

# Tom Drivas Explores the Initial Rare Earth Mineral Resource Estimate from Appia's PCH Ionic Adsorption Clay Project in Brazil

written by InvestorNews | March 11, 2024

In this interview with Tracy Weslosky during PDAC 2024, Tom Drivas, CEO and Director of [Appia Rare Earths & Uranium Corp.](#) (CSE: API | OTCQX: APAAF) discussed the results from the maiden [Mineral Resource Estimate](#) for Appia's PCH Ionic Adsorption Clay Project in Brazil. Announcing a significant 52.8 million tonnes of resource, Tom highlighted the presence of extremely high-grades of rare earths within this resource, showcasing some of the highest TREO (total rare earth oxide) grades globally.

Tom emphasized the project's potential, stating, "We have only explored 1% of the total area... We have 40,000 hectares." Tom also highlighted the project's richness in magnet rare earths like neodymium and praseodymium, essential for producing permanent magnets in high demand. The addition of industry experts like Constantine Karayannopoulos, Jack Lifton and Don Hains, P. Geo to Appia's Advisory Board underscores the project's significance and potential.

Besides the project in Brazil, Appia is also advancing uranium exploration properties around the Athabasca Basin in Saskatchewan and has a significant uranium resource in Ontario at Elliot Lake. Notably, the company is also advancing its Alces Lake project in Saskatchewan, renowned for its high-grade

critical rare earths in monazite.

To access the full interview, [click here](#)

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## About Appia Rare Earths & Uranium Corp.

Appia is a publicly traded Canadian company in the rare earth element and uranium sectors. The Company is currently focusing on delineating high-grade critical rare earth elements and gallium on the Alces Lake property, as well as exploring for high-grade uranium in the prolific Athabasca Basin on its Otherside, Loranger, North Wollaston, and Eastside properties. The Company holds the surface rights to exploration for 94,982.39 hectares (234,706.59 acres) in Saskatchewan. The Company also has a 100% interest in 13,008 hectares (32,143 acres), with rare earth elements and uranium deposits over five mineralized zones in the Elliot Lake Camp, Ontario. Lastly, the Company holds the right to acquire up to a 70% interest in the PCH Project (See June 9<sup>th</sup>, 2023 Press Release – Click [HERE](#)) which is 40,963.18 ha. in size and located within the Goiás State of Brazil. (See January 11<sup>th</sup>, 2024 Press Release – [Click HERE](#))

To learn more about Appia Rare Earths & Uranium Corp., [click here](#)

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## **Mark Chalmers on Energy Fuels as a Profitable Uranium Producer in the U.S.**

written by InvestorNews | March 11, 2024

In this interview with Tracy Weslosky during PDAC 2024, Mark Chalmers, President, CEO, and Director of [Energy Fuels Inc.](#) (NYSE American: UUUU | TSX: EFR), shared insights into the company's record [annual net income](#) and its strategic advancements in both uranium production and rare earths processing. He emphasized the dual investment opportunity that Energy Fuels offers in uranium and rare earths, a combination rarely found in the sector.

With the uranium market "on fire right now", Mark highlighted Energy Fuels' unique position in the market as a debt-free and profitable uranium producer. Having recently commenced uranium production at three of its uranium mines, Mark proudly noted Energy Fuels' readiness for immediate production without the

need for substantial capital investments.

Mark also shed light on Energy Fuels' ventures into rare earths, particularly the processing of monazite that concurrently allows for uranium recovery. Mark pointed out recent strategic moves, including the acquisition of the Bahia Project in Brazil and a memorandum of understanding with [Astron Corporation Limited](#) (ASX: ATR) to jointly develop the Donald Rare Earth and Mineral Sands Project, located in Victoria, Australia. Mark also highlighted the commissioning of phase one of a separation plant at the White Mesa Mill in Utah to process up to 1000 tons of neodymium-praseodymium (NdPr).

To access the complete interview, [click here](#)

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## About Energy Fuels Inc.

Energy Fuels is a leading US-based critical minerals company. The Company, as the leading producer of uranium in the United States, mines uranium and produces natural uranium concentrates that are sold to major nuclear utilities for the production of carbon-free nuclear energy. Energy Fuels recently began production of advanced rare earth element ("REE") materials, including mixed REE carbonate, and plans to produce commercial quantities of separated REE oxides in the future. Energy Fuels also produces vanadium from certain of its projects, as market conditions warrant, and is evaluating the recovery of radionuclides needed for emerging cancer treatments. Its corporate offices are in Lakewood, Colorado, near Denver, and substantially all its assets and employees are in the United States. Energy Fuels holds two of America's key uranium production centers: the White Mesa Mill in Utah and the Nichols

