# Critical "rightsizing" governments' regulate market 

written by Tracy Weslosky | February 1, 2024 The past week has been pivotal for the critical minerals industry, marked by a notable adjustment in the market for electric vehicle (EV) materials. Jack Lifton, Co-Chairman of the Critical Minerals Institute (CMI), offers a perspective that contrasts sharply with the more alarmist tones often found in media coverage of this sector. According to Lifton, the recent downturn in prices for key EV component materials, such as those for batteries and magnets, should not be misconstrued as a disaster. Instead, it's a natural market correction, or "rightsizing," where supply and demand are finding their equilibrium without the heavy hand of regulatory intervention attempting to influence market outcomes. This view is particularly poignant as it reflects on Western governments' efforts to regulate the market, which Lifton suggests are largely ineffective in a true market economy driven by supply and demand dynamics.

Recent financial reports from industry leaders like China Northern Rare Earth have underscored this point, revealing a 60\% drop in profits due to declining rare earth element prices. This trend is not indicative of strategic market manipulation but rather a response to an overestimated demand for EVs, as evidenced by falling EV sales in significant markets such as California. This recalibration is further exacerbated by the economic climate in America and Europe, where high interest
rates have cooled consumer enthusiasm for major purchases, including EVs.

Despite these challenges, opportunities abound for discerning investors. Lifton advises that only the most efficient, low-cost producers of EV materials are likely to thrive under these conditions. Companies that can maintain profitability despite falling prices, particularly those in the neodymium sector, represent promising investment targets. This approach emphasizes the importance of due diligence, encouraging investors to closely examine the fundamentals of these companies, especially their production costs relative to current market prices.

The January 2024 CMI Report further contextualizes these market dynamics, highlighting the U.S. government's move to ban Pentagon battery purchases from major Chinese companies starting October 2027. This development, alongside global macroeconomic trends and specific updates in the EV sector, paints a picture of a market at a critical juncture. Despite the gloom surrounding EV and battery metals, with depressed prices and surplus inventory, the report suggests a stabilization in lithium prices and potential for recovery in demand and pricing in the coming months.

Recent news from Lynas Rare Earths adds another layer to this complex scenario. The company reported a significant drop in revenue, attributed to falling prices and reduced demand from China. This situation reflects broader market trends but also highlights Lynas' strategic moves to expand capacity and improve efficiency, suggesting a long-term view towards meeting future demand.

In conclusion, the narrative emerging from Jack Lifton's insights, the CMI report, and the latest developments from companies like Lynas offers a multifaceted view of the critical
minerals and EV materials market. While the short-term outlook may appear daunting, with price declines and demand uncertainties, the underlying message is one of resilience and strategic adaptation. For investors and industry stakeholders, the current market dynamics underscore the importance of efficiency, cost management, and the ability to anticipate and respond to evolving demand patterns. As the market continues to adjust, those who remain informed and agile are likely to navigate these shifts successfully, positioning themselves for growth as the sector evolves.

## Darren Hazelwood Discusses Panther's Substantial Land Package and VMS, Graphite Prospects the Greenstone Belt

written by InvestorNews | February 1, 2024
In an Investor.Coffee interview with Peter Clausi, Darren Hazelwood, CEO of Panther Metals PLC (LSE: PALM), discussed the company's strategic focus and current projects. Panther Metals is dedicated to developing the next Volcanogenic Massive Sulphide (VMS) camp in Canada, a significant endeavor considering VMS deposits include valuable minerals like copper, zinc, lead, gold, and silver. The company's exploration in the Obonga greenstone belt, located approximately 2.5 hours north of Thunder Bay by tarmac road, has already yielded promising
results.

# Jeff Killeen on PDAC 2024: Shaping the Future of Critical Minerals and Mining 

written by InvestorNews | February 1, 2024
In a recent Investor. Coffee interview, Jeff Killeen, Director of Policy and Programs at the Prospectors \& Developers Association of Canada (PDAC), highlighted the association's role beyond organizing its annual convention. Scheduled for March 3-6 in Toronto, the PDAC 2024 Convention is a significant event, but PDAC's involvement in the industry extends further. They engage in continuous advocacy, working closely with provincial and federal governments to shape policies and strategies that address the challenges and opportunities within the mineral exploration and mining sector such as the critical minerals flow through programs.

