lifton's reputation as a renowned authority. Add in uranium, which is finally getting some attention it deserves with greater education in place on the value of nuclear energy as a leading cleantech solution, Obama's speech at COP26 that astutely draws attention to the global pollutant leaders, China coming in at a strong #1, and yes, the USA – we are #2.

In this drive to clean up the planet, however, let us draw attention to a global leader as the world forges ahead to a Net Zero economy in the next 20-30 years – Energy Fuels Inc. (NYSE American: UUUU | TSX: EFR).

North America's only processor of rare earths, Energy Fuels provided a very robust third quarter report earlier last week. The company owns the White Mesa Mill in southeast Utah, which is also the US's only commercial licensed processor of radioactive materials.

Energy Fuels has a strong balance sheet and ended the quarter with US$100.8 million in cash and marketable securities as well as $29.3 million of inventory, which has a current estimated value of $46.9 million, made up of 691,000 pounds of uranium and 1,672,000 pounds of high-purity vanadium, both in the form of an immediately marketable product.

Mark Chalmers, Energy Fuels' President and CEO, said it best: "Energy Fuels continues to make rapid progress toward positioning our White Mesa Mill as America's "Critical Minerals Hub," by maintaining the Mill's key uranium and vanadium production capabilities while further diversifying our portfolio to include rare earth elements production – an exciting and strategically important move both domestically and for the Company. We also continue to watch the uranium markets closely in order to best evaluate our opportunities to capitalize on recent price increases and market improvements."

The company also has been focusing its asset base on the sale of non-core, conventional uranium projects located in the United States in late October. The sale included cash on closing, shares in the purchasing company, future potential processing revenue as well as future potential payments based on new production from these assets.

The strategic positioning of Energy Fuels should not be underestimated by anyone following this sector. The global drive to Net Zero requires a massive amount of “clean energy”. This clean energy is destined for millions of new electric motors in wind turbines, electric vehicles and the never-ending consumption of small, strong permanent magnets in personal electronic devices. The demand so far outstrips the current supply that it is an almost inconceivable problem as the Western world seeks to eliminate the Chinese supply chain for critical materials.

Energy Fuels currently has the only facility in North America that is on track to start meeting this demand. They successfully delivered rare earth carbonate to Neo Performance Materials Inc.‘s (TSX: NEO) rare earths separation facility in Estonia. The company has a supply agreement for monazite sand from a United States supplier and is receiving multiple inbound expressions of interest for rare earths processing from potential suppliers around the globe.

The indisputable fact is that the clean energy economy will cost trillions of dollars and require resources that are not even in existence. We pledge as leaders in news and information on the critical materials sector to continue regular coverage of companies in the capital markets that are making a real difference.

Note from the Publisher: Tracy Weslosky is long Energy Fuels and Neo Performance Materials.