Ranch in-situ recovery (“**ISR**”) Project in Wyoming. The White Mesa Mill is the only conventional uranium mill operating in the US today, has a licensed capacity of over 8 million pounds of  $U_3O_8$  per year, and has the ability to produce vanadium when market conditions warrant, as well as REE products, from various uranium-bearing ores. The Nichols Ranch ISR Project is on standby and has a licensed capacity of 2 million pounds of  $U_3O_8$  per year. The Company recently acquired the Bahia Project in Brazil, which is believed to have significant quantities of titanium (ilmenite and rutile), zirconium (zircon) and REE (monazite) minerals. In addition to the above production facilities, Energy Fuels also has one of the largest NI 43-101 compliant uranium resource portfolios in the US and several uranium and uranium/vanadium mining projects on standby and in various stages of permitting and development.

To learn more about Energy Fuels Inc., [click here](#)

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# Tom Drivas on the 3 world-renowned rare earths experts on Appia's Critical Minerals Advisory Committee

written by InvestorNews | March 11, 2024

In a recent interview with host Tracy Weslosky, Tom Drivas, CEO and Director of [Appia Rare Earths & Uranium Corp.](#) (CSE: API | OTCQX: APAAF), [announced](#) the significant addition of Constantine Karayannopoulos to Appia's Critical Minerals Advisory Committee. Tom discussed how this move is a major endorsement of Appia's projects, given Constantine's reputation in the rare earths sector. Constantine, who is well known for his leadership in the critical mineral sector lead the Neo Materials deal by Molycorp in 2012 for C\$1.3 billion. He was also the co-founder and Chairman of the Board of Neo Lithium Corp. when it was sold to Zijin Mining Group Co., Ltd. for \$960 million in 2022.

Constantine Karayannopoulos joins Appia's Advisory team, alongside world renowned critical minerals expert and the co-founder and Co-Chair of the [Critical Minerals Institute](#) (CMI) Jack Lifton. Jack who was the co-editor of the recently published textbook, [Rare Earth Metals and Minerals Industries: Status and Prospects 1st ed. 2024 Edition](#), is joined with Don Hains, P. Geo who is a Consulting Geologist and well-known expert in ionic clay projects. In this interview, Tom emphasizes how having three of the world-renowned rare earths experts on Appia's Critical Minerals Advisory Committee supports the commitment to leverage top-tier expertise to advance Appia's



Projects in Canada and Brazil.

Appia's recent [announcement](#) of exceptional diamond drill results from the PCH ionic adsorption clay project in Brazil was also discussed in the interview. These results have revealed significant concentrations of Total Rare Earth Oxide (TREO) within the top 20 meters from the surface. Tom added, "Just for comparison, there is a deposit that went into production in the same area, and their average grade is 1,200 parts per million (PPM). We're getting up to 93,000 PPM."

Moreover, Tom outlined Appia's broader strategy, which encompasses both rare earths and uranium projects. Tom outlined Appia's involvement in the uranium sector, noting several uranium projects in the Athabasca Basin in Saskatchewan and Ontario. With plans to [begin drilling](#) at the Loranger Uranium-Bearing Property in Saskatchewan, Tom explains how Appia is positioning itself to capitalize on the rising uranium market. To access the full interview, [click here](#)

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Company also has a 100% interest in 13,008 hectares (32,143 acres), with rare earth elements and uranium deposits over five mineralized zones in the Elliot Lake Camp, Ontario. Lastly, the Company holds the right to acquire up to a 70% interest in the PCH Project (See June 9<sup>th</sup>, 2023 Press Release – Click [HERE](#)) which is 40,963.18 ha. in size and located within the Goiás State of Brazil. (See January 11<sup>th</sup>, 2024 Press Release – [Click HERE](#))

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# **Technology      Metals      Report**

# **(02.11.2024) : Constantine Karayannopoulos Resurfaces, Landmark \$18.8 Billion Cathode Supply Deal in Tennessee, and Canada Invests in Ucore**

written by Tracy Weslosky | March 11, 2024

Welcome to the latest Technology Metals Report (TMR) where we highlight the top news stories that members of the [Critical Minerals Institute](#) (CMI) have forwarded to us in the last week. Key highlights in this Technology Metals Report include significant developments such as Appia Rare Earths & Uranium Corp. enriching its advisory committee with the appointment of industry veteran Constantine Karayannopoulos, a move poised to strengthen its strategic capabilities in the critical minerals sector. Additionally, stories highlighted last week include Ford Motor Company's substantial \$4.7 billion loss in its electric vehicle (EV) segment for 2023, a figure that underscores the economic challenges facing companies transitioning to electric mobility.