Jeff outlined PDAC's strategic plans, focusing on enhancing public understanding and demonstrating the industry's importance in modern living. This strategy aims to shape public perception, acknowledging its significant impact on the industry's future. Jeff's ambition for PDAC is to be recognized as a thought leader, with the organization's extensive programming covering various topics from commodity performance to community relations and indigenous-industry interactions. This positions PDAC as a pivotal source of knowledge and innovation in the field. Additionally, Jeff when asked about market trends noted a recent
increase in uranium exploration and investment, especially in Saskatchewan, highlighting nuclear power's role in a lowemission future.

Established in 1932, PDAC represents the Canadian mineral exploration and development industry's interests. Based in Toronto, Ontario, the association boasts approximately 7,200 members and is staffed by 25 full-time employees. Its annual convention in Toronto is a globally recognized event, attracting up to 25,000 attendees from over 130 countries. The convention is renowned for networking, deal-making, and discussions on current industry issues, trends, and technologies. PDAC's advocacy work is crucial, focusing on government policy issues relevant to the mineral exploration industry, including land access, Indigenous affairs, international affairs, responsible exploration, finance, taxation, geosciences, and health and safety, thereby enhancing Canada's position as a prime destination for mineral investment.

To access the rest of this interview, click here
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## About Prospectors \& Developers Association of Canada (PDAC)

The Prospectors \& Developers Association of Canada (PDAC) is the leading voice of the mineral exploration and development community, an industry that supports 719,000 people in direct and indirect employment, and contributes $\$ 106$ billion to Canada's GDP every year. Representing over 6,000 members around the world, PDAC's work centers on supporting a competitive, responsible, and sustainable mineral sector.

To learn more about PDAC, click here
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# Investor.Coffee (01.05.24): Strong U.S. Dollar Impact on Metal Prices, while Japanese Stocks Rise 

written by InvestorNews | February 1, 2024
Canadian stock index futures fell as a strong U.S. dollar impacted metal prices and investors anticipated the country's employment report. Wall Street futures also declined slightly ahead of the U.S. non-farm payrolls report, affecting expectations for the Federal Reserve's monetary policy. European stocks saw a decline, potentially marking their first weekly
loss in eight weeks, while Chinese stocks dropped due to economic and deflationary concerns. In contrast, Japanese stocks rose, helped by a weaker yen.

# The Critical <br> Minerals Institute Report (12.27.2023): Politics Driving Marketable Commodities into 2024 

written by Matt Bohlsen | February 1, 2024 Welcome to the December 2023 Critical Minerals Institute ("CMI") report, designed to keep you up to date on all the latest major news across the critical minerals markets. Here is the CMI List of Critical Minerals or click here to visit the CMI Library.

## Global macro view

December 2023 saw a further fall in U.S. inflation from 3.2\%pa in October to 3.1\%pa in November. As expected the U.S. Fed left interest rates unchanged at their December meeting. Even more significant was the Fed indicated that there are potentially ${ }^{3} \underline{3}$ interest rate cuts coming' in 2024. This was an early Christmas present for U.S. equity markets which continued their recent rally. Year to date, as of December 26, 2023, the S\&P 500 is up $25.75 \%$ and the NASDAQ is up an amazing $43.25 \%$. Of course, this follows heavy falls in 2022.

In late December China signaled a possible early 2024 interest
rate cut when they reduced bank deposit rates. As a result China 30 year government bond yields hit their lowest level since 2005. All of this recent support for China's economy and property market looks likely to set up a potential China recovery story in 2024. If China starts to recover in 2024 it would be a positive for commodity markets including the critical minerals.

The Russia-Ukraine war drags on through the European winter. There are some very early signs that both sides may be willing to end the war in 2024. We will see. Meanwhile, the Hamas-Israel war has been contained for now. We can only hope for peace in 2024.