Moreover, this edition of the TMR delves into Bora Mining Services' strategic acquisition in the Steenkampskraal Monazite Mine and the landmark \$18.8 billion cathode supply deal between General Motors and LG Chem, both of which underscore the strategic efforts to secure critical materials for the burgeoning EV market. The report also examines Hitachi Construction Machinery's innovations with its all-electric dump truck prototype, signaling a push towards sustainability in mining operations. Commentary on the EV market by industry

expert Jack Lifton highlights the sector's challenges and misalignments with consumer preferences. Furthermore, Canada's advancement over China in the BloombergNEF Global Lithium-Ion Battery Supply Chain Ranking and the discontinuation of merger talks between Lynas Rare Earths and MP Materials are highlighted, reflecting the dynamic nature and strategic maneuvers within the global critical minerals and electric vehicle sectors.

**Appia Appoints Constantine Karayannopoulos as New Member to Its Critical Minerals Advisory Committee (February 9, 2024, [Source](#))** – [Appia Rare Earths & Uranium Corp.](#) (CSE: API | OTCQX: APAAF) announced the appointment of Constantine Karayannopoulos to its Advisory Committee, alongside rare earths experts Jack Lifton and Don Hains. Karayannopoulos, with a 30-year career in the rare earth and critical minerals sectors, including as President and CEO of [Neo Performance Materials Inc.](#) (TSX: NEO), brings significant expertise to Appia. His background includes pivotal roles in the industry, such as leading the first foreign company in China's Rare Earth industry and co-founding Neo Lithium Corp. His appointment, starting February 1, 2024, is set to enhance Appia's strategic capabilities in the critical minerals sector, supported by his consulting company, Kloni Inc. Appia has granted 300,000 options to Kloni Inc. as part of this agreement.

**Rare Earths Discovery Near Wheatland So Big It Could Be World Leader (February 7, 2024, [Source](#))** – American Rare Earths Limited (ASX: ARR | OTCQB: ARRNF) has made a groundbreaking discovery near Wheatland, Wyoming, revealing 2.34 billion metric tons of rare earth minerals, significantly surpassing initial estimates and other local discoveries. This positions Wyoming as a key player in reducing reliance on China's rare earth market, vital for green energy technologies. With only 25% of their land explored, the potential for further discoveries is immense. The company, part of an Australian enterprise, plans scalable mining

operations to meet the high global demand. This development, along with other explorations in Wyoming, could transform the U.S. into a major source of rare earth minerals, essential for a range of advanced technologies. Further economic and development projections are anticipated, underlining Wyoming's emerging significance in the global rare earth industry.

**Ford Lost \$4.7B On EVs Last Year, Or About \$64,731 For Every EV It Sold (February 7, 2024, [Source](#))** – Ford Motor Company's venture into electric vehicles (EVs) in 2023 resulted in a significant financial loss, overshadowing its overall profits for the year. The company experienced an operating loss of \$4.7 billion from its EV business, termed as "Model e," despite achieving a net income of \$4.3 billion on \$176 billion revenue. This loss equates to approximately \$64,731 for each of the 72,608 EVs sold last year, demonstrating the financial challenge of transitioning to electric mobility. The loss was attributed to competitive pricing, strategic investments in new EV development, and exceeded Ford's initial projections. The automotive giant's commitment to EVs, which includes a \$50 billion investment plan, has been questioned in light of these results. Additionally, Ford's EV production adjustments and the broader automotive industry's challenges with EV demand and profitability highlight the difficulties in achieving widespread EV adoption. This situation reflects broader market trends and concerns over the viability and appeal of EVs, particularly in markets dominated by conventional vehicles and specific demographic niches.

**Bora Mining Acquires Share in Steenkampskraal Monazite Mine (February 7, 2024, [Source](#))** – Bora Mining Services (BMS) has acquired a share in Steenkampskraal Monazite Mine (SMM), a high-grade rare earths and thorium mine, to commence operations in early 2024. With a significant investment, including a R1 billion infrastructure, BMS aims to refurbish and develop the

mine, leveraging its expertise in mining operations. The mine boasts an impressive 14.5% average grade of total rare earth oxides, with potential for resource expansion. The partnership focuses on producing monazite concentrate initially, with plans to extend production to mixed rare earth carbonate and thorium. The project has received positive feedback from regulatory bodies and has a dynamic growth strategy across three phases, eventually aiming to produce individual rare earth oxides. The initiative is expected to cater to global rare earth demands, with thorium also highlighted for its safety and potential in cancer therapy.