## Global plugin electric vehicle ("EV") update

Global plugin electric car sales were 1,279,000 in October 2023 (the second-best month ever), up $37 \%$ YoY. November global sales reached 1.4 million. December should be even better. CPCA expects China's NEV (New Energy Vehicle) retail sales in December 2023 to reach a record 940,000 units (41.4\% market share), up $46.6 \%$ YoY. That should mean December global EV sales will be around 1.5 million.

This means that 2023 global plugin electric car sales should end up close to 13.6 million ( $\sim 17 \%$ market share), for a growth rate of $\sim 29 \%$ YoY (a significant slowdown from the $56 \%$ growth rate in 2022).

2023 Global plugin electric car sales (actual + forecast)


In other EV related news, in December Germany announced an abrupt ending to their EV subsidy. The subsidy was originally intended to apply until the end of 2024.

We also heard news that the U.S. is considering raising tariffs on Chinese EVs and Chinese solar products. The White House plans to complete a tariff review in early 2024. Chinese EVs entering the USA already have a $25 \%$ tariff. This follows the EU's probe into China subsidies for EVs. All of this has come about due to the fact that about 60\% of all global plugin EV sales are in China and the fact that China completely dominates the EV market and EV supply chain. This is now leading to a flood of compelling Chinese electric cars being exported to global markets where Western manufacturers (excluding Tesla Inc. (NASDAQ: TSLA)) are struggling to compete with China.

Finally, in December it was announced that Canada will require all new cars and trucks to be zero-emissions vehicles by 2035. The Canadian government stated: "The Standard will ensure that Canada can achieve a national target of 100 percent zeroemission vehicle sales by 2035. Interim targets of at least 20 percent of all sales by 2026, and at least 60 percent by 2030."

## Global critical minerals update

In December we got a key U.S. political announcement that will impact EV sales and critical minerals demand in 2024 and beyond.

## U.S. Foreign Entity of Concern ("FEOC") proposal

The U.S. DoE releases proposed interpretive guidance on Foreign Entity of Concern ("FEOC") rules. FEOC's include China, Russia, North Korea, and Iran. Key proposals include:

- Beginning 2024, companies that have >25\% ownership or control by a FEOC will not be eligible for tax credits available under the Inflation Reduction Act (IRA).
- Beginning in 2024, an eligible clean vehicle (for IRA credits) may not contain any battery components that are manufactured or assembled by a FEOC.
- Beginning in 2025, an eligible clean vehicle may not contain any critical minerals that were extracted, processed, or recycled by a FEOC.

These rules are quite strict and it is looking like the majority of EVs sold in the USA will not qualify in 2024 and hence not receive the subsidy of up to US $\$ 7,000$ per vehicle. For example, the Tesla Model 3 and Model Y base range EVs use Chinese made LFP batteries, making them both ineligible to meet the FEOC rules. Things will only get harder in 2025. Of course, this is designed to motivate auto and battery OEMs to hurry up and build a new western battery supply chain, independent of FEOC.

The FEOC proposal follows last month's news of new guidelines for the EU Critical Raw Materials Act ("CRMA") as discussed here. A key ruling was that "not more than 65\% of the Union's
consumption of each strategic raw material comes from a single third county."

## U.S. proposal to create a 'Resilient Resource Reserve' for key critical minerals

As reported in December, the U.S. select committee has recommended the creation of a critical mineral reserve to protect domestic industry. The Fastmarkets report stated:
"The adoption of such a reserve is intended to "insulate American producers from price volatility and (the People's Republic of China's) weaponization of its dominance in critical mineral supply chain. Such a reserve would be used to sustain the price of a critical mineral when prices fall below a certain threshold and would be replenished through contribution from companies when prices are "significantly" higher"...The fund would target critical metals where there is high price volatility, low US domestic production and import dependence on China. Cobalt, manganese, light and heavy rare earths, vanadium, gallium, graphite, germanium and boron are critical minerals that fall under that category, according to the report..."

## Note: Bold emphasis by the author.

## Lithium

China lithium carbonate spot prices fell again in December 2023, with the price now at CNY 96,500/t (USD 13,505/t) and down 82\% over the past year. Prices are now below the marginal cost of production, meaning a bottom should be found very soon (assuming EV sales hold up in 2024).

Industry participants are increasingly calling a likely bottom. For example, China Futures Co. analyst, Zhang Weixin, forecasts China's lithium carbonate spot to bottom out between CNY 80-

90,000/t (US\$11,200-US\$12,600/t). Goldman Sachs is a little more bearish with a 1 year price target for China's spot lithium carbonate of US $\$ 11,000 / t$.

The negative price action has not deterred SQM and Gina Reinhart's Hancock Prospecting (private) who recently increased their bid to A\$3.70 per share to takeover Australia's Azure Minerals Limited (ASX: AZS).

In December we saw shareholders approve the Allkem Limited (ASX: AKE | TSX: AKE) - Livent Corporation (NYSE: LTHM) 'merger of equals' which is now expected to close by January 4, 2024. The new company is to be known as Arcadian Lithium PLC (NYSE: ALTM | ASX: LTM).

Finally, in December we got news that free markets supporter Javei Milei was elected as the new Argentina President. This is good news for those companies with mining projects in Argentina, of which there are many lithium projects under development.

The lithium carbonate spot price collapsed in 2023 and is now below the marginal cost of production and expected to form a bottom very soon


Source: Trading Economics

## Magnet Rare Earths

Neodymium prices fell in December to CNY 560,000/t almost $1 / 3$ the price of the February 2022 peak. The one year outlook remains quite weak; however, this will largely depend on how China's economy performs in 2024. A strong pickup in EV sales in 2024 could quickly change the market dynamics.

The big news in December in the rare earths market this month was China's announcement to ban the export of rare earth processing technology. As discussed in an InvestorNews article, Western companies have been efficiently separating rare earths for some time, so this ban has minimal implications. CMI CoChair and rare earths expert, Jack Lifton, states: "Solvent extraction separation is a long-established practice everywhere. The issue is the production of rare earth metals and alloys and from them of rare earth permanent magnets. This is where China's massive lead in manufacturing technology may be insurmountable. Time will tell."

Of course, the trend for Western auto OEMs is concerning, especially following China's recent introduction of export license permits on graphite products (including synthetic graphite, flake graphite, and spherical graphite).

## Cobalt, Graphite, Nickel, Manganese, and other critical minerals

Cobalt prices (currently at US $\$ 12.91 / l \mathrm{~b}$ ) were lower the past month and continue to be very depressed. China's slowdown and the slowdown in global electronics sales have suppressed cobalt demand at the same time as new supply from the DRC and Indonesia has risen.

One glimmer of hope for the Western cobalt producers is that the U.S. government announced in December the creation of a critical mineral 'Resilient Resource Reserve' (as discussed above).

Flake graphite prices also remain very weak with prices near the marginal cost of production. Following the introduction of Chinese export license permits in December 2023 there has been some increased signs of buying activity and a slight graphite price improvement. However, the main concern for flake and spherical graphite is that lower energy input costs in China have lowered the cost of producing synthetic graphite, thereby dampening demand for flake and spherical graphite. Despite this, there are several analysts now forecasting graphite deficits to begin as soon as $2024 / 25$ as you can read in a recent InvestorNews article here.

Nickel prices fell slightly in December to US\$16,279/t. The $\underline{1}$ year outlook for nickel remains poor due to oversupply concerns from Indonesia. A recovering global economy and Chinese property sector will be needed to help balance the nickel market, which is currently in oversupply.

Manganese prices also fell slightly in December and are now at CNY29. 20/MTU.

2023 has been a tough year for many critical mineral prices (except for gallium, germanium, tellurium, indium, tin, and uranium - a critical mineral in Canada) as a slowing China and global economy weighed down demand at a time where supply increased. Uranium was the standout performer in 2023 with a gain of over $75 \%$. You can read an article here from back in April 2023 where we highlighted the coming rise of uranium.

The key to watch in 2024 will be if we see lower interest rates in China trigger a China property and economy recovery. A stronger U.S. and Europe in 2024 would also help boost the global economy and demand for critical minerals. Lower interest rates in 2024 could potentially make it a great year for the auto sector and EV metals.