**South Korea's LG Chem signs \$19 bln cathode supply deal with General Motors (February 7, 2024, [Source](#))** – General Motors (GM) and South Korea's LG Chem have signed a \$18.8 billion deal for cathode material supply, enhancing GM's electric vehicle (EV) production chain from 2026 to 2035. This partnership aims to support the production of 5 million high-performance EVs, with LG Chem's Tennessee plant serving as a cornerstone for a localized supply chain. The agreement, building on a prior commitment for over 950,000 tons of Cathode Active Material, signifies a major step towards sustainable EV production. The Tennessee facility, set to be America's largest cathode plant, will primarily supply Ultium Cells LLC, a GM and LG Energy Solutions joint venture, potentially extending to other GM EV projects. This move aligns with U.S. Inflation Reduction Act criteria, emphasizing local supply chain benefits.

**Hitachi launches final tests of its electric dump truck (February 6, 2024, [Source](#))** – Hitachi Construction Machinery has introduced a prototype of its all-electric dump truck, which is now undergoing final testing at a copper-gold mine in Zambia. Based on the EH4000AC-3 model with a 221-tonne payload, this electric version includes ABB's battery technology and converters. Unlike its diesel counterpart, it operates on



internal batteries on level ground and external trolley power uphill, while regenerative braking recharges the battery downhill. Performance details are pending, but the combustion engine model's specs offer insight. This initiative, started in 2021 by Hitachi and ABB, aims to meet electric dump truck demand in mining and reduce emissions, highlighting a shift towards electrification in heavy machinery and contributing to environmental sustainability.

**Riding the EV Revolution Rollercoaster Amid the West's Electric Car Climbdowndown (February 5, 2024, [Source](#))** – Jack Lifton's critique on the electric vehicle (EV) industry highlights the clash between government strategies and market dynamics, alongside the competitive pressure from Chinese manufacturers. He points out major manufacturers like Renault and Volvo retreating from ambitious EV projects due to mismatches in market demand and production costs. Jack also observes a consumer shift back to petrol models, suggesting a misalignment between EV production and consumer preferences. Advocating for hybrids, he emphasizes the need for adaptability, innovation, and market responsiveness. His insights stress the importance of aligning visionary goals with practical market demands and competitive challenges, underlining the complexity of navigating the evolving EV landscape with agility and foresight.

**South African platinum industry could shed up to 7,000 jobs to cut costs (February 5, 2024, [Source](#))** – The South African platinum industry, responsible for about 70% of the world's mined platinum, may cut 4,000 to 7,000 jobs due to restructuring amid high costs and declining prices. The Minerals Council highlighted this at the Investing in African Mining Indaba conference in Cape Town, noting the impact of the shift towards electric vehicles and the falling demand for platinum group metals (PGMs) used in traditional combustion engines. High electricity and labor costs, along with a 40% and 15% drop in



palladium and platinum prices respectively, have pressured miners. Major companies like Anglo American Platinum and Sibanye Stillwater are considering operation restructuring and job cuts to reduce expenses, facing challenges from lower ore grades and rising input costs.

**China Drops to Second in BloombergNEF's Global Lithium-Ion Battery Supply Chain Ranking as Canada Comes Out on Top (February 5, 2024, [Source](#))** – Canada has taken the top spot in BloombergNEF's Global Lithium-Ion Battery Supply Chain Ranking, outpacing China due to its ample raw materials, policy support, and strong ties with the US auto industry. This represents a significant shift, emphasizing the increasing importance of sustainability and ESG practices in the sector. North America shines in the rankings, with policy initiatives like the US Inflation Reduction Act bolstering the region's standing. Mexico notably rose nine spots, benefiting from its industrial base and potential US policy impacts. Global investment in clean energy supply chains hit \$135 billion, highlighting the sector's growth and the evolving dynamics of trade relations. The ranking assesses countries on raw materials, manufacturing, demand, ESG, and innovation, reflecting the global push towards sustainable energy solutions.

**Australia's Lynas Rare Earths quits tie-up talks with MP Materials (February 5, 2024, [Source](#))** – Australia's Lynas Rare Earths and U.S.-based MP Materials terminated merger discussions amid valuation disagreements and strategic considerations. The potential union aimed to bolster supply chain diversification for critical minerals outside China, which commands the rare earth market. The talks' cessation reflects the complexities of consolidating operations within the global rare earths industry, crucial for technology and defense sectors. Despite the strategic intent to reduce reliance on Chinese rare earths, both companies faced hurdles, including technological challenges and

anti-trust regulations. Lynas, with significant projects across Australia, Malaysia, and the U.S., and MP Materials, which relies on Chinese refining, concluded that the merger lacked sufficient synergies to proceed, underscoring the intricate dynamics of international rare earths commerce.