Wishing you all a safe and prosperous 2024 from the Critical Mineral Institute ("CMI").

# Australia updates their Critical Minerals List and Adds a second, introducing the Australian Strategic Materials 

## List

written by Tracy Weslosky | February 1, 2024
The Albanese Government of Australia has recently undertaken a notable revision of its critical minerals policies, underscoring the nation's focus on energy, job creation, and national defense. These revisions include updating the Critical Minerals List and introducing a new Strategic Materials List, an integral part of a larger strategy to establish Strategic Critical Minerals Hubs across the country.

Significant changes to the Critical Minerals List have been made, notably adding fluorine, molybdenum, arsenic, selenium, and tellurium, while removing helium. This update brings Australia's list into closer alignment with those of its international strategic partners. These minerals play a vital role in the energy transition and are heavily utilized in the defense and technology sectors.

Alastair Neill, Director of the Critical Minerals Institute (CMI), offered an expert perspective on these additions. He remarked, "It was interesting to see some of the additions. Arsenic is involved pretty well in Europe and the US, but again China, has $40 \%$ of the world's production, I think the next largest is Peru. So there is lots of arsenic in North America. But just because of the environmental hoops that you have to go through to deal with that I think has prevented sort of domestic production. They also added molybdenum, which is an interesting choice, and tellurium, and selenium, which are very small markets by themselves." Neill's insights highlight the strategic considerations and complexities in the global supply chain of these minerals.

Additionally, the new Strategic Materials List complements the Critical Minerals List by identifying essential commodities for
the energy transition that are not at risk of supply chain disruptions. This list includes copper, nickel, aluminum, phosphorous, tin, and zinc, notable for their established industries and stable supply chains.

A key component of this initiative is the feasibility study for Strategic Critical Minerals Hubs, aimed at identifying potential locations for critical minerals infrastructure precincts, especially for commodities that might face supply chain disruptions. This study is informed by the Government's Critical Minerals Strategy and input from industry and state and territory resources ministers.

Minister for Resources and Northern Australia, Madeleine King, has emphasized that these changes are the culmination of extensive consultations with industry, the public, and state and territory governments. The updates are poised to enhance Australia's stature as a significant exporter of clean energy materials, reflecting the critical role of these minerals in the greening of Australia's economy and its national defense.

The Critical Minerals List and the Strategic Materials List will be updated regularly to reflect changing economic and geostrategic dynamics. The inclusion of minerals like copper, nickel, aluminum, phosphorous, tin, and zinc on the Strategic Materials List highlights their economic and strategic importance, especially in light of the global energy transition.

The Australian Government maintains both the Critical Minerals List and the Strategic Materials List to identify minerals crucial for the nation's modern technologies, economy, and national security. These lists are subject to review at least every three years and may be adjusted in response to global strategic, technological, economic, and policy changes. The Critical Minerals List comprises minerals essential for modern
technologies and national security, while the Strategic Materials List includes those important for the global transition to net zero and other strategic applications, but with currently stable supply chains. The government's ongoing support for the extraction and processing of these minerals is a critical aspect of monitoring their market developments.

## CMI Masterclass: Securing North America's Future, A Conversation on the Critical Minerals Supply Chains with Jack Lifton

written by InvestorNews | February 1, 2024
In an insightful interview conducted by Brandon Colwell, the Director and Government Relations Liaison for the Critical Minerals Institute (CMI), with CMI Co-Chairman Jack Lifton, the focus is on the burgeoning challenges and strategic responses related to critical mineral supply chains in North America, especially in the context of China's dominance. Jack, a veteran in the field with over 60 years of experience, points out the significant gap in subject matter expertise within the governments of the United States and Canada. This gap, he argues, hinders the effective development and implementation of policies in the mineral sector. He emphasizes the complex and time-consuming process of converting a mineral discovery into an economically viable mining project, underscoring the need for
more informed and strategic decision-making in governmental investments and policy development in this domain.