**Canada Announces Over \$4 million to Support Critical Minerals Value Chains and Create Good Jobs in Ontario (February 5, 2024, [Source](#))** – Canada is investing \$4.2 million in Ucore Rare Metals Inc. through the Critical Minerals Research, Development, and Demonstration (CMRDD) program to enhance the country's capabilities in producing critical minerals essential for the green and digital economy. This investment, announced by Mark Gerretsen, aims to scale up Ucore's rare earth element separation technology, pivotal for electric vehicle motors and renewable energy technologies. It promotes domestic processing, reducing reliance on foreign separation and bolstering Canada's electric vehicle value chain. This initiative will create employment, including for Indigenous communities, and support Canadian technological advancements in sustainable practices. It aligns with Canada's commitment to a cleaner, low-carbon economy by fostering competitive value chains and economic growth.

**Germany's dream of 15 million electric vehicles is fading away (February 3, 2024, [Source](#))** – At a Berlin auto industry event, BMW CEO Oliver Zipse and Transport Minister Volker Wissing highlighted the slowdown in electric vehicle (EV) adoption in Germany. Despite previous optimism, challenges such as a saturated high-end market, lack of affordable options, dwindling government incentives, and inadequate charging infrastructure have emerged. With EV sales projected to drop and the ambitious goal of 15 million EVs by 2030 now looking unrealistic, the industry faces a pivotal moment. The need for diversified vehicle power solutions, including combustion, hybrid, and hydrogen vehicles, becomes apparent. Analysts are skeptical

about meeting emissions targets without further subsidies, pointing to a broader slowdown that could impact investment and long-term environmental goals.

Special thanks to the [Critical Minerals Institute – Leading the Critical Minerals Sector](#), for more information or to send us a highlighted industry story you think we need to include in our weekly Technology Metals Report, please send to Raj Shah – my co-editor, at [raj@investornews.com](mailto:raj@investornews.com). Thank you.

### **Investor.News Critical Minerals Media Coverage:**

- February 6, 2024 – Global Winds: Opening the Door for a New Middle Eastern Hegemon <https://bit.ly/492BPbH>
- February 5, 2024 – Riding the EV Revolution Rollercoaster Amid the West's Electric Car Climbdow <https://bit.ly/42oLYNn>
- February 4, 2024 – Empowering Canadian Resource Exploration: The Strategic Role of Flow-Through Shares, and the Power of PDAC <https://bit.ly/3uv4pm0>

### **Investor.News Critical Minerals Videos:**

- February 8, 2024 – Jack Lifton and Panther Metals Darren Hazelwood on the “greenstone belt for VMS deposits” in Canada <https://bit.ly/42zDzqv>
- February 8, 2024 – Fathom's Ian Fraser on Rising Market Interest in Albert Lake and Nickel as a Critical Mineral <https://bit.ly/49uxFcu>
- February 5, 2024 – Tawana Bain and ACRG's Drive for a Sustainable American Supply Chain through Net-Zero Mineral Production <https://bit.ly/4bnBcLg>
- February 5, 2024 – Terry Lynch on Power Nickel's Ambitious 2024 Drilling Program at the Nisk Project in Nemaska

<https://bit.ly/49i70Ei>

- February 5, 2024 – Voyageur Pharmaceutical's Brent Willis on Revolutionizing the Medical Imaging Industry, plus SmoothX <https://bit.ly/3SsrLLt>

### **Critical Minerals IN8.Pro Member News Releases:**

- February 9, 2024 – Ucore Announces Closing of Final Tranche of Upsized Debenture Offering <https://bit.ly/49o07Na>
- February 9, 2024 – Appia Appoints Constantine Karayannopoulos as New Member to Its Critical Minerals Advisory Committee <https://bit.ly/30CnNVL>
- February 9, 2024 – American Rare Earths Limited: Appointment of Chairman – Richard Hudson <https://bit.ly/3HU47Ji>
- February 8, 2024 – Auxico Announces Sampling Results From a Geological Report on the Minastyc Property <https://bit.ly/3UAtsj3>
- February 8, 2024 – Fathom Announces Start of Drilling at Albert Lake Project <https://bit.ly/499VW7K>
- February 8, 2024 – Appia Announces Outstanding Re-Assayed Diamond Drill Results Including 100 Metres Averaging 3,577 PPM TREO at Its PCH Ionic Clay Project, Brazil <https://bit.ly/48dX0Ts>
- February 7, 2024 – American Rare Earths Resource Estimate Increased by 64% <https://bit.ly/3SuhAfU>
- February 7, 2024 – Imperial Mining Announces Shareholder Approval of Name Change to Scandium Canada Ltd. and Results of its 2024 Annual and Special Meeting <https://bit.ly/49nEltY>
- February 5, 2024 – Ucore Welcomes Canadian Government Officials to its Kingston Ontario CDF for an NRCan Funding Announcement <https://bit.ly/495cTA3>

- February 5, 2024 – Nano One Provides Shareholder Update with Key Objectives for 2024 <https://bit.ly/49mNgut>
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# Attention set on rare earths in Canada and Brazil, Appia hits 2024 running

written by InvestorNews | March 11, 2024

[Appia Rare Earths & Uranium Corp.](#) (CSE: API | OTCQX: APAAF) (“Appia”) has several projects located across Canada and Brazil with rare earths and uranium potential, as well as some other valuable metals. The current focus for Appia is on advancing their two key rare earths projects Alces Lake Project in Canada and the PCH Ionic Clay Project in Brazil.

Today we give an update on Appia’s latest activity at these two projects.

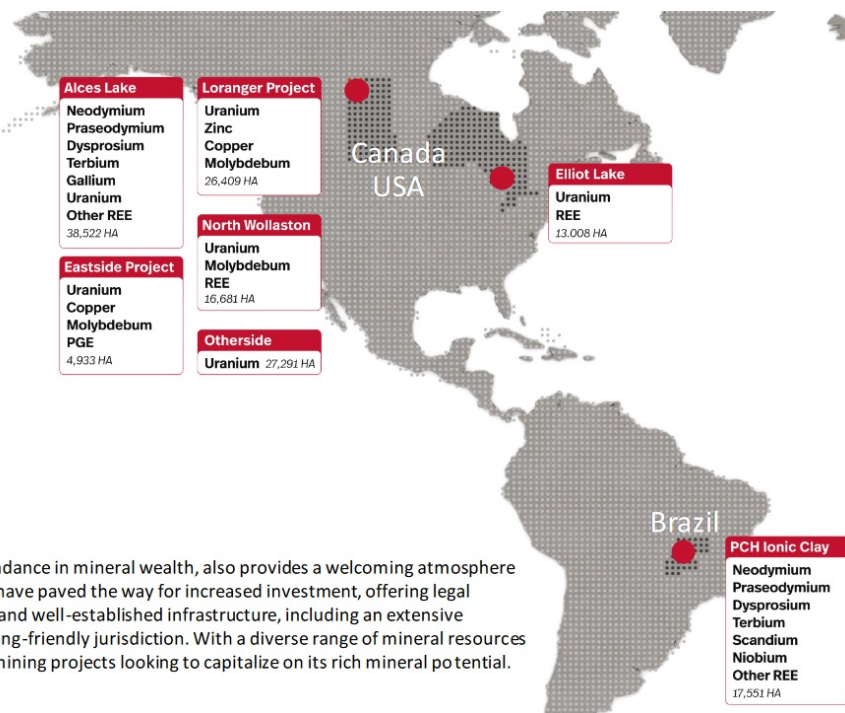
**Appia’s projects are located in Canada and Brazil with a focus on rare earths and uranium**

## Our Projects

Appia is strategically positioned with mining projects in two of the world's most mining-friendly jurisdictions, Canada and Brazil. These locations offer an array of compelling reasons for our choice.

Canada, renowned for its political stability and robust legal framework, stands as a beacon of security for mining investments. With a rich endowment of mineral resources and a well-established mining industry, Canada provides a secure environment where investor interests are safeguarded. The nation's geological diversity opens up vast opportunities for resource exploration, and its experienced mining workforce ensures efficient project execution. Additionally, Canada's developed infrastructure and skilled labour force create an environment where mining operations can thrive with ease. **The Company holds a large uranium ground position in Elliot Lake and four highly prospective uranium exploration projects in the prolific Athabasca Basin area: Loranger, North Wollaston, Eastside and Otherside.**

In the southern hemisphere, Brazil, while boasting similar abundance in mineral wealth, also provides a welcoming atmosphere for mining endeavors. The country's regulatory improvements have paved the way for increased investment, offering legal certainty for mining operations. Brazil's geological accessibility and well-established infrastructure, including an extensive transportation network, further underscore its appeal as a mining-friendly jurisdiction. With a diverse range of mineral resources and a skilled workforce, Brazil represents an ideal location for mining projects looking to capitalize on its rich mineral potential.



Source: [Appia company presentation](#)

## Alces Lake Project in Canada (100% owned)

The Alces Lake Project is located in Northern Saskatchewan and is known for having exceptionally high rare earths grades and gallium in favorable monazite ore. Appia [state](#): "Alces Lake Project in Saskatchewan's Athabasca Basin is the highest-grade critical rare earths prospect in North America and one of the highest-grade rare earths prospects in the world."

Appia is now starting to release their latest results from the 2023 drill campaign from the Magnet Ridge Zone at Alces Lake.

Appia [announced](#) on January 15, 2024: "Assays of **up to 1.57 wt.% (15,700 ppm) Total Rare Earth Oxides (TREO)** were returned, with thickness and grades increasing to the south-southeast...**Mineralization intervals occur from near surface to < 85 metres depth.**"



Appia also [announced](#) in January 2024 that they have signed a new Cooperation Agreement with the Ya'thi Néné Lands and Resources Office.