## CMI Masterclass: Flow Through and Critical Minerals

written by Jeff Todd | February 1, 2024
The recent Critical Minerals Institute (CMI) Masterclass, hosted by Tracy Weslosky, featured an in-depth discussion on the intricacies and opportunities of flow-through financing, particularly in the context of critical minerals. The panel included Peter Nicholson from Wealth Group (WCPD Inc.), JeanPhilippe (J.P.) Côté from Fasken, and Peter Clausi from Silver Bullet Mines Corp. (TSXV: SBMI | OTCQB: SBMCF) and CBLT Inc. (TSXV: CBLT), who provided valuable insights into this complex financing model.

Peter Nicholson elaborated on the evolution of the charitable flow-through model in financing, a model that has grown significantly since 2006. He emphasized its benefits in mitigating risks and offering tax advantages, particularly for high net worth individuals. He emphasized how the charitable flow-through model has grown to dominate the market, explaining its resilience during financial downturns and its importance in the current market.

Peter Clausi clarified the terminology and functioning of flowthrough shares. These shares are designed as a tax benefit, enabling losses from mining exploration to be passed to investors. He underscored that these are a creation of the

Income Tax Act, not affecting corporate or stock exchange structures.
J.P. Côté discussed the tax benefits associated with investing in companies exploring critical minerals, such as uranium. He highlighted the changes in tax credits, especially for critical minerals, and the implications of these incentives for exploration companies.

The panel also delved into the role of liquidity providers in the flow-through model, discussing the current market trends. They explored the challenges and opportunities for both investors and companies, especially considering recent markets and the growing focus on critical minerals.

There was a discussion on the increasing global interest in critical minerals, emphasizing the potential for institutional investors to play a more active role in this sector. The panelists also discussed the necessity for better understanding and utilization of flow-through financing among these investors.

From a legal and regulatory standpoint, J.P. Côté and Peter Clausi offered insights into the complexities of flow-through financing. They discussed the nuances of qualifying for critical minerals and the potential for future legislative adjustments in this area.

For investors looking to leverage flow-through financing in critical minerals, the session provided strategic advice. This included guidance on how to approach brokers and identify promising investment opportunities in this sector.

The discussion concluded with thoughts on the future of flowthrough financing. The panelists pondered its trajectory, especially considering political and economic changes, and the possibility of including sectors like renewable energy in this
financing model.
To access the complete video, click here
For more information on the Critical Minerals Institute or becoming a CMI Member, click here

# Navigating the Future of Critical Minerals: Ford's Battery Plant Downscale and Canada's \$1.5 Billion Push 

written by Tracy Weslosky | February 1, 2024
The automotive and energy sectors are witnessing significant shifts as companies and governments navigate the evolving landscape of electric vehicles (EVs) and sustainable energy. Two recent developments highlight these changes: Ford Motor Company's scaling back of its Michigan battery plant and the Canadian government's launch of a $\$ 1.5$ billion Critical Minerals Infrastructure Fund.

## Ford's Revised EV Strategy Amid Market Realities

Ford Motor Company's (NYSE: F) decision to scale back its \$3.5 billion battery plant in Michigan, reducing its production capacity by $43 \%$ and cutting jobs, reflects the challenges facing the EV market. Despite the initial excitement and investment in

EVs, consumer adoption has been slower than expected, and labor costs are rising.

## Political and Economic Implications

Ford's partnership with Chinese manufacturer CATL has stirred political debates, especially in the context of US-China relations. This move, along with broader market dynamics, signifies the complex interplay of economics, politics, and technological advancements in the EV sector.

## Canada's Strategic Move in Critical Minerals

Concurrently, Canada is stepping up its game in the critical minerals sector, crucial for clean technologies like EV batteries. The $\$ 1.5$ billion Critical Minerals Infrastructure Fund, announced by Natural Resources Canada, aims to fill infrastructure gaps and promote sustainable mineral production.

## A Synergistic Approach to Sustainable Development

Canada's fund is not just an economic investment but also a strategic move to position the country as a key player in the global shift towards a net-zero-emissions future. This initiative complements efforts like Ford's, focusing on the development of clean technologies and the reduction of carbon footprints.