Near term catalysts from Alces Lake include further assay results from the 40 diamond drill hole summer 2023 exploration program.

## The PCH Project in Brazil (option to acquire [up to 70% interest](#))

The PCH Project is potentially a very significant ionic clay rare earths project located in Goiás, Brazil. Ionic clay projects are favored as the extraction process for rare earths is a relatively simple and less expensive process, already widely practiced in China. Furthermore, Appia's PCH Project has all the key rare earths needed for the powerful magnets used in electric motors in most EVs. Most other projects don't have this complete spectrum as discussed by leading rare earths expert Jack Lifton [here](#).

Drill results [announced](#) in October 2023 from the PCH Project have been very encouraging, including Hole RC-063 that reported 24 metres of mineralization from surface **with a total weighted average of 27,188 ppm or 2.72% of Total Rare Earth Oxides (TREO)**. The hole remains open at depth and has extended the known area of Target IV.

Appia Geology Manager, Carlos Bastos, [stated](#): *"The assay results from PCH-RC-063 are highly promising, revealing sustained mineralization of essential elements including **Terbium (Tb), Dysprosium (Dy), Neodymium (Nd), and Praseodymium (Pr)**. Notably, several elements surpassed the upper detection limit of the assay method being used, and updated results will be reported*

once received.”

*Note: Bold emphasis by the author.*

On January 16, 2024, Appia announced [reanalysis](#) of Hole RC-063 resulting in even higher grades of a **Total Weighted Average of 38,655 ppm or 3.87% TREO**.

From the first 10 holes drilled at the PCH Project the total weighted average grade is 7,578 ppm or [0.76% Total Rare Earth Oxide](#).

The January 11, 2024 Appia [announcement](#) highlights the excitement that the Appia team has towards the PCH Project. They announced an extension of their existing mining claims at the Project from 17,551.07 hectares to an expansive 40,963.18 hectares across a total of 22 claim blocks. The substantial 133% increase in the current land package includes 12 new claims independently staked by the Company and incurred minimal costs.

The PCH Project is situated in a jurisdiction supportive of mining activities with many major mining corporations actively exploring and mining located just ~30 km from the city of Iporá. Access is good using well-developed regional roads with [optimal infrastructure](#) including water and power to the Project. Appia [says](#) that “the Project has the support of both local and state governments”.

Appia is targeting a Maiden Resource for the PCH Project Target IV in [Q1, 2024](#).

**Typical differences between ionic clay and hard rock rare earth projects**



	IONIC CLAY	HARD ROCK
Location	Mainly China, Brazil, Africa	China, USA, Australia Canada
Type of REE	Contain both Heavy and Light REE	Mainly Light REE
CAPEX and OPEX	Low CAPEX & OPEX	Same as other hard rock mining deposits – higher costs for drilling and blasting
Exploration and Mining	Quick, inexpensive, simple, shallow drilling in weathered granites; mainly found in top 10-30 metres. Easy mining without drilling or blasting. Environmentally friendly and therefore easier to permit.	More expensive exploration: Deeper, diamond core drilling, blasting, open-pit or underground mining; tailings
Processing	Simple leaching and very little radioactivity	High temperature cracking; tailings; often containing higher radioactivity

Source: [Appia company presentation](#)

## Closing remarks

Appia is making steady progress on multiple projects with the key focus currently on the Alces Lake Project in Canada and the PCH Project in Brazil. Both Projects have strong potential with good grades and amenable ore, but will take time to develop. Appia also has their various uranium projects, but that's for next time.

Appia trades on a market cap of [C\\$27 million](#). 2024 could potentially be a very big year for Appia. Stay tuned.

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## Curtis Moore on Energy Fuels' competitive advantage in the

# North rare earths market

# American

written by InvestorNews | March 11, 2024

In an InvestorNews interview, Tracy Weslosky spoke with Curtis Moore, Senior VP of Marketing & Corporate Development at [Energy Fuels Inc.](#) (NYSE American: UUUU | TSX: EFR). Curtis discussed Energy Fuels' focus on monazite sand, highlighting its high neodymium-praseodymium (NdPr) content, which provides a cost processing advantage over other rare earths bearing ores like bastnaesite. He explained that monazite's value is enhanced by its higher concentration of NdPr, essential for permanent rare earth magnets used in EVs and wind turbines, and its higher concentration of heavy rare earths. Curtis noted that while monazite has higher uranium and thorium levels than bastnaesite, Energy Fuels can efficiently process these elements at their uranium mill. He emphasized Energy Fuels' unique advantage in handling the naturally occurring uranium and thorium in rare earth bearing ores, a significant challenge for other companies. This capability allows them to potentially monetize these elements, especially as thorium markets mature.

Curtis also addressed a key question he wishes people would ask more often: why Energy Fuels is likely to succeed in the rare earth sector where many others have failed? He attributed their potential success to their inherent advantages in processing rare earth bearing ores and producing advanced materials. These advantages include their experience with solvent extraction, a technology crucial for producing separated rare earth oxides, and their existing infrastructure at the White Mesa Mill in Utah. Curtis highlighted their \$25 million investment in a rare earth separation circuit at the mill, which is expected to be operational in the first quarter of 2024, with a capacity to

produce about 1000 metric tons of NdPr oxide per year, enough for 500,000 to 1,000,000 EVs annually. He expressed high confidence in their ability to succeed in the rare earth industry due to these factors.

To access the complete interview, [click here](#)

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## About Energy Fuels Inc.

Energy Fuels is a leading US-based critical minerals company. The Company, as the leading producer of uranium in the United States, mines uranium and produces natural uranium concentrates that are sold to major nuclear utilities for the production of carbon-free nuclear energy. Energy Fuels recently began production of advanced rare earth element (“**REE**”) materials, including mixed REE carbonate, and plans to produce commercial quantities of separated REE oxides in the future. Energy Fuels also produces vanadium from certain of its projects, as market conditions warrant, and is evaluating the recovery of radionuclides needed for emerging cancer treatments. Its corporate offices are in Lakewood, Colorado, near Denver, and substantially all its assets and employees are in the United States. Energy Fuels holds two of America's key uranium production centers: the White Mesa Mill in Utah and the Nichols Ranch in-situ recovery (“**ISR**”) Project in Wyoming. The White Mesa Mill is the only conventional uranium mill operating in the US today, has a licensed capacity of over 8 million pounds of  $U_3O_8$  per year, and has the ability to produce vanadium when market conditions warrant, as well as REE products, from various uranium-bearing ores. The Nichols Ranch ISR Project is on standby and has a licensed capacity of 2 million pounds of

U<sub>3</sub>O<sub>8</sub> per year. The Company recently acquired the Bahia Project in Brazil, which is believed to have significant quantities of titanium (ilmenite and rutile), zirconium (zircon) and REE (monazite) minerals. In addition to the above production facilities, Energy Fuels also has one of the largest NI 43-101 compliant uranium resource portfolios in the US and several uranium and uranium/vanadium mining projects on standby and in various stages of permitting and development.

To learn more about Energy Fuels Inc., [click here](#)

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## **Jack Lifton interviews Mark**

# Chalmers on Energy Fuels Strategic Path to Dominance in the North American Rare Earths Market

written by InvestorNews | March 11, 2024

In a recent interview with Jack Lifton, Co-Chairman of the Critical Minerals Institute (CMI), Mark Chalmers, President, CEO and Director of Energy Fuels Inc. (NYSE American: UUUU | TSX: EFR) discussed the company's pivotal role in North America's rare earth production landscape. Lifton opened the conversation by highlighting the scarcity of rare earth producers in North America, noting that Energy Fuels Inc. and MP Materials Corp. (NYSE: MP) are the only two companies currently active in this space. Chalmers elaborated on Energy Fuels' unique approach to this market, particularly its focus on monazite, a mineral essential for producing magnet rare earths.

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## Energy Fuels Leverages Strategic Opportunities in the Critical Minerals Sector: A Comprehensive Interview with

# CEO Mark Chalmers

written by InvestorNews | March 11, 2024

In a recent engaging discussion with Brandon Colwell, President of the Critical Minerals Institute (CMI), Mark Chalmers, President, CEO and Director of Energy Fuels Inc. (NYSE American: UUUU | TSX: EFR), shed light on the company's latest achievements and future strategies in the critical mineral supply chain, especially focusing on uranium, rare earth elements (rare earths), and vanadium.

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## Tom Drivas on how Appia is unlocking the dual potential of rare earths and uranium

written by InvestorNews | March 11, 2024

In a recent InvestorNews interview, host Brandon Colwell sat down with Appia Rare Earths & Uranium Corp.'s (CSE: API | OTCQX: APAAF) CEO and Director Tom Drivas, to discuss the exceptional drilling results from Appia's PCH Ionic Clay Project in Brazil. Discussing the consistency and high-grade rare earths mineralization at the project, Tom highlights that the average grades of Total Rare Earth Oxides (TREO) is comparable to, or surpasses, other well-known international deposits.

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# Energy Fuels on Path to Become the American Critical Mineral Powerhouse

written by InvestorNews | March 11, 2024

Uranium has been a winning sector in 2023 with uranium prices up 41% YoY, making it the best performing energy commodity in the past year. As the uranium price hovers near a 12 year record high (US\$69/lb), today's company is set to benefit.