## The Road Ahead for Ford and Global EV Market

Ford remains committed to its EV strategy, planning to open its revised battery plant in 2026. This plant will be crucial in
producing lithium iron phosphate (LFP) batteries, a cheaper alternative to traditional lithium-ion batteries, possibly giving Ford a competitive edge in the market.

## Canada's Vision for Clean Energy and Economic Growth

Canada's investment in critical minerals infrastructure is a forward-looking approach to enhancing its role in the global supply chain for clean technologies. The focus on sustainable extraction, processing, and recycling of minerals aligns with the global agenda for a net-zero-emissions economy.

## Conclusion: A Convergence of Efforts

The juxtaposition of Ford's scaled-back plans and Canada's aggressive investment in critical minerals infrastructure paints a picture of a world in transition. While challenges like market dynamics and political considerations shape corporate strategies, national initiatives aim to bolster the infrastructure and supply chains necessary for a sustainable future. Both Ford's recalibration and Canada's proactive steps are pivotal in driving the automotive and energy sectors towards a more sustainable and economically viable future.

# Bridging the Gap: The Role of Hybrids in the Transition to 

## Electric Vehicles

written by InvestorNews | February 1, 2024
In the evolving landscape of sustainable transportation, the debate between fully electric vehicles (BEVs) and plug-in hybrids (PHEVs) is intensifying. While BEVs are gaining momentum, hybrids are often viewed as a transitional technology, offering a bridge as we shift towards a more electric future.

## The Dominance of BEVs and the Role of Hybrids

In the United States, Tesla's dominance in the electric vehicle market, with over a 50\% share, underscores the nation's tilt towards BEVs. Tesla's exclusive focus on fully electric models is a key reason for this trend. Contrastingly, in China, BYD's balanced sales of $50 \%$ BEVs and $50 \%$ hybrids depict a more diversified approach towards electrification.

## Advantages of Hybrids

Hybrids bring several benefits to the table, particularly in the context of reducing the demand on critical minerals. They utilize smaller batteries compared to BEVs, leading to less mineral consumption. For instance, one EV typically uses a battery three to five times larger than a hybrid.

Additionally, hybrids offer practical advantages in terms of range and refueling. They align well with North America's vast distances and the current fuel infrastructure, eliminating the need for significant additional investments. Moreover, they present a more immediate solution to the limitations of the existing power grids in residential areas, particularly those established decades ago, which might not be equipped to handle a surge in electricity demand due to widespread adoption of BEVs.

## Economic and Environmental Considerations

From an economic standpoint, hybrids can be cost-effective.

Anecdotal evidence suggests significant savings in fuel costs. For example, covering 1,500 kilometers in a hybrid might only cost about $\$ 60$, split evenly between gas and electricity.

Environmentally, however, the impact is nuanced. Transportation accounts for approximately $14 \%$ of total greenhouse gas emissions. Complete transition to BEVs might not significantly alter the emission landscape, especially if the electricity required is generated from coal. Hybrids offer a middle ground, reducing emissions while not overburdening the electricity supply chain.

## Government Policies and Future Implications

Globally, governments are increasingly leaning towards BEVs in their quest to reduce emissions, often overlooking the potential role of hybrids in this transition. This preference may be driven by long-term environmental goals, but it also risks overlooking the immediate benefits and feasibility of hybrids.

## Conclusion

In conclusion, while the future seems electric with a growing preference for BEVs, hybrids should not be disregarded. They serve as an effective bridge technology, offering immediate benefits in terms of mineral usage, infrastructure compatibility, and economic feasibility. As the world navigates towards a greener future, a balanced approach incorporating both BEVs and hybrids might be the key to a more sustainable and practical transition in transportation. From a consumer point of view CMI Director Matt Bohlsen adds: "While hybrids make sense to lesson battery materials demand, consumers should ask do they want the burden of paying servicing costs for an ICE engine and all the systems that go with it? I would argue pure BEVs make the most sense, unless you need to drive very large distances each day or have issues accessing charging networks."
*CMI Director Matt Bohlsen reflects on the evolving dynamics in the electric vehicle industry and the role of hybrids as a bridge technology. CMI Director Alastair Neill's insights contribute to this comprehensive analysis.

